Construction Notice
Mount Perry 138 kV Switch Project

PUCO Case No. 23-1054-EL-BNR

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

Submitted by:
AEP Ohio Transmission Company, Inc.

December 8, 2023

Construction Notice

AEP Ohio Transmission Company, Inc.
Mount Perry 138 kV Switch Project

4906-6-05

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

4906-6-5(B) General Information

B(1) Project Description

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

The Company proposes the Mount Perry 138 kV Switch Project (the "Project"), located in Perry County, Ohio. The Project is necessitated by a request from Buckeye Power, Inc. ("the Customer") on behalf of South Central Power Company ("SCP"), for a new 138 kV delivery (Mount Perry) from the existing Crooksville-North Newark 138 kV Transmission Line (approved under PUCO Case No. 19-0951-EL-BLN). The Project will require the installation the Mount Perry 3-way, phase-over-phase (POP), switch. The delivery request also requires constructing approximately 0.1 miles of new, 138 kV line from the Mount Perry Switch to SCP's new Mount Perry Station, which will be filed with OPSB under a separate cover (Case No. 23-1053-EL-BNR).

Figure 1 and Figure 2, included in **Appendix A,** show the location of the Project in relation to the surrounding vicinity.

The Project meets the requirements for a Construction Notice (CN) because it is within the types of projects defined by item 2(a) of Ohio Administrative Code Section 4906-1-01 Appendix A of the Application Requirement Matrix for Electric Power Transmission Lines:

> *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:*
>
> *(a) Two miles or less.*

The Project has been assigned PUCO Case No. 23-1054-EL-BNR.

B(2) Statement of Need

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

Buckeye Power, Inc. on behalf of SCP, requested the Company to provide a 138 kV delivery point along the Crooksville-North Newark 138 kV Transmission Line, specifically the northern Crooksville - North Newark 138 kV Circuit, by June 2025 to serve their new, Mount Perry stepdown station. The proposed delivery point will have an expected peak demand of 4.3 MW considering contingency loading and will be used to serve existing load presently served via SCP's Somerset delivery point. The new Mount Perry delivery point will improve reliability and power quality to SCP's distribution members in northern Perry County, Ohio.

Failure to move forward with the proposed project will result in the inability to meet the wholesale Customer's request.

The need and solution for the entire customer project were presented and reviewed with stakeholders at the September 2021 and June 2022 PJM SRRTEP meetings, respectively. The Project was subsequently assigned PJM supplemental number s2794. This Project was included in the Company's 2023 Long Term Forecast Report ("LTFR") and is located on page 39 of 49 of the Company's supplement LTFR document, filed July 7th 2023. (**see Appendix B**)

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 and proposed transmission lines and substations is shown on **Figure 1**.

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.

No other alternatives were considered for the Project due to the location of the proposed Mount Perry Station on SCP's property and the existing Crooksville – North Newark 138 kV Transmission Line. The location of the Project was dictated by existing transmission line infrastructure and existing wetlands and streams from SCP's selected location of the proposed station.. A wetland delineation and stream assessment was conducted for the Project area in October 2022. A total of two wetlands and two streams were delineated (See **Appendix D**), however no impacts to the streams and wetlands are anticipated for construction. There are also no known cultural resources in the Project area. The current Project design minimizes construction impact, by locating the switch along the existing transmission line. In addition, the Project has no impacts to delineated streams, wetlands or cultural resources. For these reasons, the location of the Project minimizes impacts to the community and the environment and represents the most suitable location and most appropriate solution for meeting the Company and SCP's needs.

B(5) Public Information Program

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

The Company maintains a website (http://aeptransmission.com/ohio/) which will provide the public access to an electronic copy of this CN. An electronic copy of the CN will be served to the public library in each political subdivision affected by this proposed Project. The Company retains ROW land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the Project. **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 anticipated to begin in March 2024, and the anticipated in-service date is July 2025.

B(7) Area Map
The applicant shall provide a map of at least 1:24,000 scale clearly depicting the facility with clearly marked streets, roads, and highways, and an aerial image.

Figure 1 provides the proposed Project area and existing transmission facilities on a map of 1:24,000-scale (1-inch equals 2,000 feet), showing the Project on a US Geological Survey 7.5 topographic map of the Glenford Quadrangle. **Figure 2** shows the Project area on recent aerial photography, dated 2020, as provided by Environmental Systems Research Institute (ESRI), at a scale of 1:6000(1-inch equals 500 feet).

To visit the Project from Columbus, Ohio, take S 3rd Street toward E State Street for 0.3 miles; Turn left onto E Main Street, turn right onto S 5th Street, turn left onto E Fulton Street, and then merge onto I-70 E via the ramp to Wheeling. Take I-70 E for approximately 39 miles to OH-668/Brownsville Rd. Turn right onto OH-668 S/Brownsville Road (2.9 miles). The Project is located approximately 0.8 mile south on OH-668 from the intersection with Hopewell Indian Road (latitude 39.898447 longitude, -82.253528).

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.

A list of properties required for the Project is provided in the table below.

Property Parcel Number	Agreement Type	Easement or Option Obtained (Yes/No)
120000860200	New Easement	Yes
120000860300	New Easement	Yes

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 is anticipated to include the following:

Line Asset Name: Crooksville – North Newark 138 kV Line
Asset Ownership: AEP Ohio Transmission Company, Inc.
Voltage: 138 kV
Conductors: (3) 795 kcmil 26/7 Strands DRAKE ACSR
Static Wire: (2) 7#10 Alumoweld 7 Strands
Insulators: NCI (Polymer): Strain Insulators
ROW Width: 100ft
Structure Types: (1) Custom Steel, Galvanized, 3-way MOAB Switch on Custom Concrete Pier Foundation.

B(9)(b) Electric and Magnetic Fields

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

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

B(9)(c) Project Cost

The estimated capital cost of the project.

The capital cost estimate for the proposed Project is estimated to be estimated to be $ 1,100,950, using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company Inc.'s FERC formula rate (Attachment H-20 to the PJM OATT) and allocated to the AEP Zone.

B(10) Social and Economic Impacts

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

B(10)(a) Land Use Characteristics

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

An aerial photograph of the Project vicinity is provided as **Figure 2** in **Appendix A**. The Project location and vicinity have historically been primarily wooded and agricultural land. There is also a surface mine in approximately 184ft northeast from the Project and an inactive mine mapped underneath the proposed Customer station The Project is mapped within the northeast corner of Hopewell Township, Perry County. The Project area is currently rural in nature and is comprised primarily of forested land, surface mining activity and lesser amounts of agricultural land, old or fallow fields, and scattered residences, located along State Route 668 north and south of the Project. The Project is located approximately 13 miles west of the city of Zanesville.

B(10)(b) Agricultural Land Information

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

The Perry County Auditor web site and the Perry County GIS Viewer provides information regarding the parcels that are registered as Agricultural District Land. As a result, from review of online sources in December 2023, the Project is not located within lands identified as Agricultural District Lands.

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.

Phase I Archaeological Investigations and separate History/Architecture Investigations for the Project occurred in December 2022. No previously identified archaeological sites are located within the Project area and no new archaeological sites were identified during survey. Consultation with the Ohio State Historic Preservation Office (SHPO) was initiated in December 2022, and a response was received in January 2023, which is included in **Appendix C**. The SHPO concurred with the determinations of the archaeological and architectural surveys and stated that the Project will have no effect on historic properties, and that no further investigation or consultation with the SHPO is necessary.

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

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

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHC000006. The Company will also coordinate storm water permitting needs with local government agencies, as necessary. The Company will implement and maintain best management practices as outlined in the Project-specific Storm Water Pollution Prevention Plan to minimize erosion and control sediment to protect surface water quality during storm events.

A wetland delineation and stream assessment was conducted for the Project area in October 2022 to determine the presence/absence of any jurisdictional waters or wetlands along the access route from the Customer station to the proposed switch location. A total of two wetlands and two streams were delineated (See **Appendix D**), however no impacts to the streams and wetlands are anticipated for construction.

FEMA Flood Insurance Rate Maps were consulted to identify any floodplains/flood hazard area that have been mapped in the Project area (specifically, map number 39127C0050D. Based on this map, no FEMA regulated floodplains or floodways are located within the Project study area.

There are no other known local, state, or federal requirements that must be met prior to commencement of the proposed Project.

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

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

In September of 2022, coordination letters were sent to the U.S. Fish and Wildlife Service (USFWS) and a response from USFWS was received on October 21, 2022. According to the response letter received from the USFWS, this Project is not anticipated to have any adverse effects to federally endangered, threatened, or proposed species (Appendix C).

In September 2022, coordination letters were sent to the Ohio Department of Natural Resources (ODNR) soliciting responses which were received on November 15, 2022. According to the response from ODNR, four federally and state listed species (bats) and two state listed species (fish and bird species) within the Project vicinity (See **Appendix C**).

The ODNR noted bat species included the state and federally endangered Indiana bat (*Myotis sodalist*), the state and federally threatened northern long-eared bat (*Myotis septentrionalis*), the state endangered little brown bat (*Myotis lucifugus*) and the state endangered tricolored bat (*Perimyotis subflavus*). The Company's consultant completed a bat roost tree survey and mist net surveys in Summer 2022 as part of the Crooksville-North Newark 138 kV Transmission Line (approved under PUCO Case No. 19-0951-EL-BLN) project and identified habitat for the four listed bat species. Tree clearing required for the Crooksville-Newark 138 kV Transmission Line project may continue through May 31, 2027 in accordance with USFWS bat protocol and clearing time of year restrictions, October 1 through March 31. For the Mount Perry 138 kV Switch Project no tree clearing is proposed and therefore, impacts to the listed bat species are not anticipated.

ODNR noted the potential for the state threatened lake chubsucker (*Erimyzon sucetta).* No in-water work is proposed as part of the project, thus there will be no impacts to the lake chubsucker (*Erimyzon sucetta).*

ODNR noted the potential for the northern harrier (*Circus hudsonius*), a state endangered bird. The Company's consultant completed a desktop habitat assessment in April 2022 in which suitable habitat was identified as part of the Crooksville-North Newark 138 kV Transmission Line (approved under PUCO Case No. 19-0951-EL-BLN) project. Presence/absence field studies were then conducted in April-May 2023. No northern harrier species were observed during the field surveys. ODNR accepted the findings of the studies on June 13, 2023 (ODNR-19-862) and noted their concurrence with the project area having low-quality habitat and breeding period restrictions did not need to be enforced. The location of the Project is within the study area reviewed by ODNR in June 2023, suitable habitat for the northerner harrier is not located within the Project area and no impacts to the species or habitat is anticipated. Copies of the reports and ODNR correspondence are included in **Appendices C** and **D**.

B(10)(f) Areas of Ecological Concern

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

The Company's consultant completed an ecological survey in October 2022 and prepared a Wetland Delineation and Stream Assessment Report, which is provided in **Appendix D**. The survey of the Project area identified a total of two wetlands, one intermittent stream, and one ephemeral stream. Both delineated wetlands were classified as palustrine emergent (PEM) and total less than 0.1 acre. The delineated intermittent stream flows approximately 405 feet through the Project survey area, and the delineated ephemeral stream flows approximately 164 feet through the Project survey area. No ponds were identified within the Project survey area. No temporary or permanent impacts to either streams or wetlands are anticipated, as no in-water work would occur as part of the Project.
No trees are anticipated to be removed as part of the Project.

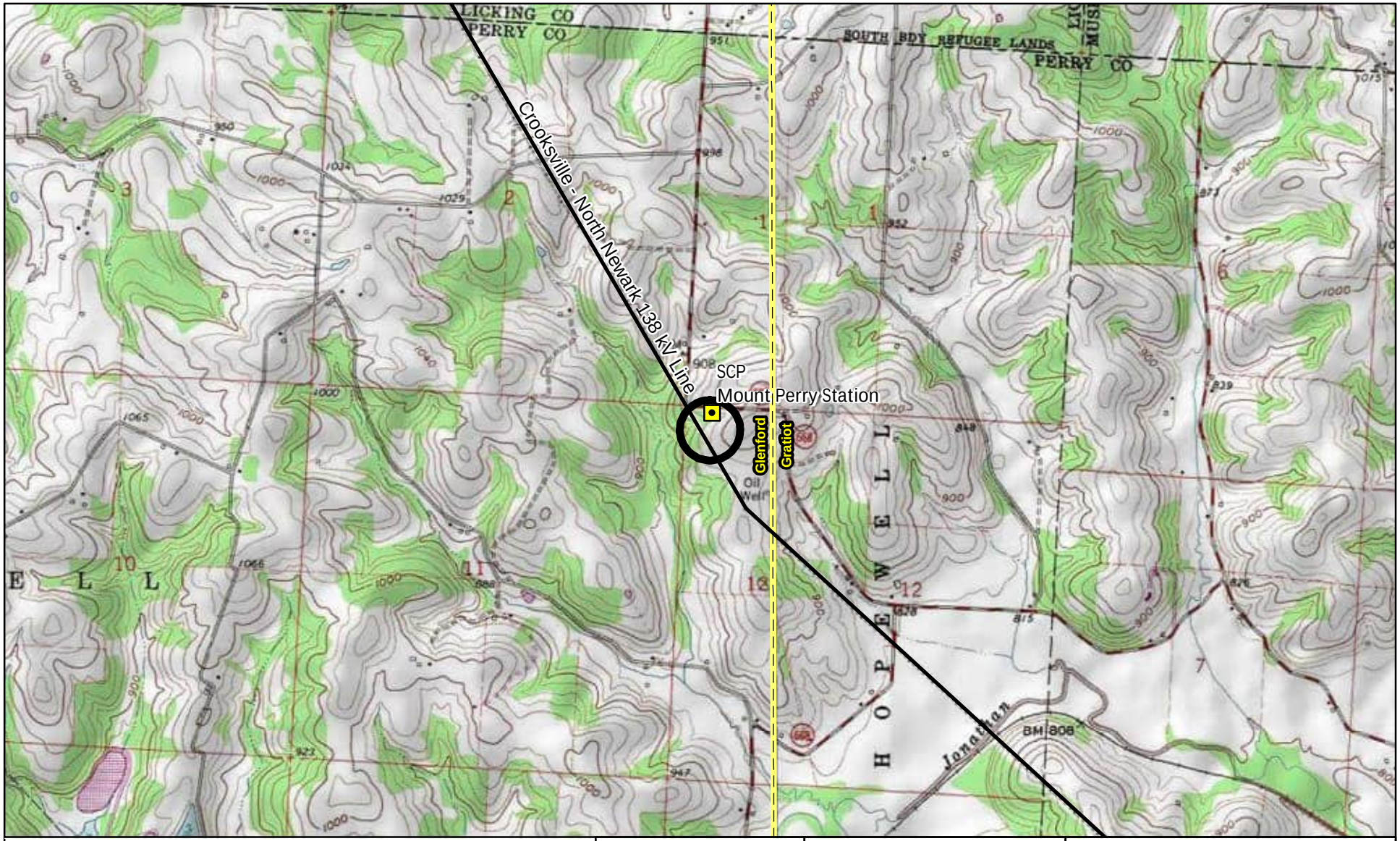
No national or state forests, national, state, or local parks, floodplains/floodways, national or state wild and scenic rivers, wildlife refuges, management areas, or sanctuaries are located within the Project based on desktop review.

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 the Company's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Appendix A Project Figures



Customer Station
Existing Transmission Line
U.S. Topographic Boundary

Data Sources: AEP, USGS 7.5' Topographic Quadrangle (Glenford)

Coordinate System and Datum:
NAD 83 State Plane
Ohio South, Feet

December 07, 2023

FIGURE 1
TOPOGRAPHIC OVERVIEW

AEP OHIO TRANSMISSION COMPANY

Construction Notice
Mount Perry 138kV
Switch Project

0 1,000 2,000 3,000 4,000
Feet

Customer Station
Proposed Mount Perry 138kV Switch
Proposed Mount Perry 138kV Extension (Filed Seperately: 23-1053-EL-BNR)
Existing Transmission Line
Parcel Boundary

Data Sources: AEP, NAIP Imagery, 2021

Coordinate System and Datum:
NAD 83 State Plane Ohio South, Feet

December 07, 2023

FIGURE 2
AERIAL MAP

AEP OHIO TRANSMISSION COMPANY

Construction Notice
Mount Perry 138kV
Switch Project

0 500 1,000
Feet

Appendix B Form Easement

Appendix C Agency Coordination

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

October 21, 2022

Project Code: 2022-0090679

Dear Mr. Holmes:

The U.S. Fish and Wildlife Service (Service) received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse effects to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: Due to the project, type, size, and location, we do not anticipate adverse effects to federally endangered, threatened, or proposed species or proposed or designated critical habitat. If there are any project modifications during the term of this action, or additional information for listed or proposed species or their critical habitat becomes available, or if new information reveals effects of the action that were not previously considered, then please contact us for additional project review.

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

Sincerely,

Patrice Ashfield
Field Office Supervisor

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

November 15, 2022

Joshua Holmes
AECOM
Foster Plaza 6
681 Anderson Drive, Suite 120
Pittsburgh, Pennsylvania 15220

Re: 22-1014; AEP Mt. Perry Switch Project

Project: The proposed project will construct a new 138kV deliver point for service to South Central Power on the Crooksville North Newark circuit.

Location: The proposed project is located in Hopewell Township, Perry County, Ohio.

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

Natural Heritage Database: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

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

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

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range the lake chubsucker (*Erimyzon sucetta*) a state threatened fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.

The project is within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, this project is not likely to impact this species.

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

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

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator

Buchanan, Becky

From: Amy J Toohey <ajtoohey@aep.com>
Sent: Thursday, June 15, 2023 8:53 AM
To: Buchanan, Becky; David L Sowers Jr; Luz Abreu-Cohmer; Corson, Robert; Katie Burns; Alicia M Cross
Subject: FW: AEP Crooksville-Newark Center 138kV Northern Harrier Absence/Presence Survey results ODNR 19-862

Greetings:

We have ODNR concurrence on the Absence/Presence report for Crooksville-Newark Center 138kV—regarding environmental perspective construction can begin in the northern harrier areas. I am not sure if this approval needs to be docketed or not for OPSB before work can begin (I am not sure who the siting lead is as it has been inactive on siting components for a while-2021).

Thank you
Amy

From: Nathan.Reardon@dnr.ohio.gov <Nathan.Reardon@dnr.ohio.gov>
Sent: Thursday, June 15, 2023 7:44 AM
To: Amy J Toohey <ajtoohey@aep.com>
Subject: [EXTERNAL] RE: AEP Crooksville-Newark Center 138kV Northern Harrier Absence/Presence Survey results ODNR 19-862

Amy,

Because the northern harrier was not detected following the ODNR-DOW northern harrier protocol, the DOW concurs that the northern harrier is not likely present within the project area. Work may begin/resume without breeding period restrictions. I would also agree that any suitable habitat within the project area is low quality. Therefore, additional surveys or breeding period restrictions are not warranted.

Thank you,
Nathan

Nathan Reardon
Compliance Coordinator
ODNR Division of Wildlife
2045 Morse Road
Columbus, OH 43229
Phone: 614-265-6741

Email: nathan.reardon@dnr.ohio.gov

Support Ohio's wildlife. Buy a license or stamp at wildohio.gov.

From: Amy J Toohey <ajtoohey@aep.com>
Sent: Tuesday, June 13, 2023 10:46 AM
To: Reardon, Nathan <Nathan.Reardon@dnr.ohio.gov>
Subject: AEP Crooksville-Newark Center 138kV Northern Harrier Absence/Presence Survey results ODNR 19-862

Greetings:

The subject project will rebuild the existing 138kV line on existing alignment from the Crooksville Station north to the Newark Center switch (the larger project is Crooksville to North Newark). The subject project area extends from Perry County to Licking County along the maintained right-of-way. As a result of early coordination with ODNR, it was recommended consideration of the habitat in the project area for suitable habitat for the northern harrier.

AECOM completed a habitat assessment of the project area and determined areas of potential suitable habitat. In consultation of the ODNR protocol AECOM completed absence/presence survey for the areas noted in the survey memo attached. Also attached for your review is the kmz of the project area. As a result of the Northern Harrier absence/presence survey it was concluded that no impact to the Northern Harrier will occur by the project. The review also recommended that based on further field review and given the current habitat conditions at the grasslands, that no further surveys in 2024 would be required. Essentially, it was concluded that due to location of grasslands and overall suitable habitat potential. A kmz of the line is attached to help with your review and concurrence.

In summary, based on AECOM's results from the absence/presence survey and more detailed field review of the conditions of the project area in regard to suitable habitat, it was concluded that the project would not impact the Norther harrier and no further surveys are required due to the grassland location/condition or lack of suitable habitat.

Please let me know if you if you have any questions/concerns or need additional information to help with your review.

Thank you for your continued help and guidance with the projects,
Amy

AMERICAN ELECTRIC POWER
BOUNDLESS ENERGY™

AMY J TOOHEY | **ENVIRONMENTAL SPEC CONSULT**
AJTOOHEY@AEP.COM | | C:614.565.1480
8600 SMITHS MILL ROAD, NEW ALBANY, OH 43054

In reply, refer to
2022-PER-56698

January 25, 2023

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

RE: Mount Perry Switch Project, Hopewell Township, Perry County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received December 27, 2022 regarding the proposed Mount Perry Switch Project, Hopewell Township, Perry County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Cultural Resource Management Investigations for the 1.8 ha (4.4 ac) Mount Perry Switch Project in Hopewell Township, Perry County, Ohio* by Ryan J. Weller and Scott McIntosh (Weller & Associates, Inc. 2022).

A literature review, visual inspection, shovel probe and shovel test unit excavations were completed as part of the investigations. No previously identified archaeological sites are located within the project area and no new archaeological sites were identified during survey. Our office agrees no additional archeological investigation is needed. One (1) property fifty years of age or older was identified within the Area of Potential Effects (APE). Weller recommends this property is not eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with Weller's recommendation of eligibility.

Based on the information provided, we agree that the project as proposed will have no effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1096185

Appendix D Ecological Resources Inventory Report

MOUNT PERRY SWITCH INSTALL AND CROOKSVILLE- N. NEWARK LINE WORK TR 380 TIE PROJECT

PERRY COUNTY, OHIO

ECOLOGICAL REPORT

Prepared for:
American Electric Power Ohio Transmission Company
8600 Smiths Mill Road
New Albany, Ohio 43054

Prepared by:

525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 60690752

December 2022

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TABLES (in-text)

FIGURES

Number

APPENDICES

Number

1.0 INTRODUCTION

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing the Mount Perry Switch Install and Crooksville-N. Newark Line Work TR 380 Tie Project (Project) in Perry County, Ohio. The project will construct a new 138kV delivery point for service to South Central Power on the Crooksville North Newark circuit. The project will install a 3-way POP MOAB switch and build a 0.05 mile line to SCPs new Mount Perry Station and up to an additional 0.50 miles for the Crooksville-N Newark Tie. The Study Area associated with this Report for the Project is located on the Glenford, Ohio U.S. Geologic Survey 7.5' topographical quadrangle as displayed on Project Overview Map (Figure 1).

The Project overlaps with the Crooksville – North Newark 138kV Transmission Line Rebuild Project (Crooksville). AECOM previously completed a wetland delineation and stream investigation for the Crooksville study area. Features delineated as part of the Crooksville investigation were reviewed, new data and photographs were collected, and location confirmed during the site assessment and are provided on **Figure 3**.

The purpose of the field survey was to assess the presence of wetlands and other "waters of the United States" (WOTUS) that occur along the proposed Project alignment. Secondarily, land uses were also recorded to classify and characterize potential habitat for rare, threatened, and endangered species. This report will be used to assist AEP Ohio Transco's efforts to identify potential WOTUS and rare, threatened, and endangered species habitat present along the proposed Project alignment to avoid or minimize impacts during construction activities.

2.0 METHODOLOGY

The field survey was conducted over a Project survey area of approximately 4.41 acres. Prior to conducting field surveys, digital U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data, U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) data, and U.S. Geological Survey (USGS) National Hydrography Dataset (NHD), FEMA 100-year floodplain data (FEMA), and USGS 7.5-minute topographic maps were reviewed as an exercise to identify the occurrence and location of potential wetland areas.

Field survey activities included recording the physical boundaries of observed water features using sub-meter capable EOS Arrow Global Positioning System (GPS) units in conjunction with ArcCollector application on iPad tablets. The GPS data was imported into ArcMap Geographic Information System (GIS) software, where the data was reviewed, edited for accuracy, and compiled in a format suitable for transfer and use by AEP Ohio Transco. Water features were delineated and assessed based upon the appropriate procedures detailed below. Land uses observed within the Project survey area were assigned a general classification based upon the principal land characteristics and vegetation cover of the location.

2.1 WETLAND DELINEATION

The Project survey area was evaluated according to the procedures outlined in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (*1987 Manual*) (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (EMP Regional Supplement*) (USACE, 2010).

During field survey activities AECOM utilized the routine on-site delineation method described in the *1987 Manual* and *Regional Supplements* that consisted of a pedestrian site reconnaissance, including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. If a wetland was identified, AECOM completed a USACE Wetland Determination Data form (USACE Data form) within each unique wetland habitat to serve as a representative of the wetland hydrology, vegetative community, and soil characteristics. Adjacent to each wetland complex, AECOM completed an additional USACE Data form as a representative of the upland community.

Additionally, USACE Data forms and representative photographs were also taken to represent upland communities where desktop review indicated the potential presence of an aquatic feature based on aerial imagery, two or less wetland criteria were observed, and/or an absence of an aquatic features was observed for areas mapped as an NWI and/or NHD feature.

2.1.1 WETLAND CLASSIFICATION

Wetlands identified in the field were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin *et al*, 1979). The unique wetland habitats were classified as palustrine emergent (PEM), palustrine forested (PFO), palustrine unconsolidated bottom (PUB), palustrine scrub-shrub (PSS), or other classifications for some wetlands, multiple Cowardin classifications may be present where more than one classification's vegetation is dominant (vegetation covers 30 percent or more of the substrate). Where multiple Cowardin classifications are present, the Cowardin classification of the plants that constitute the uppermost layer of vegetation having 30% or greater coverage is listed.

2.1.2 WETLAND ASSESSMENT

Each delineated wetland was assessed following the Ohio Environmental Protection Agency (OEPA) *Ohio Rapid Assessment Method for Wetlands v. 5.0* (ORAM) (Mack, 2001). Wetland assessments utilized the 10-page ORAM form, providing a final Category rating for each wetland.

2.2 STREAM ASSESSMENT

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).

2.2.1 OEPA PRIMARY HEADWATER HABITAT ASSESSMENT

Stream assessments were conducted using the methods described in the OEPA's *Methods for Assessing Habitat in Flowing Waters*: *Using OEPA's Qualitative Habitat Evaluation Index* (Rankin, 2006) and in the OEPA's *Field Methods for Evaluating Primary Headwater Streams in Ohio* (OEPA, 2020). Streams associated with watershed area less than or equal to 1.0 mi^2 (259ha), and a maximum depth of water pools equal to or less than 15.75 inches were evaluated utilizing the HHEI methodology and all other streams assessed as QHEI. Flow regime (ephemeral, intermittent, perennial) was determined by the appropriate stream assessment score per OEPA manuals (OEPA, 2020) and by AECOM's professional judgment.

Streams assessed in the Project survey area were reviewed for existing OEPA Aquatic Life Use Designations per OEPA's Water Quality Standards (OAC Chapter 3745-1). Those without an existing use designation were assigned a provisional aquatic life use designation based upon habitat assessment results (Rankin, 1989; OEPA 2020).

2.2.2 OEPA 401 WATER QUALITY CERTIFICATION FOR NATIONWIDE PERMIT ELIGIBILITY

The OEPA has designated each watershed in the state on the basis of whether it may be ineligible for coverage under Ohio EPA's 401 Water Quality Certification for Nationwide Permits. Mapping provided by OEPA illustrate the eligibility of streams in the area for a nationwide 401 permit. Three categories are identified: eligible, ineligible, and possibly eligible with additional field screening required. Impacts to streams within each watershed would then have eligibility for 401 Water Quality Certification determined by the watershed category. The three categories are defined as:

Eligible: Streams within the watershed are eligible for coverage under Ohio EPA's water quality certification for the nationwide permits if all other general and regional special terms and conditions are met.

Ineligible: Projects affecting high quality streams and undesignated streams draining directly to high quality streams, as represented in the map, must undergo an individual 401 Water Quality Certification review process.

Possibly Eligible: Additional field screening procedures are required for streams in the watershed to determine appropriate eligibility. Projects affecting undesignated streams within those HUC12 watersheds that do not directly but eventually drain into high quality waters, might be eligible for coverage under Ohio EPA's 401 Water Quality Certification for Nationwide Permits depending on the results of a field screening

assessment. The procedures for determining individual stream eligibility in this scenario are specified in Appendix D “Stream Eligibility Determination Process” of the OEPA Ohio State Water Quality Certification of the 2017 Nationwide Permit Reauthorization.

2.2.3 UPLAND DRAINAGE FEATURES

An upland drainage feature (UDF) is a non-jurisdictional drainage that does not meet the criteria of either a jurisdictional stream or a wetland. A UDF generally lacks an OWHM (USACE, 2005), and are equivalent to a swale or an erosional feature as described by the USACE: “generally shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on nearly flat slopes and typically have grass or other low-lying vegetation throughout the swale” (USACE, 2007).

A roadside ditch may also be documented as a UDF if it meets the “not potentially jurisdictional” characterization as described in the Office of Environmental Services *Roadway Ditch Characterization Flowchart* (Ohio Department of Transportation, 2014). This would include a ditch that originates entirely within the roadway right-of-way, has a seasonal flow regime, was not constructed to drain a wetland, and does not have hydrophytic vegetation extending more than an insignificant amount beyond its original configuration.

In addition, UDF’s (including swales, ditches, and other erosional features) are generally not “waters of the U.S.” except in certain circumstances, such as relocated streams.

2.3 RARE, THREATENED, AND ENDANGERED SPECIES

AECOM conducted a rare, threatened, and endangered species review and general field habitat surveys within the Project survey area. AECOM submitted requests to Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section and the United States Fish and Wildlife Service (USFWS) Ohio Ecological Services Field Office soliciting comments on the proposed Project. Responses were received on November 15, 2022 and October 21, 2022 respectively (**Appendix E**). Agency-identified species of concern and available species-specific information was reviewed to identify the various habitat types that listed species are known to inhabit.

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys as part of assessing potential impacts to rare, threatened, and endangered species. Land uses within the Project survey area were assigned a general classification based upon the principal land characteristics and vegetative cover as observed during the field surveys.

AECOM conducted a desktop assessment of the Project survey area and a quarter-mile buffer around it to identify potentially occurring winter bat hibernaculum that may be present near the Project which is located

in **Appendix F**. This assessment was conducted by reviewing data on mining activity and karst geology from the ODNR Division of Mineral Resources and United States Geological Survey websites.

3.0 RESULTS

On October 4, 2022, AECOM ecologists walked the Project survey area to conduct the wetland delineation, stream assessment and habitat survey. Within the Project survey area, AECOM delineated two wetlands and confirmed one previously delineated stream and extended one previously delineated stream. The delineated features are discussed in detail in the following sections.

3.1 WETLAND DELINEATION

3.1.1 PRELIMINARY SOILS EVALUATION

Soils in delineated wetlands were observed and documented as part of the delineation methodology. According to the USDA/NRCS Web Soil Survey, three soil series are mapped within the Project survey area (USDA NRCS 2021a and 2021b). Of these, no soil map units are identified as hydric. **Table 1** below provides a detailed overview of all soil series and soil map units present within the Project survey area. Soil map units located in the Project survey area and vicinity are shown on **Figure 2**.

TABLE 1 - SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE PROJECT SURVEY AREA

Soil Series	Map Unit Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Cincinnati	CkC2	Cincinnati silt loam, 8 to 15 percent slopes, eroded	Ridges	No	N/A
Guernsey-Westmoreland	GwC	Guernsey-Westmoreland silt loams, 8 to 15 percent slopes	Ridges	No	N/A
Westmoreland	WmD	Westmoreland silt loam, 15 to 25 percent slopes	Hills	No	N/A
	WmE	Westmoreland silt loam, 25 to 35 percent slopes	Hills	No	N/A

3.1.2 NATIONAL WETLAND INVENTORY MAP REVIEW

According to NWI data covering the Project location, the Project survey area contains no mapped NWI wetlands. The locations of NWI mapped wetlands in the Project vicinity are shown on **Figure 2**.

3.1.3 DELINEATED WETLANDS

During the field survey, AECOM identified two PEM wetlands within the Project survey area. Both wetlands were assigned ORAM Category 1 (W-JMH-001 and W-JMH-002). No Category 2 or Category 3 wetlands were identified within the Project survey area. The AECOM delineation boundaries are provided on **Figure 3**.

AECOM has given each wetland within the Project survey area a provisional determination of jurisdictional (non-isolated, i.e., WOTUS). Final jurisdictional status can only be determined by the USACE, and AECOM assessments are provisional. The locations and approximate extent of the wetlands identified within the Project survey area is shown on **Figure 3**. Details for each delineated wetland in the Project survey area are provided in **Table 2**. Completed USACE data forms and photographs of each wetland are provided in **Appendix A**.

TABLE 2 – SUMMARY OF DELINEATED WETLANDS WITHIN THE PROECT SURVEY AREA

Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
W-JMH-001	39.898752	-82.253635	No	PEM	0.005	19.0	1	TBD	TBD	TBD	TBD	TBD	TBD
W-JMH-002	39.898797	-82.253140	No	PEM	0.059	19.5	1	TBD	TBD	TBD	TBD	TBD	TBD
Total:					**0.064**							**0.000**	**0.000**

3.2 STREAM DELINEATION

During the field survey, AECOM verified and collected new data on streams (Stream 060 and Stream 061-) previously delineated as part of the Crooksville Project. Stream 060 was extended as part of the Mount Perry Project. One ephemeral stream was classified as Class I PHW, and one intermittent stream was identified as Class II PHW within the Project Survey area. No QHEI evaluations or streams identified with an existing OEPA Aquatic Life Use Designation were identified within the Project Survey Area.

AECOM has provided a provisional determination that all delineated streams within the Project survey area appear to be jurisdictional (i.e., WOTUS), based on their observed or presumed confluence with downstream waters. Final jurisdictional status can only be determined by the USACE, and AECOM assessments are provisional. A summary of the delineated features is provided in **Table 3**. Stream data forms and photographs of each delineated stream resource are provided in **Appendix B**.

3.2.1 OEPA STREAM ELIGIBILITY

OEPA stream eligibility for 401 Water Quality Certification mapping was reviewed for the delineated streams. The Project occurs across one watershed, designated by 401 WQC eligibility, as listed in **Table 4**. The watershed is listed as “possibly eligible”. OEPA stream eligibility mapping for the Project vicinity, is provided on **Figure 4**.

3.3 FEMA 100 YEAR FLOODPLAINS

Mapped FEMA designated 100-year floodplains and floodways are displayed on **Figure 2**. No regulated FEMA 100-year floodplains and/or floodways are located within the Project area.

TABLE 3 - SUMMARY OF DELINEATED STREAMS WITHIN THE PROJECT SURVEY AREA

Stream ID	Location		Stream Type	Stream Name	Delineated Length (feet)	Bankfull Width (feet)	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility	Stream Crossing	Proposed Impacts	
	Latitude	Longitude						Method	Score	Classification / Rating / OAC Designation			Fill Type	Length (LF)
Stream060	39.898773	-82.253893	Intermittent	UNT to Jonathon Creek	405	4	3	HHEI	49	Class 2 PHW	Possibly Eligible	TBD	TBD	0
Stream 061	39.898859	-82.254292	Ephemeral	UNT to Jonathon Creek	164	3	1	HHEI	23	Class 1 PHW	Possibly Eligible	TBD	TBD	0
Total:					**569**									**0**

**Structure placement and aquatic crossing details have not been established at this time*

TABLE 4 - SUMMARY OF WATERSHED 401 WQC ELIGIBILITY WITHIN THE PROJECT SURVEY AREA

HUC-12	Watershed	401 WQC Eligibility	Number of Stream Assessments
050400040407	Painter Creek-Jonathon Creek	Possibly Eligible	2
		Total	**2**

3.4 PONDS

No ponds were observed within the Project survey area.

3.5 UPLAND DRAINAGE FEAUTURES WITHIN THE PROJECT SURVEY AREA

One upland drainage feature (UDF-JMH-001) was observed within the Project survey area (**Figure 3**). Photos of this feature can be found in **Appendix C.**

3.6 VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA

AECOM ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys. A variety of woody and herbaceous lands, as described in **Table 5**, below, are present within the Project survey area, including developed open space and forested areas. Habitat descriptions applicable to the Project are provided below. Vegetative communities are depicted visually on aerial photography in **Figure 5**.

TABLE 5- VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA

Vegetative Community	Description	Approximate Acreage Within the Project Survey Area	Approximate Percentage Within the Project Survey Area
Pasture/Hay-Fields	Cattle and/or horse pasture, and hay-fields, dominated by seasonally mowed and grazed areas of grasses and forbs.	1.38	31.4%
Woodlands (Successional mixed hardwood forest)	Woodlands (floodplain, upland, successional-mixed, etc) are present along the Project survey area. Woody species dominating these areas included red oak (*Quercus rubra*) and sugar maple (*Acer saccharum*). The dominant shrub-layer species included red oak, sugar maple, and multiflora rose (*Rosa multiflora*).	1.17	26.3%
Scrub-Shrub	Scrub-shrub habitats represent the successional stage between old field and second growth forest, and often emerge in recently harvested forests responding to the lightness of the remaining canopy. Dominant species consist of herbaceous communities similar to that of old field habitat with 30% or greater coverage of woody species that are not trees (including sapling trees generally <3" DBH and <20' in height).	1.12	25.5%
Wetlands/Streams	Streams and wetlands were observed both within and beyond the survey area for the Project.	0.45	10.2%
Urban	Urban areas are areas developed with residential and commercial land uses, including roads, buildings and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	0.29	6.6%
Totals:		**4.41**	**100%**

3.7 RARE, THREATENED AND ENDANGERED SPECIES AGENCY COORDINATION

Protected Species Agency Consultation –

AECOM conducted a rare, threatened, and endangered species review for areas within the Project survey area. A summary of the agency coordination is provided below. Correspondence letters from the USFWS and ODNR for Mount Perry Switch Install Project are included as **Appendix E**. **Table 6** provides a list of species of concern identified by the agencies as potentially occurring within the vicinity of the Project. Photographs of the habitat within the Project area is provided as **Appendix C**.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts
Mammals							
Indiana Bat (*Myotis sodalis*)	Endangered	Endangered	Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead, if there are adequately sized patches of loosely adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low-density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey.	<u>Summer habitat</u> **Yes** - Within the Project survey area, areas of young successional forest were identified which appear to be potentially suitable summer roosting and foraging habitat. <u>Hibernaculum(a)</u> **No** –Several surface mines are located within 0.25 miles of Project area, however they are unsuitable hibernaculum. USFWS did not identify known hibernacula within 5-miles of the Project. Furthermore, field evaluations did not identify any potential hibernaculum(a) within the Project area. See **Appendix E**.	<u>Summer Tree Clearing</u> April 1 – September 30	If suitable habitat occurs within the Project survey Area, the USFWS and ODNR DOW recommends seasonal tree cutting to occur between October 1 and March 31, if tree clearing cannot be avoided. If seasonal tree clearing cannot be completed, USFWS/DOW recommends a mist net or acoustic survey to be conducted between June 1 and August 15, prior to any cutting. If no tree removal is proposed, the Project is not likely to impact this species. In accordance with 2022 Ohio ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing (2022 Joint Guidance) (copy of guidance provided within Appendix D), a desktop assessment for features potentially suitable as bat hibernacula was conducted and portal searches within 0.25 miles of the Project area with several surface mine features identified. However, with no tunneling characteristics in these strip mines, they do not provide suitable hibernaculum. (**See Appendix E**).	<u>Summer habitat</u> Potential summer roosting habitat is present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended. <u>Hibernaculum(a)</u> No, potential hibernaculum(a) is not present within the Project area
Northern Long-eared Bat (*Myotis septentrionalis*)	Threatened	Threatened	Suitable summer habitat for 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 forest 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 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 structure should also be considered potential summer habitat. In the winter, northern long-eared bats hibernate in caves and abandoned mines.	<u>Summer habitat</u> **Yes** - Within the Project survey area, areas of young successional forest were identified which appear to be potentially suitable summer roosting and foraging habitat. ODNR commented known records for species within Project area. <u>Hibernaculum(a)</u> **No** –Several surface mines are located within 0.25 miles of Project area, however they are unsuitable hibernaculum. USFWS did not identify known hibernacula within 5-miles of the Project. Furthermore, field evaluations did not identify any potential hibernaculum(a) within the Project area. See **Appendix E**.	<u>Summer Tree Clearing</u> April 1 – September 30	If suitable habitat occurs within the Project survey Area, the USFWS and ODNR DOW recommends seasonal tree cutting to occur between October 1 and March 31, if tree clearing cannot be avoided. If summer tree cutting is required, additional summer surveys would not constitute presence/absence due to know presence of this species. Additional consultation with the ODNR for permission for limited summer tree cutting is recommended and roosts/emergent surveys may be required. If no tree removal is proposed, the Project is not likely to impact this species. In accordance with 2022 Ohio ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing (2022 Joint Guidance) (copy of guidance provided within Appendix D), a desktop assessment for features potentially suitable as bat hibernacula was conducted and portal searches within 0.25 miles of the Project area with several surface mine features identified. However, with no tunneling characteristics in these strip mines, they do not provide suitable hibernaculum. (**See Appendix E**).	<u>Summer habitat</u> Potential summer roosting habitat is present within the Project area and seasonal tree clearing between October 1 and March 31 is recommended. If summer tree cutting is required, additional summer surveys would not constitute presence/absence due to know presence of this species. Additional consultation with the ODNR for permission for limited summer tree cutting is recommended and roosts/emergent surveys may be required. <u>Hibernaculum(a)</u> No potential hibernacula are present within the Project area and no further coordination is warranted.

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts
Little brown bat (*Myotis lucifugus*)	Endangered	NA	The little brown bat shares similar habitat requirements as other Myotis species including the Indiana bat and northern long-eared bat. This species may roost in trees, attics, or other man-made structures during the summer season. In winter, they may hibernate in caves, mines, or man-made structures with appropriate temperature regimes.	Summer habitat **Yes** - Within the Project survey area, areas of young successional forest were identified which appear to be potentially suitable summer roosting and foraging habitat. . Hibernaculum(a) **No** –Several surface mines are located within 0.25 miles of Project area, however they are unsuitable hibernaculum. USFWS did not identify known hibernacula within 5-miles of the Project. Furthermore, field evaluations did not identify any potential hibernaculum(a) within the Project area. See **Appendix E**.	Summer Tree Clearing April 1 – September 30	If suitable habitat occurs within the Project survey Area, the USFWS and ODNR DOW recommends seasonal tree cutting to occur between October 1 and March 31, if tree clearing cannot be avoided. If seasonal tree clearing cannot be completed, USFWS/DOW recommends a mist net or acoustic survey to be conducted between June 1 and August 15, prior to any cutting. If no tree removal is proposed, the Project is not likely to impact this species. In accordance with 2022 Ohio ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing (2022 Joint Guidance) (copy of guidance provided within Appendix D), a desktop assessment for features potentially suitable as bat hibernacula was conducted and portal searches within 0.25 miles of the Project area with several surface mine features identified. However, with no tunneling characteristics in these strip mines, they do not provide suitable hibernaculum. (**See Appendix E**).	Summer habitat Potential summer roosting habitat is present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended. Hibernaculum(a) No, potential hibernaculum(a) is not present within the Project area

TABLE 6
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA

Common Name (Scientific Name)	State Status	Federal Status	Habitat Description	Potential Habitat Observed in the Project Survey Area	Avoidance Dates	Agency Comments	Potential Impacts
Tricolored bat (*Perimyotis subflavus*)	Endangered	NA	The tricolored bat primarily roosts in trees during the summer months. During winter, this species hibernates in humid mines, caves, and occasionally man-made structures.	<u>Summer habitat</u> **Yes** - Within the Project survey area, areas of young successional forest were identified which appear to be potentially suitable summer roosting and foraging habitat. <u>Hibernaculum(a)</u> **No** –Several surface mines are located within 0.25 miles of Project area, however they are unsuitable hibernaculum. USFWS did not identify known hibernacula within 5-miles of the Project. Furthermore, field evaluations did not identify any potential hibernaculum(a) within the Project area. See **Appendix E**.	<u>Summer Tree Clearing</u> April 1 – September 30	If suitable habitat occurs within the Project survey Area, the USFWS and ODNR DOW recommends seasonal tree cutting to occur between October 1 and March 31, if tree clearing cannot be avoided. If seasonal tree clearing cannot be completed, USFWS/DOW recommends a mist net or acoustic survey to be conducted between June 1 and August 15, prior to any cutting. If no tree removal is proposed, the Project is not likely to impact this species. In accordance with 2022 Ohio ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing (2022 Joint Guidance) (copy of guidance provided within Appendix D), a desktop assessment for features potentially suitable as bat hibernacula was conducted and portal searches within 0.25 miles of the Project area with several surface mine features identified. However, with no tunneling characteristics in these strip mines, they do not provide suitable hibernaculum. (**See Appendix E**).	<u>Summer habitat</u> Potential summer roosting habitat is present within the Project area and seasonal tree clearing between October 1 and March 31 is recommended. If seasonal tree clearing cannot be completed, additional coordination including roost/emergence surveys, mist net surveys, and/or other presence absence surveys may be warranted to be completed between June 1 and August 15. <u>Hibernaculum(a)</u> No potential hibernaculum(a) is present within the Project area and no further coordination is warranted.
Fish							
Lake Chubsucker (*Erimyzon sucetta*)	Threatened	None	Habitats include shallow riffles and shoals of major rivers and tributaries in gravel or sand substrates.	No potentially suitable habitat was observed for this species.	N/A	DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to this species.	No potentially suitable habitat was observed for this species, and no in-water work is proposed.
Birds							
Northern harrier (*Circus hudsonius*)	Endangered	None	This species hunts over grasslands and nests can be found in large marshes and grasslands.	No potentially suitable habitat was observed for this species	N/A	ODNR stated that if this type of habitat will be impacted, construction should be avoided in the habitat during the species' nesting period of April 15 to July 31.	No potentially suitable habitat was observed within the Project survey area (**Figure 5**).

ODNR Coordination –

Coordination with the ODNR was initiated during the planning stages of the Project to obtain records of protected species located in the vicinity of the Project. On November 15, 2022, the ODNR Office of Real Estate Environmental Review Section replied to a request for records of protected species within an extended area around the Project site. The Ohio Natural Heritage Database (ONHD) review found no records of state-protected species or state protected resource areas at or within a one-mile radius of the Project survey area.

The ODNR Division of Wildlife (DOW) recommended that impacts to streams, wetlands, and other water resources be avoided and minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation. In addition, the DOW listed six state-listed species within range of the Project survey area, including:

- Four mammals: Indiana bat, northern long-eared bat, little brown bat and tricolored bat;
- One fish: lake chubsucker, and
- One bird: northern harrier.

Potentially suitable summer habitat for the four bats were identified in the Project survey area. Therefore, the ODNR recommends tree clearing activities to occur between October 1 and March 31. If trees must be cut during the summer months, the ODNR recommends that a mist net survey could be completed for Indiana bat, northern long-eared bat, little brown bat, and the tricolored bat between June 1 and August 15 to confirm presence/absence. Regarding potential hibernaculum(a) within the Project area, a desktop hibernaculum(a) review was completed in accordance with *2022 Ohio ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing* (2022 Joint Guidance). Several surface mine features were identified within 0.25 miles of the Project survey area and were not categorized as potential hibernacula due to lack of tunneling characteristics. No known karst features, or caves were identified within 0.25 miles of the Project survey area during the desktop analysis and no caves or mines were identified during the ecological survey.

Due to the absence of in-stream work proposed, the Project is not likely to impact the lake chubsucker.

The ODNR noted that the Project is within the range of the northern harrier; however, AECOM ecologist and approved avian specialist concluded an absence of these species' habitats within the Project survey area. Open grasslands and wet meadow marshes of at minimum of approximately 2 acres are considered as nesting habitat for the Northern Harrier. The eastern edge of the Project survey area consists of pasture/hay-field but is situated immediately adjacent to a large, forested area to the west, just past the Crooksville ROW.

Furthermore, the field is bordered by highway 668 to the north and rural residential land to the east. Therefore, an absence of suitable nesting habitat for this avian species was identified within the Project survey area and the Project is not likely to impact the northern harrier.

USFWS Coordination –

Coordination with the USFWS was also initiated during the planning stages of the Project to obtain technical assistance regarding federally listed species that may occur within the Project area. The USFWS responded on October 21, 2022, noting that given the project details, they do not anticipate adverse effects to federally endangered, threatened or proposed species or proposed or designated critical habitat.

4.0 SUMMARY

The ecological survey of the Project survey area identified a total of two wetlands and two streams. Both wetlands within the Project survey area included two Category 1 PEM wetlands boundaries of which are provided on **Figure 3**. All wetlands have been provisionally classified as non-isolated wetlands. The one ephemeral stream was identified as a Class 1 PHW and the one intermittent stream was identified as a Class 2 PHW within the Project survey area. AECOM has preliminarily determined that the assessed streams within the Project survey area appear to be jurisdictional (i.e., WOTUS). The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey area provided in **Figure 3**. Areas that fall outside of the Project survey area were not evaluated in the field and are not included in the reporting of this survey.

The four bat species identified within range of the Project survey area display summer roosting habitat and no hibernacula was identified within 0.25 miles of the Project survey area. Due to presence of summer roosting habitat for these bat species, it was recommended by the ODNR to complete seasonal tree clearing activities between October 1st and March 31st. If seasonal tree clearing cannot be completed, mist net surveys could be completed for Indiana bat, little brown bat, and/or tricolored bat between April 1 to September 30.

The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey area provided in Figure 3. Areas that fall outside of the Project survey area were not evaluated in the field and are not included in the reporting of this survey.

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

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

5.0 REFERENCES

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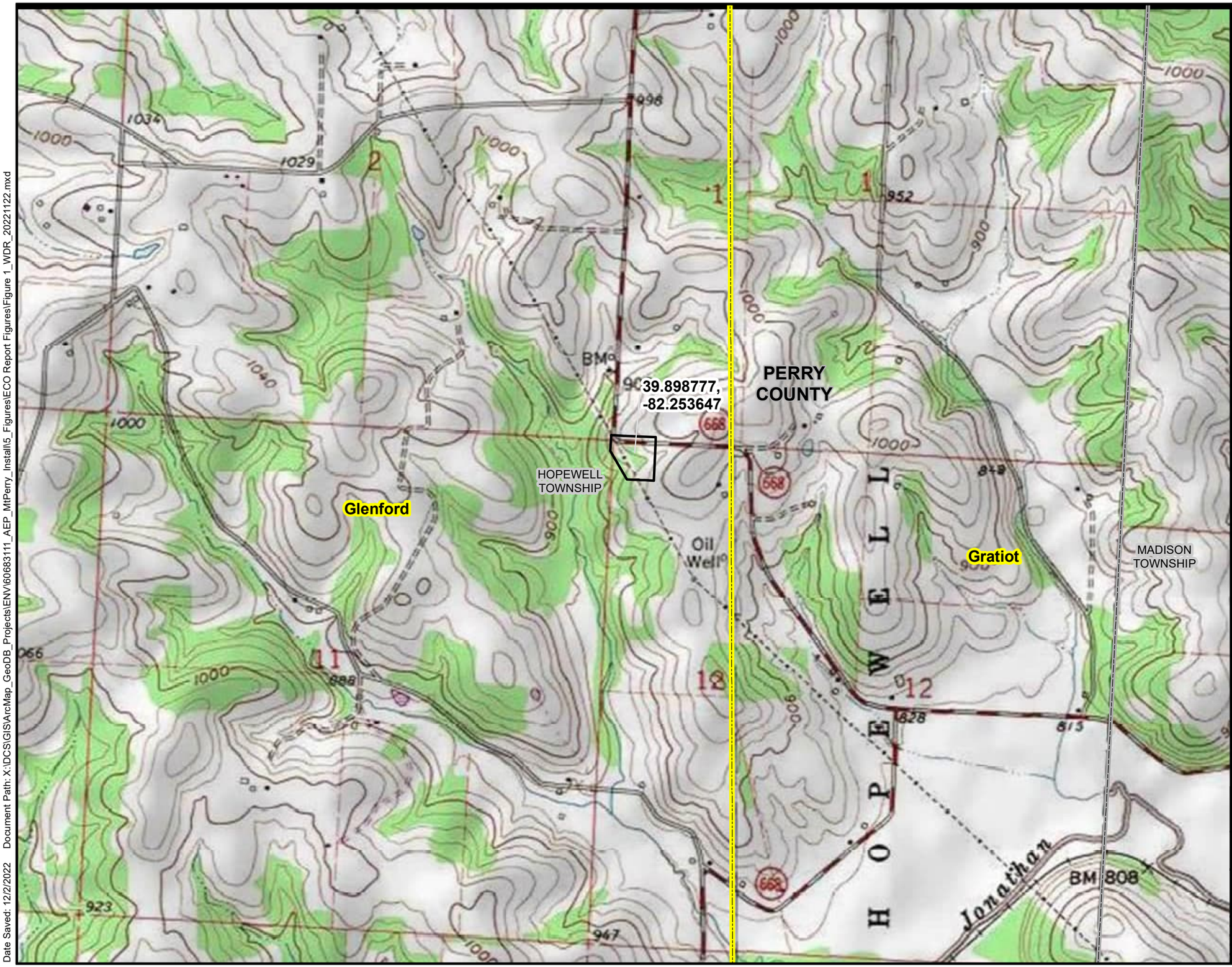
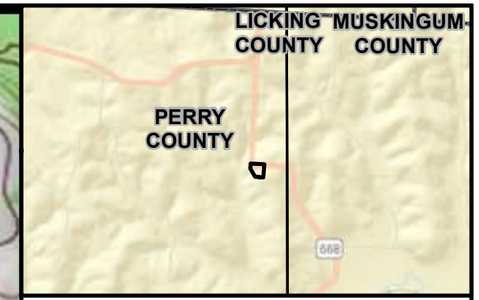




Legend

- Project Study Area
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary

N

0 1,000 2,000

Feet

Mount Perry Switch Install and
Crooksville- N. Newark Line Work
TR 380 Tie Project

FIGURE 1
PROJECT OVERVIEW

DATE: 12/2/2022	1 INCH = 1,000 FEET
CREATED BY: MC	CHECKED BY: NB
JOB NO. 60690752	AECOM

Date Saved: 12/2/2022 Document Path: X:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60683111_AEP_MtPerry_Install\5_Figures\ECO Report Figures\Figure 1_WDR_20221122.mxd

PERRY COUNTY

GwC

GwC

UDF-JMH-001

W-JMH-002

Stream 061

W-JMH-001

Stream 060

WmE

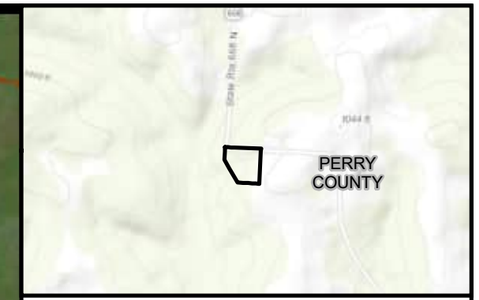
MeC

GwC

CkC2

R4SBC

WmD



Legend

- Project Survey Area
- Crooksville-North Newark Survey Area
- Upland Data Point
- Wetland Data Point
- Delineated Ephermal Stream
- Delineated Intermittent Stream
- Upland Drainage
- NHD Stream (USGS)
- Delineated PEM Wetland
- NWI Wetland (USFWS)
- SSURGO Soil Map Unit (NRCS)

Soil Map Unit Descriptions

CkC2 - Cincinnati silt loam,
8 to 15 percent slopes, eroded

GwC - Guernsey-Westmoreland silt loams,
8 to 15 percent slopes

WmD - Westmoreland silt loam,
15 to 25 percent slopes

WmE - Westmoreland silt loam,
25 to 35 percent slopes

N

0 50 100 200 Feet

Mount Perry Switch Install and
Crooksville- N. Newark Line Work
TR 380 Tie Project

FIGURE 2
SOIL MAP AND
NATIONAL WETLAND INVENTORY MAP

DATE: 12/2/2022	1 INCH = 100 FEET
CREATED BY: MC	CHECKED BY: NB
JOB NO. 60690752	AECOM

Date Saved: 12/2/2022 Document Path: X:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60683111_AEP_MtPerry_Install\5_Figures\ECO Report Figures\Figure 2_WDR_20221128.mxd

PERRY COUNTY

UDF-JMH-001

W-JMH-002

W-JMH-001

Stream 061

Stream 060

R4SBC

Legend

- Upland Data Point
- Wetland Data Point
- Project Survey Area
- Crooksville-North Newark Survey Area
- Delineated Ephermal Stream
- Delineated Intermittent Stream
- Upland Drainage
- NHD Stream (USGS)
- Delineated PEM Wetland
- NWI Wetland (USFWS)
- Contour (5-ft)

N

0 50 100 200 Feet

Mount Perry Switch Install and
Crooksville- N. Newark Line Work
TR 380 Tie Project

FIGURE 3
WETLAND DELINEATION AND
STREAM ASSESSMENT MAP

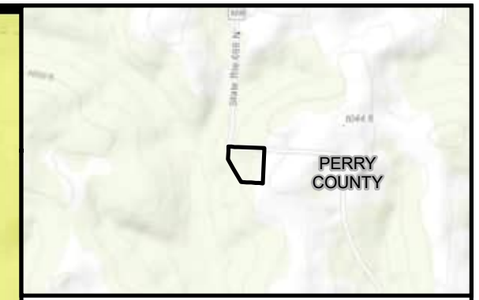
DATE: 12/2/2022	1 INCH = 100 FEET
CREATED BY: MC	CHECKED BY: NB
JOB NO. 60690752	AECOM

Date Saved: 12/2/2022 Document Path: X:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60683111_AEP_MtPerry_Install\5_Figures\ECO Report Figures\Figure 3_WDR_20221129.mxd

Ohio EPA 401
Ineligible
050400040401
Valley Run

Ohio EPA 401
Possibly Eligible
050400040407
Painter Creek-Jonathon Creek

Jonathan Creek



Legend

- Project Survey Area
- NHD Stream (USGS)

OEPA Stream Eligibility

- Ineligible
- Possibly Eligible

N

0 500 1,000 2,000

Feet

Mount Perry Switch Install and
Crooksville- N. Newark Line Work
TR 380 Tie Project

FIGURE 4
STREAM ELIGIBILITY MAP

DATE: 12/5/2022	1 INCH = 1,000 FEET
CREATED BY: MC	CHECKED BY: NB
JOB NO. 60690752	AECOM

Date Saved: 12/5/2022 Document Path: X:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60683111_AEP_MtPerry_Install\5_Figures\ECO Report Figures\Figure 4_WDR_20221205_resave.mxd

Legend

- Photo Location
- Project Survey Area
- Crooksville-North Newark Survey Area

Vegetative Community Type

- Woodland
- Pasture/Hay-Field
- Scrub-Shrub
- Stream/Wetland
- Urban

N

0 50 100 200 Feet

Mount Perry Switch Install and
Crooksville- N. Newark Line Work
TR 380 Tie Project

FIGURE 5
VEGETATIVE COMMUNITIES
ASSESSMENT MAP

DATE: 12/5/2022	1 INCH = 100 FEET
CREATED BY: MC	CHECKED BY: NB
JOB NO. 60690752	AECOM

Date Saved: 12/2/2022 Document Path: X:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60683111_AEP_MtPerry_Install\5_Figures\ECO Report Figures\Figure 5_WDR_20221201.mxd

APPENDIX A

U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION DATA FORMS

OEPA WETLAND ORAM FORMS

DELINEATED FEATURES PHOTOGRAPHS (WETLANDS)

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Mt Perry | City/County: Perry | Sampling Date: 04-Oct-22

Applicant/Owner: AEP | State: OH | Sampling Point: W-JMH-001

Investigator(s): JMH | Section, Township, Range: S ____ T ____ R ____

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 39.898752 | Long.: -82.253635 | Datum: NAD83

Soil Map Unit Name: WmE | NWI classification: N?A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ◉ No ○	Is the Sampled Area within a Wetland? Yes ◉ No ○
Hydric Soil Present?	Yes ◉ No ○	
Wetland Hydrology Present?	Yes ◉ No ○	

Remarks:
This sample point is located on a terrace above Stream 60. The sample point is representative of a PEM wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'r)			
1. Rosa multiflora	5	☑ 100.0%	FACU
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	5	= Total Cover	
Herb Stratum (Plot size: 5'r)			
1. Microstegium vimineum	50	☑ 50.0%	FAC
2. Persicaria sagittata	20	☑ 20.0%	OBL
3. Dichanthelium clandestinum	15	☐ 15.0%	FACW
4. Impatiens capensis	10	☐ 10.0%	FACW
5. Symphyotrichum novae-angliae	5	☐ 5.0%	FACW
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	30	x 2 =	60
FAC species	50	x 3 =	150
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	105 (A)		250 (B)

Prevalence Index = B/A = 2.381

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is > 50%
- ☑ 3 - Prevalence Index is ≤3.0 [1]
- ☐ 4 - Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Hydrophytic Vegetation Present? Yes ◉ No ○

Remarks: (Include photo numbers here or on a separate sheet.)
A preponderance of hydrophytic vegetation is present.

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

SOIL

Sampling Point: **W-JMH-001**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	2/2	100						Silt Loam	
4-20	10YR	5/2	90	7.5YR	5/6	10	C	M	Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks:

The soil profile meets the criteria for having a depleted matrix

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☑ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◉ No ○ Depth (inches): 1

Water Table Present? Yes ○ No ◉ Depth (inches):

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 3

Wetland Hydrology Present? **Yes** ◉ **No** ○

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

Remarks:

Multiple indicators of wetland hydrology were present during the time of investigation.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Mt Perry | City/County: Perry | Sampling Date: 04-Oct-22

Applicant/Owner: AEP | State: OH | Sampling Point: W-JMH-001-UPL

Investigator(s): JMH | Section, Township, Range: S ____ T ____ R ____

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): none

Slope: 10.0% / 5.7 ° | Lat.: 39.898779 | Long.: -82.253675 | Datum: NAD83

Soil Map Unit Name: WmE | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	Is the Sampled Area within a Wetland? Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
This sample point is located on a hillside within a small forested area. The sample point is representative of the upland areas that surround W-JMH-001.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. Quercus rubra	30	☑ 60.0%	FACU
2. Acer saccharum	20	☑ 40.0%	FACU
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	50	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'r)			
1. Rosa multiflora	10	☑ 40.0%	FACU
2. Quercus rubra	10	☑ 40.0%	FACU
3. Acer saccharum	5	☑ 20.0%	FACU
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	25	= Total Cover	
Herb Stratum (Plot size: 5'r)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	0	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	75 (A)		300 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is > 50%
- ☐ 3 - Prevalence Index is ≤3.0 [1]
- ☐ 4 - Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

A preponderance of hydrophytic vegetation is not present.

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

SOIL

Sampling Point: **W-JMH-001-UPL**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR	4/3	100						Silt Loam	
2-20	10YR	5/4	100						Silt Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

The soil profile does not meet the criteria for any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? **Yes** ○ **No** ◉

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

Remarks:

No primary and/or secondary wetland hydrology indicators were present at the time of sampling.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Mt Perry | City/County: Perry | Sampling Date: 04-Oct-22

Applicant/Owner: AEP | State: OH | Sampling Point: W-JMH-002

Investigator(s): JMH | Section, Township, Range: S ____ T ____ R ____

Landform (hillslope, terrace, etc.): Terrace | Local relief (concave, convex, none): concave

Slope: 0.0% / 0.0 ° | Lat.: 39.898797 | Long.: -82.25314 | Datum: NAD83

Soil Map Unit Name: CkC2 | NWI classification: N?A

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

Are Vegetation [ ], Soil [ ], or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

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

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

Hydrophytic Vegetation Present?	Yes (●) No ( )	Is the Sampled Area within a Wetland? Yes (●) No ( )
Hydric Soil Present?	Yes (●) No ( )	
Wetland Hydrology Present?	Yes (●) No ( )	

Remarks:
This sample point is located along the edge of a hay field. The sample point is representative of a PEM wetland.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'r)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
3.	0	[ ] 0.0%	
4.	0	[ ] 0.0%	
5.	0	[ ] 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5'r)			
1. Typha angustifolia	20	[✓] 20.0%	OBL
2. Impatiens capensis	20	[✓] 20.0%	FACW
3. Juncus effusus	20	[✓] 20.0%	OBL
4. Persicaria sagittata	15	[ ] 15.0%	OBL
5. Echinochloa crusgalli	15	[ ] 15.0%	FACU
6. Solidago canadensis	10	[ ] 10.0%	FACU
7.	0	[ ] 0.0%	
8.	0	[ ] 0.0%	
9.	0	[ ] 0.0%	
10.	0	[ ] 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	[ ] 0.0%	
2.	0	[ ] 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	55	x 1 =	55
FACW species	20	x 2 =	40
FAC species	0	x 3 =	0
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	100 (A)		195 (B)

Prevalence Index = B/A = 1.950

Hydrophytic Vegetation Indicators:

- [✓] 1 - Rapid Test for Hydrophytic Vegetation
- [✓] 2 - Dominance Test is > 50%
- [✓] 3 - Prevalence Index is ≤3.0 [1]
- [ ] 4 - Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation [1] (Explain)

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

Hydrophytic Vegetation Present? Yes (●) No ( )

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

A preponderance of hydrophytic vegetation is present.

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

SOIL

Sampling Point: **W-JMH-002**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR	4/2	100						Silt Loam	
3-20	10YR	5/1	90	7.5YR	5/8	10	C	M	Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ◉ **No** ○

Remarks:

The soil profile meets the criteria for having a depleted matrix

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☑ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? **Yes** ◉ **No** ○

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

Remarks:

Multiple indicators of wetland hydrology were present during the time of investigation.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Mt Perry | City/County: Perry | Sampling Date: 04-Oct-22

Applicant/Owner: AEP | State: OH | Sampling Point: W-JMH-002-UPL

Investigator(s): JMH | Section, Township, Range: S ____ T ____ R ____

Landform (hillslope, terrace, etc.): Hillside | Local relief (concave, convex, none): none

Slope: 2.0% / 1.1 ° | Lat.: 39.898779 | Long.: -82.253675 | Datum: NAD83

Soil Map Unit Name: WmE | NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present?	Yes ○ No ◉	Is the Sampled Area within a Wetland? Yes ○ No ◉
Hydric Soil Present?	Yes ○ No ◉	
Wetland Hydrology Present?	Yes ○ No ◉	

Remarks:
This sample point is located on a hillside within a hay field. The sample point is representative of the upland areas that surround W-JMH-002.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30'r)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1.		☐ 0.0%	
2.		☐ 0.0%	
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'r)			
1.	0	☐ 0.0%	
2.		☐ 0.0%	
3.		☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	0	= Total Cover	
Herb Stratum (Plot size: 5'r)			
1. Dactylis glomerata	50	☑ 50.0%	FACU
2. Phleum pratense	25	☑ 25.0%	FACU
3. Trifolium pratense	15	☐ 15.0%	FACU
4. Plantago lanceolata	5	☐ 5.0%	FACU
5. Plantago major	5	☐ 5.0%	FAC
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30'r)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	100 (A)		395 (B)

Prevalence Index = B/A = 3.950

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is > 50%
- ☐ 3 - Prevalence Index is ≤3.0 [1]
- ☐ 4 - Morphological Adaptations [1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation [1] (Explain)

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

Hydrophytic Vegetation Present? Yes ○ No ◉

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

A preponderance of hydrophytic vegetation is not present.

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

SOIL

Sampling Point: **W-JMH-002-UPL**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR	4/3	100						Silt Loam	
5-20	10YR	5/4	100						Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ○ **No** ◉

Remarks:

The soil profile does not meet the criteria for any hydric soil indicators.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? **Yes** ○ **No** ◉

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

Remarks:

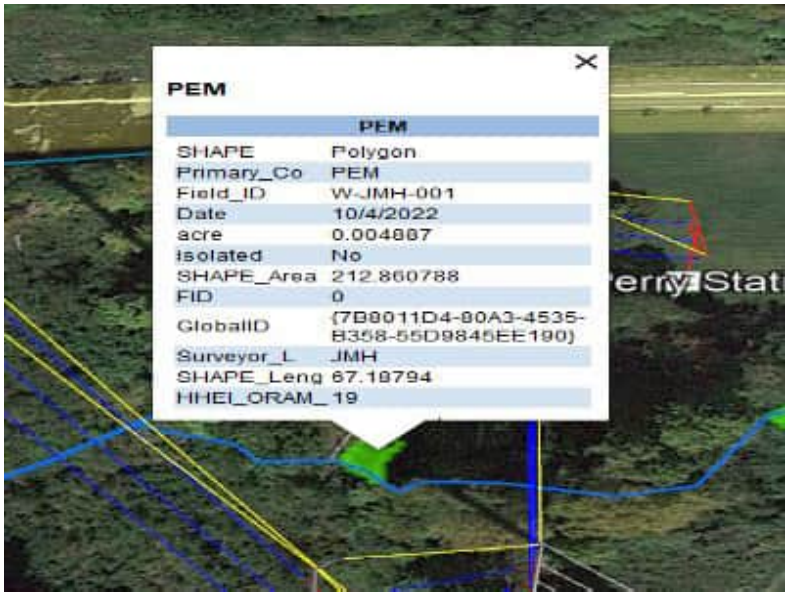
No primary and/or secondary wetland hydrology indicators were present at the time of sampling.

Background Information

Name:	**Josh Holmes**
Date:	**10/4/2022**
Affiliation:	**AECOM**
Address:	**707 Grant Street, 5th Floor Pittsburgh, Pa**
Phone Number:	**724-882-6958**
e-mail address:	joshua.holmes@aecom.com
Name of Wetland:	**W-JMH-001**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depression**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report.

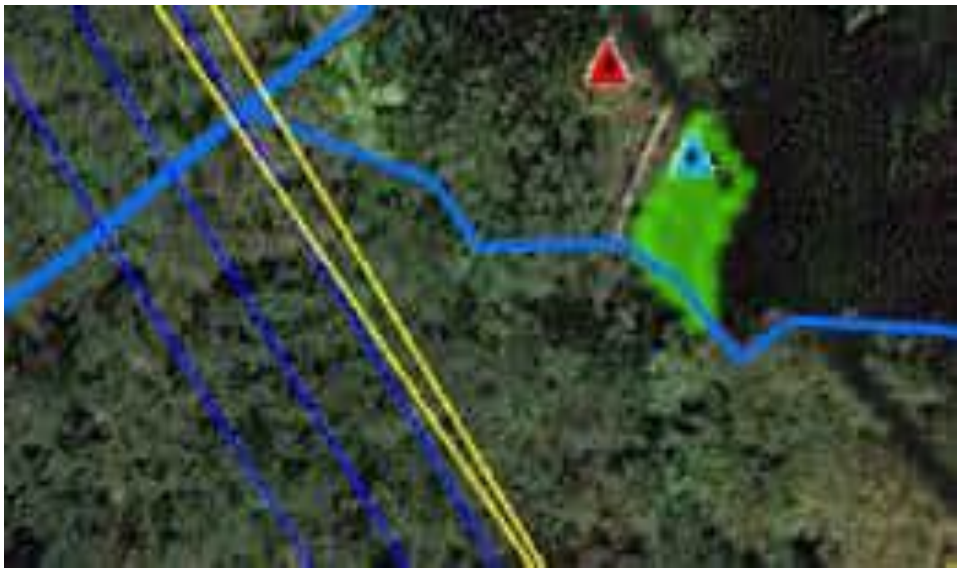


Lat/Long or UTM Coordinate:	**39.898737, -82.253641**
USGS Quad Name:	**Glenford**
County:	**Perry County**
Township:	**Hopewell Twp**
Section and Subsection:	**S 12 T17 N R 16 W**
Hydrologic Unit Code:	**50400040407**
Site Visit:	**10/4/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-JMH-001		
Wetland Size (delineated acres):	0.01	Wetland Size (Estimated total acres):	0.01

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N



Comments, Narrative Discussion, Justification of Category Changes:

Small wetland abutting a stream. Adjacent to an existing powerline ROW.

Final score:	19	Category:	1

Wetland ID:	W-JMH-001

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Wetland ID:	W-JMH-001

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	***NO** Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	***NO** Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	***NO** Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	***NO** Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	***NO** Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	***NO** Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	***NO** Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age	YES	***NO**

	by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	Wetland is a Category 3 wetland. Go to Question 8b	Go to Question 8b

Wetland ID:	W-JMH-001

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	***NO** Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	***NO** Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	***NO** Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	***NO** Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	***NO** Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	***NO** Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	***NO** Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	***NO** Complete Quantitative Rating

Wetland ID:	W-JMH-001

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-JMH-001

Site:	Mt Perry Switch	Rater(s):	JMH, LMP	Date:	10/4/2022

Field ID:

W-JMH-001

Delineated acres:	0.01
Total acres:	0.01

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

3.0 (max 14 pts.) | 3.0 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

9.0 (max 30 pts.) | 12.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [ ] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [x] Seasonally inundated (2)
- [ ] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

8.0 (max 20 pts.) | 20.0 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [x] None or none apparent (4)
- [ ] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [x] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [ ] nutrient enrichment

20.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-JMH-001

Site:	Mt Perry Switch	Rater(s):	JMH, LMP	Date:	10/4/2022

Field ID:

W-JMH-001

20.0 subtotal this page

0.0 max 10 pts. | **20.0** subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-1.0 max 20pts. | **19.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

0	Aquatic bed
1	Emergent
0	Shrub
0	Forest
0	Mudflats
0	Open water
0	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

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

6c. Coverage of invasive plants. Refer

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

19.0 TOTAL (Max 100 pts)

1 Category

Wetland ID:	W-JMH-001

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**0**		
	Metric 2. Buffers and surrounding land use	**3**		
	Metric 3. Hydrology	**9**		
	Metric 4. Habitat	**8**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**-1**		
	TOTAL SCORE	**19**		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	W-JMH-001

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	***Category 1**	Category 2	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	**Josh Holmes**
Date:	**10/4/2022**
Affiliation:	**AECOM**
Address:	**707 Grant Street, 5th Floor Pittsburgh, Pa**
Phone Number:	**724-882-6958**
e-mail address:	joshua.holmes@aecom.com
Name of Wetland:	**W-JMH-002**
Vegetation Communit(ies):	**PEM**
HGM Class(es):	**Depression**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

See Figures 1, 2, and 3 of Wetland Delineation and Stream Assessment Report

Lat/Long or UTM Coordinate:	**39.898737, -82.253641**
USGS Quad Name:	**Glenford**
County:	**Perry County**
Township:	**Hopewell Twp**
Section and Subsection:	**S 12 T17 N R 16 W**
Hydrologic Unit Code:	**50400040407**
Site Visit:	**10/4/2022**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**N/A**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-JMH-002		
Wetland Size (delineated acres):	0.06	Wetland Size (Estimated total acres):	0.06

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

N

Comments, Narrative Discussion, Justification of Category Changes:

Small wetland abutting a stream. Adjacent to an existing powerline ROW and active agriculture activites.

Final score:	19.5	Category:	1

Wetland ID:	W-JMH-002

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	X	
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.	X	

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Wetland ID:	W-JMH-002

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature and by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

#	Question	Circle one	
1	**Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	***NO** Go to Question 2
2	**Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	***NO** Go to Question 3
3	**Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	***NO** Go to Question 4
4	**Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	***NO** Go to Question 5
5	**Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis* , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	***NO** Go to Question 6
6	**Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	***NO** Go to Question 7
7	**Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	***NO** Go to Question 8a
8a	**"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age	YES	***NO**

	by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	Wetland is a Category 3 wetland. Go to Question 8b	Go to Question 8b

Wetland ID:	W-JMH-002

8b	**Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	***NO** Go to Question 9a
9a	**Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	***NO** Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	***NO** Go to Question 9c
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	***NO** Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	***NO** Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	***NO** Go to Question 10
10	**Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	***NO** Go to Question 11
11	**Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	***NO** Complete Quantitative Rating

Wetland ID:	W-JMH-002

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex sartwellii*
Ranunculus ficaria	*Eleocharis rostellata*	*Decodon verticillatus*	*Quercus palustris*	*Gentiana andrewsii*
Rhamnus frangula	*Eriophorum viridicarinatum*	*Eriophorum virginicum*		*Helianthus grosseserratus*
Typha angustifolia	*Gentianopsis spp.*	*Larix laricina*		*Liatris spicata*
Typha xglauca	*Lobelia kalmii*	*Nemopanthus mucronatus*		*Lysimachia quadriflora*
	Parnassia glauca	*Schechzeria palustris*		*Lythrum alatum*
	Potentilla fruticosa	*Sphagnum spp.*		*Pycnanthemum virginianum*
	Rhamnus alnifolia	*Vaccinium macrocarpon*		*Silphium terebinthinaceum*
	Rhynchospora capillacea	*Vaccinium corymbosum*		*Sorghastrum nutans*
	Salix candida	*Vaccinium oxycoccos*		*Spartina pectinata*
	Salix myricoides	*Woodwardia virginica*		*Solidago riddellii*
	Salix serissima	*Xyris difformis*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

End of Narrative Rating. Begin Quantitative Rating on next page.

Wetland ID:	W-JMH-002

Site:	Mt Perry Switch	Rater(s):	JMH, LMP	Date:	10/4/2022

Field ID:

W-JMH-002

Delineated acres:	0.06
Total acres:	0.06

Metric 1. Wetland Area (size).

0.0 (max 6 pts) | 0.0 (subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

4.0 (max 14 pts.) | 4.0 (subtotal)

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [x] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

2b. Intensity of surrounding land use. Select one or double check and average.

- [ ] VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

9.0 (max 30 pts.) | 13.0 (subtotal)

3a. Sources of Water. Score all that apply.

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1)
- [ ] Seasonal/Intermittent surface water (3)
- [ ] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [ ] Between stream/lake and other human use (1)
- [ ] Part of wetland/upland (e.g. forest), complex (1)
- [x] Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- [ ] Semi- to permanently inundated/saturated (4)
- [ ] Regularly inundated/saturated (3)
- [ ] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

5.5 (max 20 pts.) | 18.5 (subtotal)

4a. Substrate disturbance. Score one or double check and average.

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [x] Poor (1)

4c. Habitat alteration. Score one or double check and average.

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [x] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [ ] nutrient enrichment

18.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-JMH-002

Site:	Mt Perry Switch	Rater(s):	JMH, LMP	Date:	10/4/2022

Field ID:
W-JMH-002

18.5
subtotal this page

0.0 | **18.5** | **Metric 5. Special Wetlands.**

max 10 pts. | subtotal

Check all that apply and score as indicated.

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

1.0 | **19.5** | **Metric 6. Plant communities, interspersion, microtopography.**

max 20pts. | subtotal

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

0	Aquatic bed
1	Emergent
0	Shrub
0	Forest
0	Mudflats
0	Open water
0	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

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

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

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

6d. Microtopography.

Score all present using 0 to 3 scale.

0	Vegetated hummucks/tussucks
0	Coarse woody debris >15cm (6in)
0	Standing dead >25cm (10in) dbh
0	Amphibian breeding pools

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

19.5 **TOTAL (Max 100 pts)**

1 **Category**

Wetland ID:	W-JMH-002

ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1 Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	*NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	**0**		
	Metric 2. Buffers and surrounding land use	**4**		
	Metric 3. Hydrology	**9**		
	Metric 4. Habitat	**5.5**		
	Metric 5. Special Wetland Communities	**0**		
	Metric 6. Plant communities, interspersion, microtopography	**1**		
	TOTAL SCORE	**19.5**		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	W-JMH-002

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	***NO**	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	***NO**	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	***NO**	Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	***YES** Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	***NO**	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1- 54(C).
Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	***NO** Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	***Category 1**	Category 2	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

W-JMH-001 **Date:** October 4, 2022 **Description:** PEM Category 1 Facing East	

W-JMH-001 **Date:** October 4, 2022 **Description:** PEM Category 1 Facing North	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

W-JMH-001 **Date:** October 4, 2022 **Description:** PEM Category 1 Facing South	

W-JMH-001 **Date:** October 4, 2022 **Description:** PEM Category 1 Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

W-JMH-001

Date:

October 4, 2022

Description:

PEM Category 1

Facing Soil

W-JMH-002

Date:

October 4, 2022

Description:

PEM Category 1

Facing East

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

W-JMH-002

Date:

October 4, 2022

Description:

PEM Category 1

Facing North

W-JMH-002

Date:

October 4, 2022

Description:

PEM Category 1

Facing South

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

W-JMH-002

Date:

October 4, 2022

Description:

PEM Category 1

Facing West

W-JMH-002

Date:

October 4, 2022

Description:

PEM Category 1

Facing Soil

APPENDIX B

OEPA STREAM DATA FORMS / DELINEATED

FEATURES PHOTOGRAPHS (STREAMS)

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3): 49

SITE NAME/LOCATION: Mt Perry Switch

SITE NUMBER: Stream 60 | RIVER BASIN: Muskingham | RIVER CODE: N/A | DRAINAGE AREA (mi²): 0.03

LENGTH OF STREAM REACH (ft): 200 | LAT: 39.898773 | LONG: -82.253893 | RIVER MILE: N/A

DATE: 10/4/2022 | SCORER: JMH | COMMENTS: Intermittent

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	.50
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65-256 mm) [12 pts]	.30	☐	CLAY or HARDPAN [0 pt]	.10
☐	GRAVEL (2-64 mm) [9 pts]	.10	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	.10	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 30.00%

Substrate Percentage Check

(A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

(B) TOTAL NUMBER OF SUBSTRATE TYPES: 4

HHEI Metric Points

Substrate Max = 40: 19

A + B

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

☐	> 30 centimeters [20 pts]	☑	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 8.00

Pool Depth Max = 30: 15

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

☐	> 4.0 meters (> 13') [30 pts]	☑	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☐	≤ 1.0 m (≤ 3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		

COMMENTS: | AVERAGE BANKFULL WIDTH (meters): 1.07

Bankfull Width Max=30: 15

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☑	☑	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

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

☐	Stream Flowing	☑	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☐	Dry channel, no water (ephemeral)

COMMENTS: _____

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

☐	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☑	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☑ EWH Name: Johnathan Creek Distance from Evaluated Stream 1.98 miles

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

USGS Quadrangle Name: Glenford NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Perry Township/City: Hopewell Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: _____ Quantity: _____

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 35%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

Salamanders Observed? (Y/N) N Species observed (if known): _____

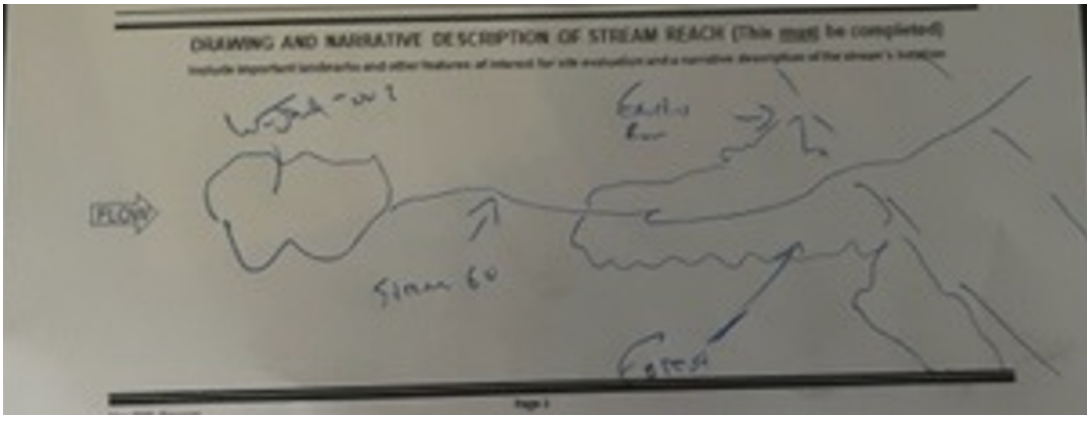
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

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

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

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) **23**

SITE NAME/LOCATION: Mt Perry Switch

SITE NUMBER: Stream 61 | RIVER BASIN: Muskingham | RIVER CODE: N/A | DRAINAGE AREA (mi²): 0.03

LENGTH OF STREAM REACH (ft): 164 | LAT: 39.898859 | LONG: -82.254292 | RIVER MILE: N/A

DATE: 10/4/2022 | SCORER: JMH | COMMENTS: Ephemeral

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0%	☑	SILT [3 pt]	.65
☐	BOULDER (>256 mm) [16 pts]	0%	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0%
☐	BEDROCK [16 pts]	0%	☐	FINE DETRITUS [3 pts]	0%
☑	COBBLE (65-256 mm) [12 pts]	.00	☐	CLAY or HARDPAN [0 pt]	.0
☐	GRAVEL (2-64 mm) [9 pts]	.10	☐	MUCK [0 pts]	0%
☐	SAND (<2 mm) [6 pts]	.25	☐	ARTIFICIAL [3 pts]	0%

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0.00%

Substrate Percentage Check

(A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 15

(B) TOTAL NUMBER OF SUBSTRATE TYPES: 3

HHEI Metric Points

Substrate Max = 40: **18**

A + B

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

☐	> 30 centimeters [20 pts]	☐	5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☑	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS: | MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: **0**

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

☐	> 4.0 meters (> 13') [30 pts]	☐	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐	> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	☑	≤ 1.0 m (≤ 3' 3") [5 pts]
☐	> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]		

COMMENTS: | AVERAGE BANKFULL WIDTH (meters): .97

Bankfull Width Max=30: **5**

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☑	☑	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS: _____

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

☐	Stream Flowing	☑	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☐	Dry channel, no water (ephemeral)

COMMENTS: _____

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

☐	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☑	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☑ EWH Name: Johnathan Creek Distance from Evaluated Stream 1.98 miles

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

USGS Quadrangle Name: Glenford NRCS Soil Map Page: N/A NRCS Soil Map Stream Order: N/A

County: Perry Township/City: Hopewell Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: _____ Quantity: _____

Photo-documentation Notes: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 35%

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (umhos/cm) _____

Is the sampling reach representative of the stream (Y/N) Y If not, explain: _____

Additional comments/description of pollution impacts: _____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): _____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): _____

Salamanders Observed? (Y/N) N Species observed (if known): _____

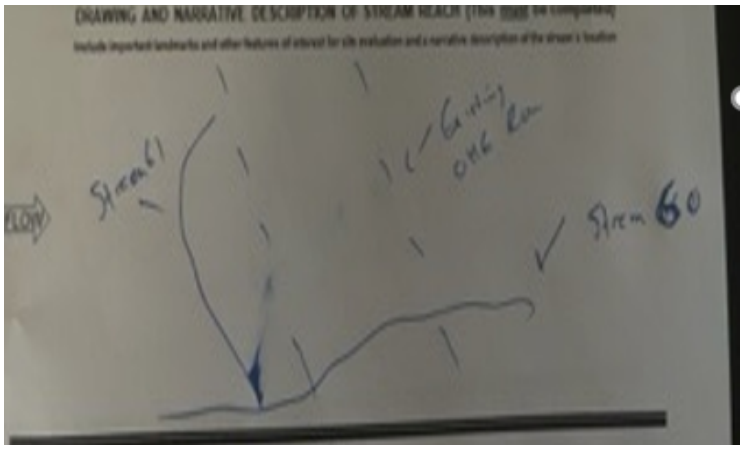
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): _____

Comments Regarding Biology: _____

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

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

FLOW



AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

S-JMH-060

Date:

October 4, 2022

Description:

Intermittent

Facing Upstream

S-JMH-060

Date:

October 4, 2022

Description:

Intermittent

Facing Downstream

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

S-JMH-060

Date:

October 4, 2022

Description:

Intermittent

Facing Substrate

S-JMH-061

Date:

October 4, 2022

Description:

Ephemeral

Facing Upstream

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

S-JMH-061

Date:

October 4, 2022

Description:

Ephemeral

Facing Downstream

S-JMH-061

Date:

October 4, 2022

Description:

Ephemeral

Facing Substrate

APPENDIX C

UPLAND DRAINAGE FEATURES PHOTOGRAPHIC RECORD

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Upland Drainage Features Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

UDF-JMH-001-UP **Date:** October 4, 2022 **Description:** Upland Drainage Feature North	

UDF-JMH-001-DOWN **Date:** October 4, 2022 **Description:** Upland Drainage Feature South	

APPENDIX D

HABITAT PHOTOGRAPHIC RECORD

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

PH-01	
Date: October 4, 2022	
Description: Old Field Habitat Facing West	

PH-02	
Date: October 4, 2022	
Description: Forested Habitat Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Mount Perry Switch Install and Crooksville- N. Newark Line Work TR 380 Tie Project	60690752

PH-03

Date:

October 4, 2022

Description:

Agriculture Habitat

Facing South

PH-04

Date:

October 4, 2022

Description:

Wetland/Stream Habitat

Facing South

APPENDIX E

AGENCY CORRESPONENCE

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994

October 21, 2022

Project Code: 2022-0090679

Dear Mr. Holmes:

The U.S. Fish and Wildlife Service (Service) received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse effects to threatened and endangered species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: Due to the project, type, size, and location, we do not anticipate adverse effects to federally endangered, threatened, or proposed species or proposed or designated critical habitat. If there are any project modifications during the term of this action, or additional information for listed or proposed species or their critical habitat becomes available, or if new information reveals effects of the action that were not previously considered, then please contact us for additional project review.

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

Sincerely,

Patrice Ashfield
Field Office Supervisor

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

November 15, 2022

Joshua Holmes
AECOM
Foster Plaza 6
681 Anderson Drive, Suite 120
Pittsburgh, Pennsylvania 15220

Re: 22-1014; AEP Mt. Perry Switch Project

Project: The proposed project will construct a new 138kV deliver point for service to South Central Power on the Crooksville North Newark circuit.

Location: The proposed project is located in Hopewell Township, Perry County, Ohio.

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

Natural Heritage Database: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

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

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

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally threatened species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range the lake chubsucker (*Erimyzon sucetta*) a state threatened fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this or other aquatic species.

The project is within the range of the northern harrier (*Circus hudsonis*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 through July 31. If this habitat will not be impacted, this project is not likely to impact this species.

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

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

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator

APPENDIX F

DESKTOP ASSESSMENT FOR WINTER BAT HABITAT

American Electric Power
8600 Smith's Mill Road
New Albany, OH 43054
ajtoohey@ aep.com

September 30, 2022

Attention: Mr. John Kessler
Ohio Department of Natural Resources
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693

Via email: environmentalreviewrequest@dnr.state.oh.us; NHDRequest@dnr.state.oh.us

Reference: Request for Technical Assistance, Mount Perry Switch Install,
Perry County, Ohio

Dear Mr. Kessler:

AEP Ohio Transmission Company, Inc. (AEP), is formally requesting that the Ohio Department of Natural Resources (ODNR) complete a review for the proposed Mount Perry Switch Install Project (Project) in Perry County, Ohio. The project will construct a new 138kV deliver point for service to South Central Power on the Crooksville North Newark circuit in Perry, County Ohio. The project will install a 3-way POP MOAB switch and build 0.05-mile line to SCPs new Mount Perry Station and up to an additional 0.50 miles for the Crooksville-N Newark Tie. The Mount Perry Switch Install section of the project is approximately 5 acres in area, and the Crooksville- N. Newark Line Work TR 380 is approximately 2 acres in area. The Study Area is located on the Glenford, Ohio U.S. Geologic Survey 7.5' topographical quadrangle as displayed on Project Overview Map (Figure 1).

In accordance with the Ohio Division of Wildlife and the U.S. Fish and Wildlife Services (OH-Field Office) joint guidance for bat surveys and tree clearing (May 2022), AECOM completed a desktop review of publicly available data to identify underground voids which could be potential hibernation sites for overwintering bats (hibernacula) within 0.25-miles of the Project area. The data sources utilized include USGS topographical maps, aerial photography, and ODNR's Division of Mineral Resources and Geological Survey Data for Known Mining Activity and Karst Geology/Sinkholes as shown on Figure 1 and 2. Based on the available desktop resources, several surface mines are located within 0.25-mile of the Project. The Project is within one of these surface mines that were identified. No karst features were identified within 0.25-mile of the Project and the closest karst features is approximately 9 miles from the Project area.

The proposed Project involves existing and construction of new Right-of-Way (ROW). Tree clearing activities will be occur for the construction of the new ROW. For the existing ROW potential tree clearing will be limited and side-trimming of the existing electric utility ROW will be used to limit tree clearing. Ground disturbance will be limited to the removal of existing poles and installation of new pole structures. No blasting is anticipated to be required for this Project. Therefore, it is not anticipated that the proposed project activities affect any subterranean voids or nearby hibernacula that may be present. Due to the nature of the Project, AECOM is requesting your concurrence that no further coordination regarding potential impacts to bat species potential hibernaculum(a) is warranted.

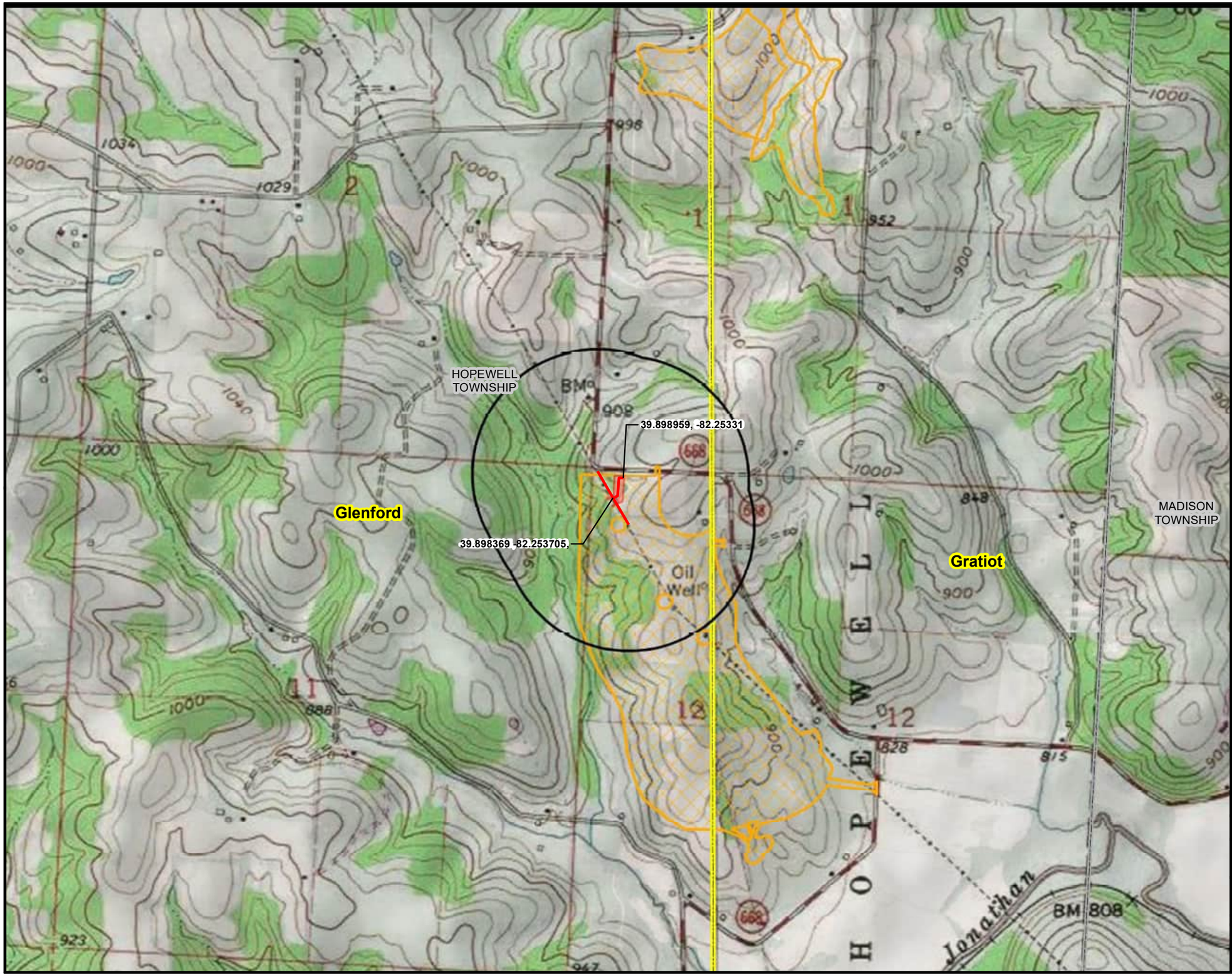
Please provide us with the results of the ODNR's environmental review, including results of the ODNR Natural Heritage Database search, at your earliest convenience. If you have questions or need additional information regarding the Project, please contact me at the phone number or email below. Thank you for your assistance with this request.

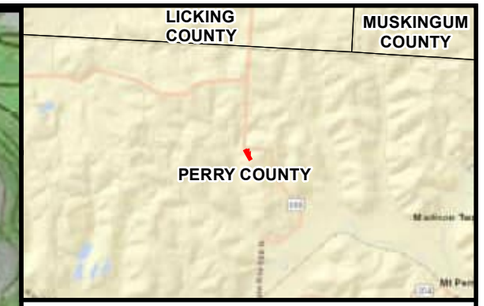
Sincerely,

Rebecca Buchanan, CPESC
Project Manager
Impact Assessment & Permitting

Attachments: Figure 1 – Topographic Project Overview
Figure 2 – Aerial Project Overview
Natural Heritage Data Request Form
Electronic Shapefiles (.shp)

Cc: Amy J. Toohey
Environmental Specialist-Consultant
Phone: (614-565-1480)
ajtoohey@aep.com





Legend

- Mount Perry Switch Line
- Extension Line Easement
- Quarter Mile Review Area
- Surface Mine (Coal Mining Operation)
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- Couny Boundary

N

0 500 1,000 2,000

Feet

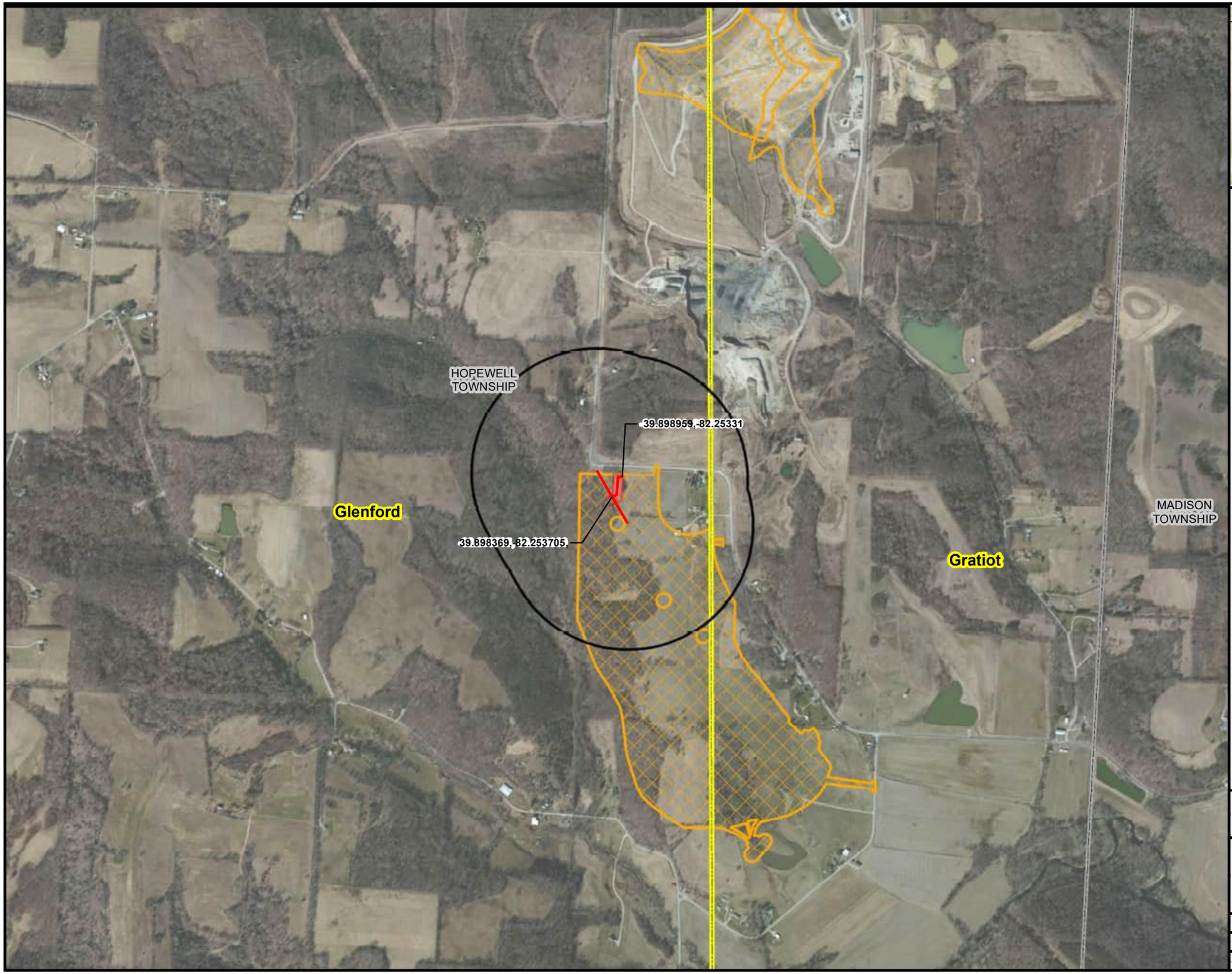
AEP

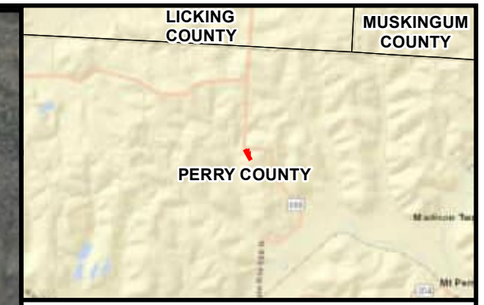
Mount Perry Switch Project

FIGURE 1
TOPOGRAPHIC PROJECT OVERVIEW

DATE: 9/29/2022	1 INCH = 1,000 FEET
CREATED BY: PH	CHECKED BY: JH
JOB NO. 60683111	AECOM

Date Saved: 9/29/2022
Document Path: Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60683111_AEP_MtPerry_Install3_MXDs\0_Agency Letters\ODNR_Fig1_Project_Overview.mxd





Legend

- Mount Perry Switch Line
- Extension Line Easement
- Quarter Mile Review Area
- Surface Mine (Coal Mining Operation)
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary

N

0 500 1,000 2,000

Feet

AEP

Mount Perry Switch Project

FIGURE 2
AERIAL PROJECT OVERVIEW

DATE: 9/29/2022	1 INCH = 1,000 FEET
CREATED BY: PH	CHECKED BY: JH
JOB NO. 60683111	AECOM

Date Saved: 9/29/2022
Document Path: Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60683111_AEP_MtPerry_Install\3_MXDs\0_Agency Letters\ODNR_Fig2_Project_Overview.mxd

AECOM

Date:	May 19, 2023
Project No.	ODNR 19-862; Crooksville-North Newark 138 kV Transmission Line Rebuild
To:	Nathan Reardon (Compliance Coordinator, Ohio Department of Natural Resources [ODNR} – Division of Wildlife)
From:	Brian J. Bielfelt
Cc:	Amy Toohey (AEP), Becky Buchanan (AECOM)
Subject:	Northern Harrier Presence/Absence Survey Results

AECOM conducted surveys for Northern Harrier following ODNR protocol at locations previously approved by ODNR to have potential habitat. Project construction activities within the identified habitat during the nesting season are unavoidable; therefore, presence/absence surveys were conducted. Note, the original habitat assessment addressed additional areas not included in surveys because these areas will be constructed outside the harrier avoidance season. Brian Bielfelt and Kelsey Yeager conducted audio/visual surveys, using point count survey methodology, on April 20th, May 4th, and 11th,2023. All surveys were completed 30 minutes prior to sunrise and completed within 3 hours when wind speeds were less than 3 miles per hour, with no precipitation, or other factors that would hinder detectability.

Five (5) point count stations were established within cattle pastures located at existing structures 93-94, 149-150, and 152 (**Figures 1 and 2**). At the beginning of the surveys (April 20), grasses around existing structure 94 were heavily grazed (roughly 2-6 inches tall) but did not appear grazed around existing structure 93 (roughly 1.5 feet tall). Initially, cows were excluded from the area but began grazing around Structure 93 by survey completion (May 11). The pastures around existing structures 149 and 150 were lightly grazed, with grass above 1.5 feet tall. In contrast, the pasture at existing structure 152 was noticeably overgrazed with patchy, short grasses (<2 inches tall) and bare ground evident.

AECOM determined the following ODNR result – Surveys performed correctly, northern harrier not detected.

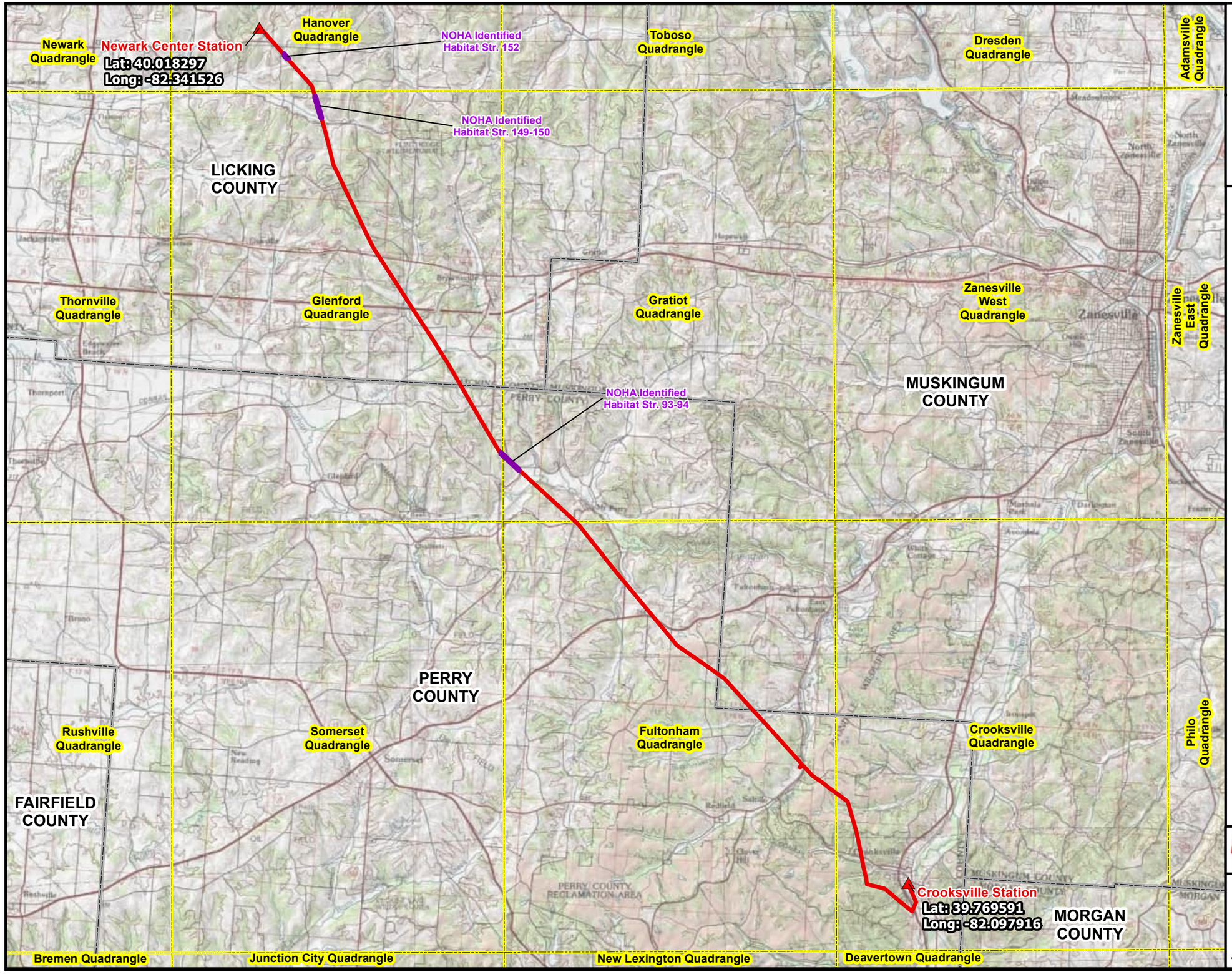
Results presented (Table 1) are provided to give better clarity to ODNR staff the type of avian community occupying the Project site. Comparing the grassland species observed and number of grassland birds detected relative to the total number of species detected provides a better understanding of the conditions present for Northern Harrier, an obligate grassland bird. Survey results indicate Northern Harrier as absent and highly unlikely to use these grasslands given proximity to forest edges, small field sizes, and heavily grazed/overgraze pastures that support species that are more generalized grassland birds rather than species typical of grasslands that support nesting sites suitable for Northern Harrier.

Table 1 – Survey Results

Survey Station No.	Harrier Detected?	No. of Sp. Detected	Obligate (OBL) and Facultative (FAC) Grassland Birds*
93	No	18	OBL - Savanah Sparrow; Eastern Meadowlark; FAC – Canada Goose, Mallard, Killdeer, Mourning Dove, Red-winged Blackbird
94	No	19	OBL - Savanah Sparrow; Eastern Meadowlark; FAC – Canada Goose, Killdeer, Mourning Dove, Red-winged Blackbird
149	No	34	FAC - Canada Goose, Killdeer, Mourning Dove, Eastern Kingbird, Common Yellow-throat, Red-winged Blackbird
150	No	18	FAC - Mourning Dove, Common Yellow-throat
152	No	27	OBL - Eastern Meadowlark; FAC – Turkey Vulture, Mallard, Killdeer, American Kestrel, Mourning Dove, Eastern Kingbird, Red-winged Blackbird

*based on Vickery, P.D. et. al, Conservation of Grassland Birds in the Western Hemisphere. Studies in Avian Biology, 19:2-26, 1992.

Pursuant to the ODNR Northern Harrier Protocol, the results indicate that construction may proceed within the identified habitat areas during the 2023 nesting season. AEP seeks concurrence from ODNR that proposed project will not impact nesting Northern Harrier and may continue without seasonal restrictions for 2023. Further, given the current habitat conditions at these grasslands, AEP seeks no further surveys 2024, should the project extend beyond 2023. No further report will be provided, unless otherwise requested.



LEGEND:

- Existing Station
- Crooksville - Newark Center 138 kV Transmission Line Rebuild
- Potential Northern Harrier Habitat Area
- Ohio USGS 7.5" Topographical Quadrangle
- County Boundary

N

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Feet

BASE MAP SOURCE:
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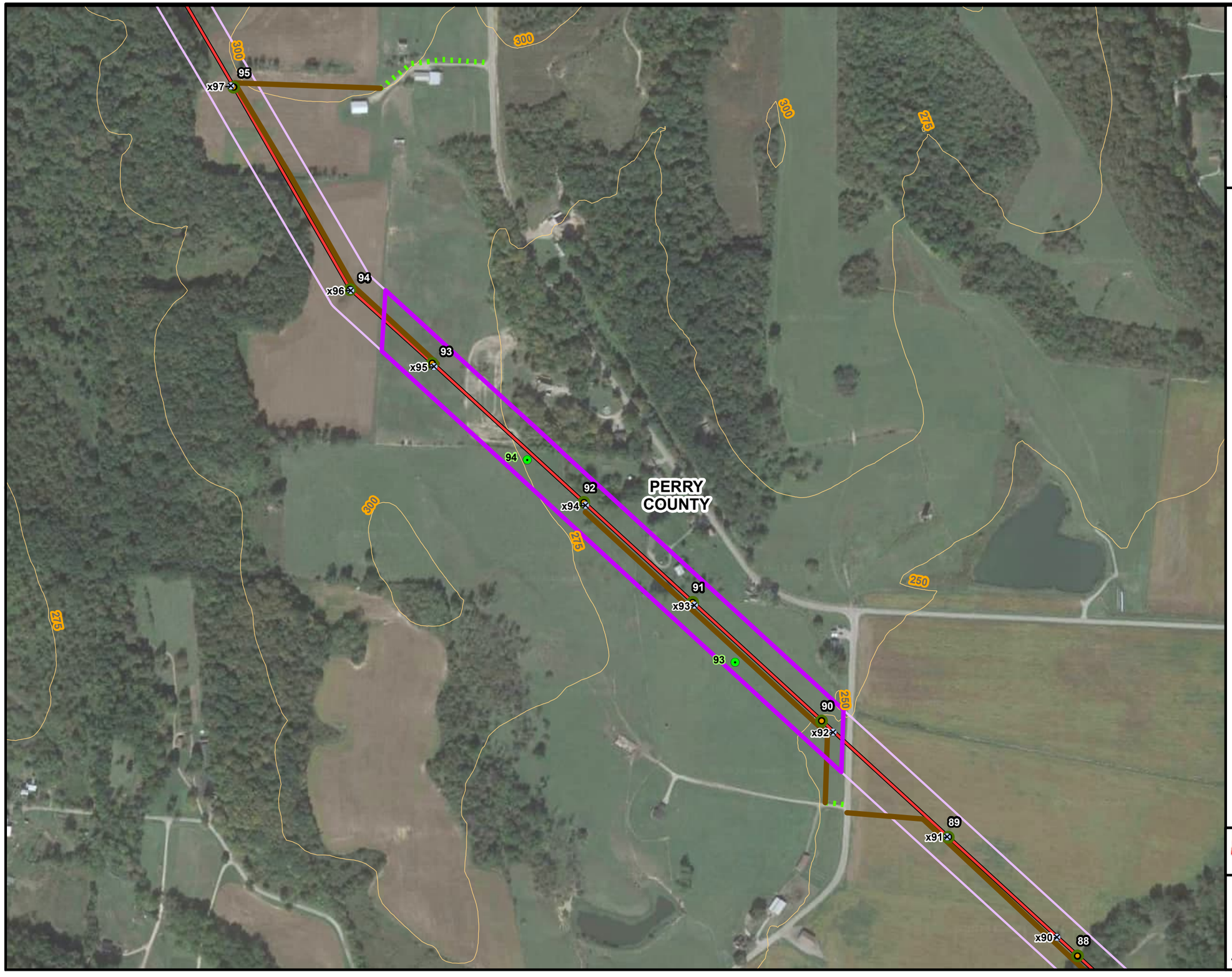
AEP OHIO TRANSMISSION COMPANY

Crooksville - Newark Center 138kV Transmission Line Rebuild Project

FIGURE 1
PRESENCE/ABSENCE
OVERVIEW MAP

JOB NO. 60616110

AECOM



LEGEND:

- Survey Point
- Proposed Structure
- Existing Structure
- Crooksville - Newark Center 138kV Transmission Line
- Timber Mat Access
- Existing Access Road with NO IMPROVEMENTS REQUIRED
- 25 ft Contour
- Potential Northern Harrier Habitat Area
- Project/Ecological Survey Study Area
- County Boundary

N

0 400 800

Feet

BASE MAP SOURCE:

OHIO TRANSMISSION COMPANY

Crooksville - Newark Center 138kV Transmission Line Rebuild Project

FIGURE 2A
PRESENCE/ABSENCE MAP

JOB NO. 60616110

AECOM

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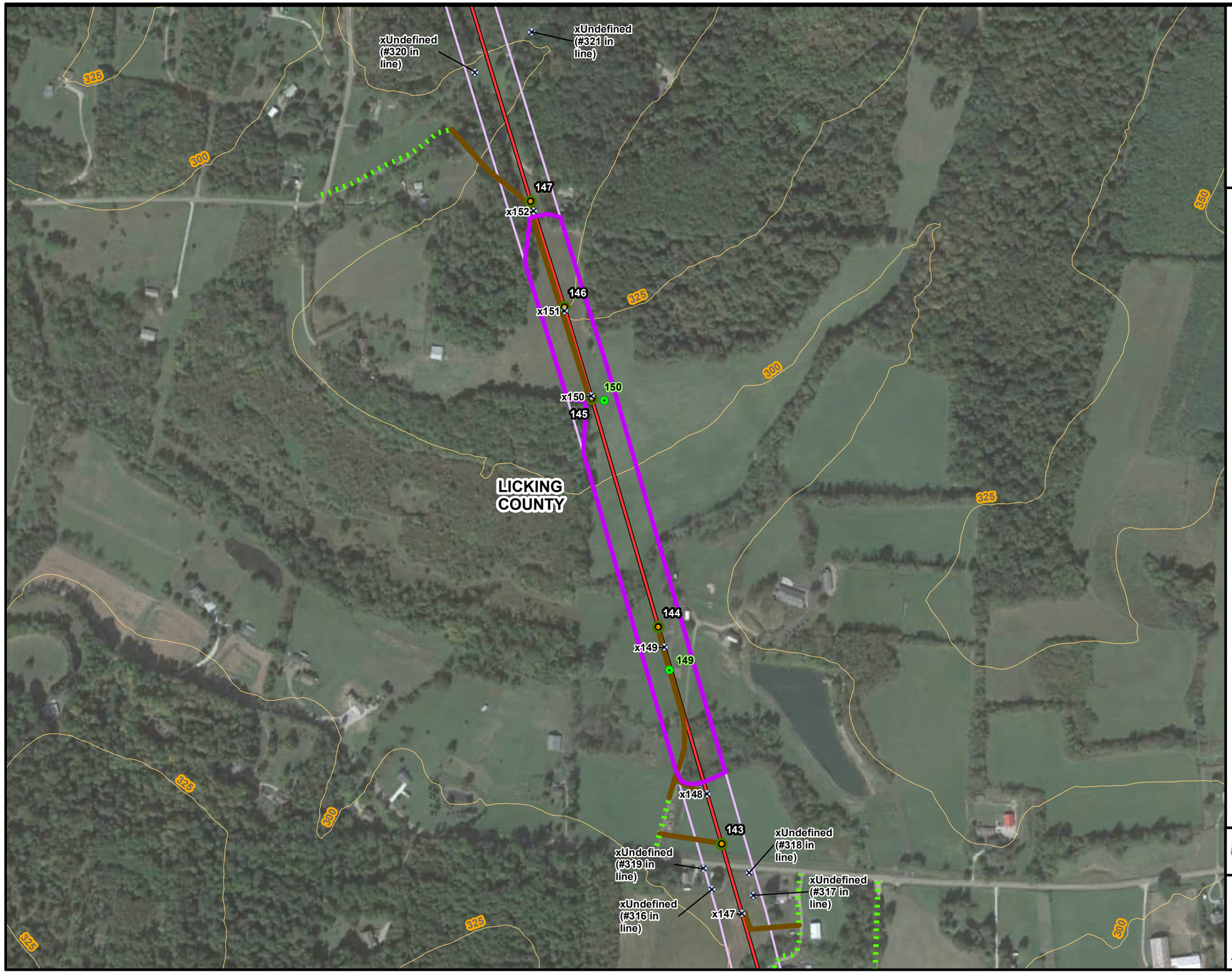

LEGEND:

- Survey Point
- Proposed Structure
- Existing Structure
- Crooksville - Newark Center 138kV Transmission Line
- Timber Mat Access
- Existing Access Road with NO IMPROVEMENTS REQUIRED
- 25 ft Contour
- Potential Northern Harrier Habitat Area
- Project/Ecological Survey Study Area
- County Boundary

N

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BASE MAP SOURCE:

AEP OHIO TRANSMISSION COMPANY

Crooksville - Newark Center 138kV Transmission Line Rebuild Project

FIGURE 2B
PRESENCE/ABSENCE MAP

JOB NO. 60616110

AECOM

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LEGEND:

- Survey Point
- Proposed Structure
- Existing Structure
- Crooksville - Newark Center 138kV Transmission Line
- New Access Road,
- Timber Mat Access
- Existing Access Road with NO IMPROVEMENTS REQUIRED
- 25 ft Contour
- Potential Northern Harrier Habitat Area
- Project/Ecological Survey Study Area
- County Boundary

N

0 400 800

Feet

BASE MAP SOURCE:

AEP OHIO TRANSMISSION COMPANY

Crooksville - Newark Center 138kV Transmission Line Rebuild Project

FIGURE 2C
PRESENCE/ABSENCE MAP

JOB NO. 60616110

AECOM

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Buchanan, Becky

From: Amy J Toohey <ajtoohey@aep.com>
Sent: Thursday, June 15, 2023 8:53 AM
To: Buchanan, Becky; David L Sowers Jr; Luz Abreu-Cohmer; Corson, Robert; Katie Burns; Alicia M Cross
Subject: FW: AEP Crooksville-Newark Center 138kV Northern Harrier Absence/Presence Survey results ODNR 19-862

Greetings:

We have ODNR concurrence on the Absence/Presence report for Crooksville-Newark Center 138kV—regarding environmental perspective construction can begin in the northern harrier areas. I am not sure if this approval needs to be docketed or not for OPSB before work can begin (I am not sure who the siting lead is as it has been inactive on siting components for a while-2021).

Thank you
Amy

From: Nathan.Reardon@dnr.ohio.gov <Nathan.Reardon@dnr.ohio.gov>
Sent: Thursday, June 15, 2023 7:44 AM
To: Amy J Toohey <ajtoohey@aep.com>
Subject: [EXTERNAL] RE: AEP Crooksville-Newark Center 138kV Northern Harrier Absence/Presence Survey results ODNR 19-862

Amy,

Because the northern harrier was not detected following the ODNR-DOW northern harrier protocol, the DOW concurs that the northern harrier is not likely present within the project area. Work may begin/resume without breeding period restrictions. I would also agree that any suitable habitat within the project area is low quality. Therefore, additional surveys or breeding period restrictions are not warranted.

Thank you,
Nathan

Nathan Reardon
Compliance Coordinator
ODNR Division of Wildlife
2045 Morse Road
Columbus, OH 43229
Phone: 614-265-6741

Email: nathan.reardon@dnr.ohio.gov

Support Ohio's wildlife. Buy a license or stamp at wildohio.gov.

From: Amy J Toohey <ajtoohey@aep.com>
Sent: Tuesday, June 13, 2023 10:46 AM
To: Reardon, Nathan <Nathan.Reardon@dnr.ohio.gov>
Subject: AEP Crooksville-Newark Center 138kV Northern Harrier Absence/Presence Survey results ODNR 19-862

Greetings:

The subject project will rebuild the existing 138kV line on existing alignment from the Crooksville Station north to the Newark Center switch (the larger project is Crooksville to North Newark). The subject project area extends from Perry County to Licking County along the maintained right-of-way. As a result of early coordination with ODNR, it was recommended consideration of the habitat in the project area for suitable habitat for the northern harrier.

AECOM completed a habitat assessment of the project area and determined areas of potential suitable habitat. In consultation of the ODNR protocol AECOM completed absence/presence survey for the areas noted in the survey memo attached. Also attached for your review is the kmz of the project area. As a result of the Northern Harrier absence/presence survey it was concluded that no impact to the Northern Harrier will occur by the project. The review also recommended that based on further field review and given the current habitat conditions at the grasslands, that no further surveys in 2024 would be required. Essentially, it was concluded that due to location of grasslands and overall suitable habitat potential. A kmz of the line is attached to help with your review and concurrence.

In summary, based on AECOM's results from the absence/presence survey and more detailed field review of the conditions of the project area in regard to suitable habitat, it was concluded that the project would not impact the Norther harrier and no further surveys are required due to the grassland location/condition or lack of suitable habitat.

Please let me know if you if you have any questions/concerns or need additional information to help with your review.

Thank you for your continued help and guidance with the projects,
Amy

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AMY J TOOHEY | **ENVIRONMENTAL SPEC CONSULT**
AJTOOHEY@AEP.COM | | C:614.565.1480
8600 SMITHS MILL ROAD, NEW ALBANY, OH 43054

Desktop Habitat Assessment for the Northern Harrier (*Circus hudsonius*)

Newark Center-Crooksville 138kV Transmission Line
Rebuild Project
Perry and Muskingum County, Ohio

Prepared for:
American Electric Power Ohio Transmission Company
8600 Smiths Mill Road
New Albany, Ohio 43054

Project Number: 60616110

April 2022

Prepared for:

AEP Ohio Transmission Company
8600 Smiths Mill Road
New Albany, Ohio 43054

Prepared by:

Hannah Apatang
Ecologist III
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525 Vine Street
Cincinnati, OH 45202
aecom.com

Table of Contents

Figures

Tables

1. Introduction

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing to rebuild the existing 138 kV transmission line between Crooksville and North Newark Stations in Perry, Muskingum, and Licking Counties, Ohio (Figure 1). Initial coordination with the Ohio Department of Natural Resources (ODNR) dated November 20, 2019 (Appendix A), indicated that the Crooksville-North Newark 138 kV Transmission Line Rebuild Project is within the range of the Northern Harrier (*Circus hudsonius*), a state-endangered bird. Therefore, AEP Ohio Transco retained AECOM Technical Services, Inc. (AECOM) to conduct a habitat assessment for this species by performing a desktop analysis, supplemented by data collected during general site assessments in the field.

Since initial coordination with ODNR, as requested by AEP Ohio Transco, the 32.4-mile long rebuild project has been divided into two segments: North Newark-Newark Center 138 kV Transmission Line Rebuild (Licking County, Ohio), and Newark Center-Crooksville 138 kV Transmission Line Rebuild (Perry and Muskingum County, Ohio). This desktop habitat assessment includes only the Newark Center-Crooksville 138 kV Transmission Line Rebuild Project (Project), which encompasses off right-of-way (ROW) access roads and the 200-ft wide ROW between the Newark Center Station and Crooksville Station, herein referred to as the Project Study Area.

This desktop habitat assessment provides background information for the Northern Harrier and an assessment of the potential nesting habitat within the Project Study Area based on literature review and conducted general site assessments.

2. Methodology

Based on the desktop analysis and previously conducted site assessments, areas of potential Northern Harrier nesting habitat with the Project Study Area were identified.

2.1 Desktop Analysis

During the desktop analysis, AECOM reviewed information included within the ODNR coordination letter (Appendix A) regarding the Northern Harrier and completed a literature review that encompassed the life history and ecology of the species and documented occurrences nearby the Project Study Area. A desktop analysis of potential nesting habitat using Google Earth aerial photography and National Land Cover Classification data was also conducted. Where applicable, the adjacent habitats were considered when evaluating potential nesting habitat.

2.2 General Site Assessment

In June, September, and October 2020 and July, September, November, and December 2021, AECOM ecologists conducted general site assessments of the Project Study Area. During the site assessments, AECOM conducted wetland delineations, stream assessments, and general habitat surveys. During the surveys, land cover observed were assigned a general classification based upon the principal land characteristics and vegetation cover of the location. Data collected during these general site assessments is discussed below.

3. Results

3.1 Desktop Analysis

3.1.1 Northern Harrier Life History and Ecology

The Northern Harrier is a slender, long-tailed species, with large wings, a curved ruff of feathers around its face and a white rump patch. The adult male is pale gray in color, while the female and juvenile birds are mostly brown. Prey species of the Northern Harrier consist of small mammals, especially voles, songbirds, snakes, frogs, and insects (ODNR DOW, 2018).

The Northern Harrier occurs throughout North America either as a breeding or non-breeding resident (Terres, 1991). This species breeds throughout Canada and Alaska, as well as California eastward including northern Texas into Ohio and the New England states (Rodewald et al., 2016). The Northern Harrier occupies its breeding grounds between March and April and migrates in a southerly direction in late August into September (Terres, 1991 and Bent, 1963).

In Ohio, the Northern Harrier breeding population has continued to decline, likely correlating with the decline of wetland areas and grassland habitats (Peterjohn, 2001). The nesting period in Ohio is April 15 – July 31 (ODNR DOW, 2017). Northern Harriers often nest in loose colonies, where the female builds a nest on the ground in open areas lacking trees (Smith et al. 2020). Breeding territories vary from 2 to 272 acres in size and nests are typically at least 100 meters apart (ODNR DOW, 2017). Rodewald et al. (2016) reported that research in Illinois indicated that Northern Harriers required at least 136 acres of habitat to breed. However, in Ohio the ODNR has provided guidance that open grasslands and wet meadow marshes of approximately 2 acres should be considered potential nesting habitat. This species hunts over these habitats, as well as agricultural fields, by gliding approximately 5 to 8 feet above the vegetation (ODNR, 2019 and Bent, 1963). Northern Harriers may forage along roadsides in open areas, but largely avoid urban areas (Smith et al., 2020).

3.1.2 Occurrence Within or Nearby the Project Area

Coordination with the ODNR indicated that the Project is within the range of the state-endangered Northern Harrier (Appendix A). The first Ohio Breeding Bird Atlas (OBBA) recorded Northern Harriers in a total of 35 priority blocks (or survey units) statewide, while the second OBBA recorded Northern Harriers in 31 priority blocks. The Ohio Hills physiographic region, which covers portions of over 30 counties in southeastern Ohio, including Perry, Muskingum, and a portion of Licking County, only had 3 block records during the second atlas survey effort (2006-2011). Review of the Ohio Breeding Bird Atlas I and II both indicated that Licking and Perry County had no confirmed nesting records during either of the atlas survey efforts (1982-1987;2006-2011). The second atlas effort (2006-2011) did record possible nesting Northern Harriers within Muskingum County and neighboring counties, such as Coshocton and Hocking Counties. The Northern Harrier remains a very rare breeder in Ohio, as Peterjohn and Rice (1991) estimated approximately 25 pairs nested annually within Ohio during the efforts of the first OBBA (Rodewald, et al. 2016).

3.2 General Site Assessment

Vegetative communities within the Project Study Area were assigned based on National Land Cover Classification data and verified through photos and observations during the general site assessments. A summary of the vegetative communities and descriptions identified within the Project Study Area are provided below, in Table 1, and illustrated on Figure 2. Representative photographs, collected during general site assessments, of identified potential nesting habitat are included in Appendix C.

TABLE 1: Vegetative Communities within the Newark Center-Crooksville 138 kV Transmission Line Rebuild Project Study Area

Vegetative Community	Description	Approximate Acreage Within the Project Study Area	Approximate Percentage within the Project Study Area
Agricultural	Agricultural lands being utilized for row-crop production and associated activities, typically devoid of vegetation outside of the target crop and opportunistic/invasive species.	84.0	14.5%
Landscaped Areas	Landscaped areas, including residential properties and commercial properties, were observed within the Project vicinity. These landscaped areas within the Project Study Area and adjacent areas are frequently mowed grasses and forbs.	55.5	9.6%
Old Field	Herbaceous cover exists alongside roads, field borders, and abandoned fields within the survey corridor of the Project in the form of successional old-field communities. These communities are the earliest stages of recolonization by plants following disturbance. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields. The old-field areas within the study corridors and adjacent areas are infrequently mowed areas of grasses, forbs, and occasional shrubs.	186.5	32.3%
Pasture/Hay Fields	Cattle and/or horse pasture, and hay fields were observed in various portions of the Project Study Area. These areas within the corridor and in adjacent areas consist of seasonally mowed and grazed areas of grass and forbs.	86.9	15.0%
Scrub-Shrub	Scrub-shrub habitats represent the successional stage between old-field and second growth forest, and often emerge in recently harvested forests responding to the lightness of the remaining canopy. Dominant species consist of herbaceous communities similar to that of old field habitat with a few woody species, to a community dominated by forest herbs and woody species.	35.9	6.2%
Streams/Wetlands	Streams and wetlands were observed both within and beyond the survey corridor for the Project.	52.0	9.0%
Successional Hardwood Woodlands	Successional mixed hardwood woodlands are present along the Project Study Area. Woody species dominating these areas included American sycamore (*Platanus occidentalis*), American elm (*Ulmus americana*), green ash (*Fraxinus pennsylvanica*), swamp white oak (*Quercus bicolor*), pin oak (*Quercus palustris*), red oak (*Quercus rubra*), black cherry (*Prunus serotina*), and shagbark hickory (*Carya ovata*). The dominant shrub-layer species included Morrow's honeysuckle (*Lonicera morrowii*), silky dogwood (*Cornus amomum*), and blackberry (*Rubus occidentalis*).	59.6	10.3%
Urban	Urban areas are areas developed with residential and commercial land uses, including roads, buildings, and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	17.3	3.0%
	Total	**577.7**	**100%**

4. Summary and conclusion

Northern Harriers can be found in open grasslands, both dry and wet, and both fresh and saltwater marshes, and have adapted well to grasslands on reclaimed strip mines (Smith et al. 2011). As such, some vegetative communities were initially excluded from further assessment. Furthermore, any suitable vegetative communities that were less than 2 acres of open contiguous habitat or in close proximity to human disturbances, i.e., roadways, commercial, or residential areas, were also excluded. Therefore, potential nesting habitat was identified by any suitable vegetative community that was not excluded for the forementioned reasons.

In summary, potential nesting habitat for the Northern Harrier was identified within five (5) areas of the Project Study Area. The identified potential nesting habitat areas are described in detail below in Table 2 and illustrated on Figure 3.

TABLE 2: Potential Northern Harrier Nesting Habitat Identified within the Project Study Area

Proposed Structures Numbers	Acres of Potential Nesting Habitat	Habitat Notes
152	2.7	Relatively open field, approximately 31-acres, surrounding existing transmission line corridor; some areas in close proximity to residential areas and roadway were excluded, as not suitable due to human disturbances.
147-144	11.0	Heavily wooded surrounding a mosaic of fields with human habitat and thick tree lines separating fields. Pods and streams present near the proposed project area, located within hayfields.
93-90	12.1	Overall habitat in the vicinity is are large, contiguous open fields surrounded by forest. Specifically, within the proposed project site, there is open hayfield with sloping terrain / gently=sloping hills with some human habitation.
81-80	6.1	Relatively open mosaic of fields to the south and east of the site sometimes divided by trees, forest directly adjacent to the site on the west and north. Multiple wetland features (streams and PEM wetlands) present. Numerous homes associated with Mt. Perry in the area.
35-33	6.5	Single hayfield cut out of the surrounding forest and with emergent stands of tree and woodlands present with in the field.

Initial Project coordination with ODNR (Appendix A) indicated that if suitable nesting habitat will be impacted, construction should be avoided in the identified habitat during the species' nesting period of May 15 to August 1.

The ODNR DOW Northern Harrier Survey Protocol states that if any suitable habitat is present, in an area greater that 0.8 ha (2 acres), then construction should be avoided in the habitat during the breeding period of April 15 through July 31. Additionally, if construction is necessary within the identified suitable habitat during the nesting period, an audio-visual survey, using point count survey methodology, should be conducted to identify the presence or probable absence of the Northern Harrier (ODNR DOW, 2017).

AEP Ohio Transco anticipates beginning Project construction activities within the identified potential nesting habitats during the stated nesting periods. Therefore, presence/absence surveys for Northern Harrier, following conditions outlined within the ODNR DOW Northern Harrier Survey Protocol (ODNR DOW, 2017), may be necessary. AECOM recommends coordination with the ODNR for concurrence of this desktop habitat assessment and guidance for proceeding with Project construction activities during the stated nesting periods.

5. References

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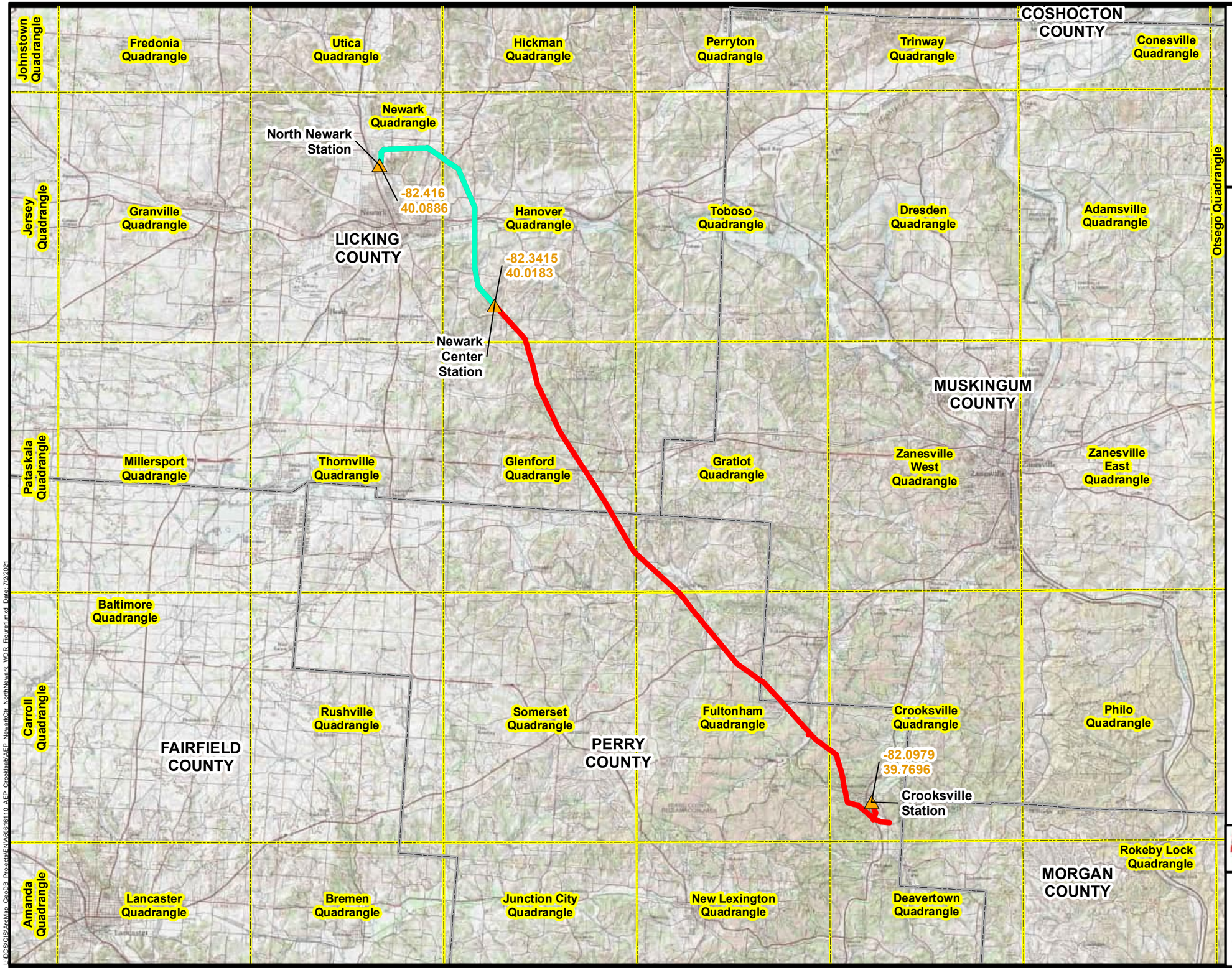
Figures



LEGEND:

- Station
- Newark Center-North Newark 138 kV Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Ohio USGS 7.5" Topographical Quadrangle
- County

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Miles

BASE MAP SOURCE:
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AEP OHIO TRANSMISSION COMPANY

Crooksville-North Newark 138kV Transmission Line Rebuild Project
Addendum 1

FIGURE 1
OVERVIEW MAP

JOB NO. 60616110

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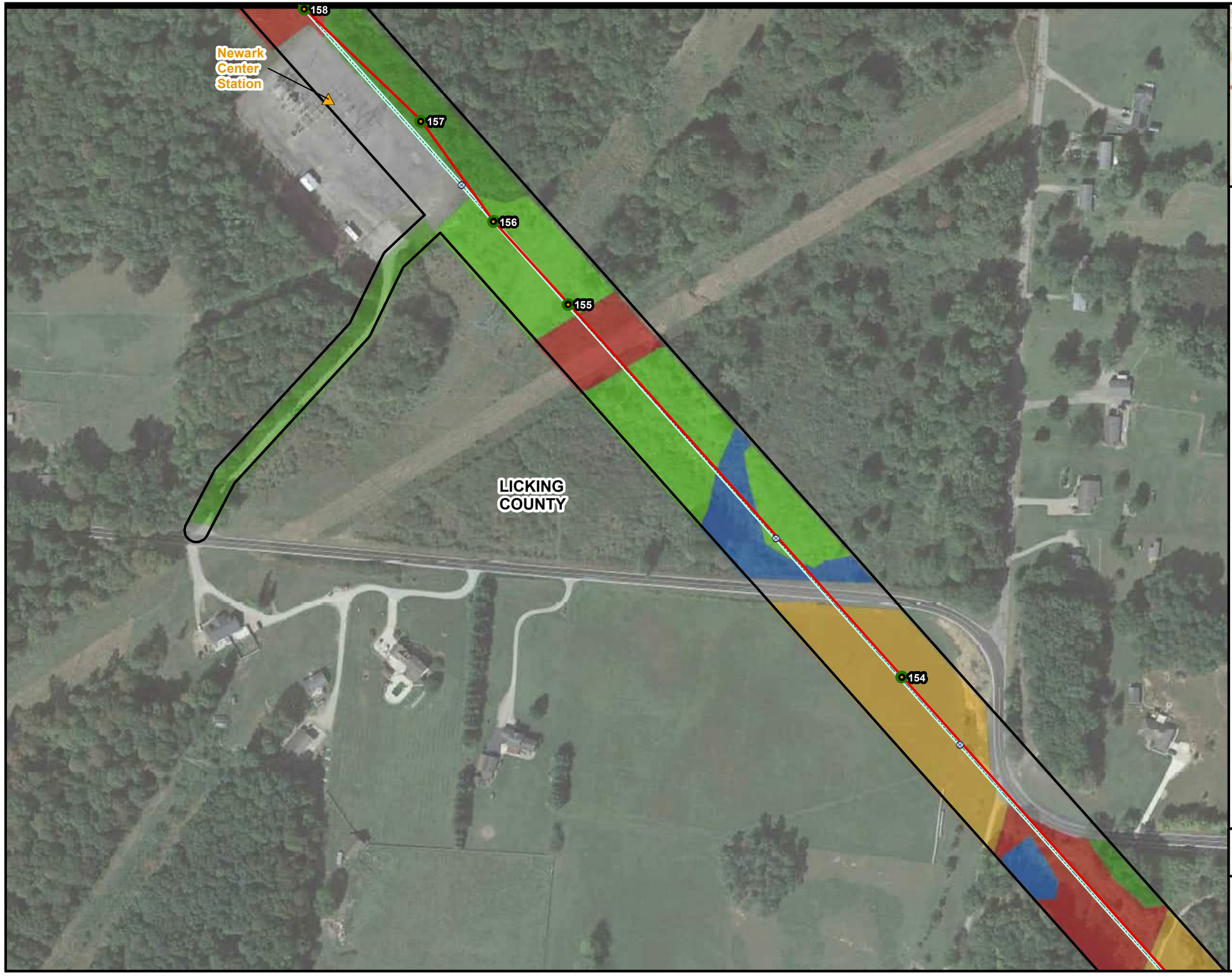

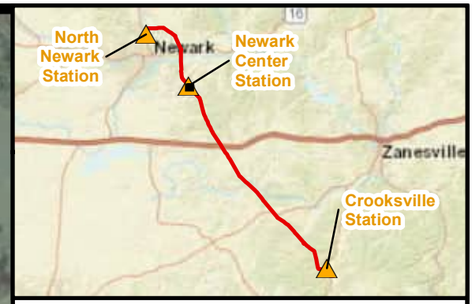

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Station
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

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Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2A
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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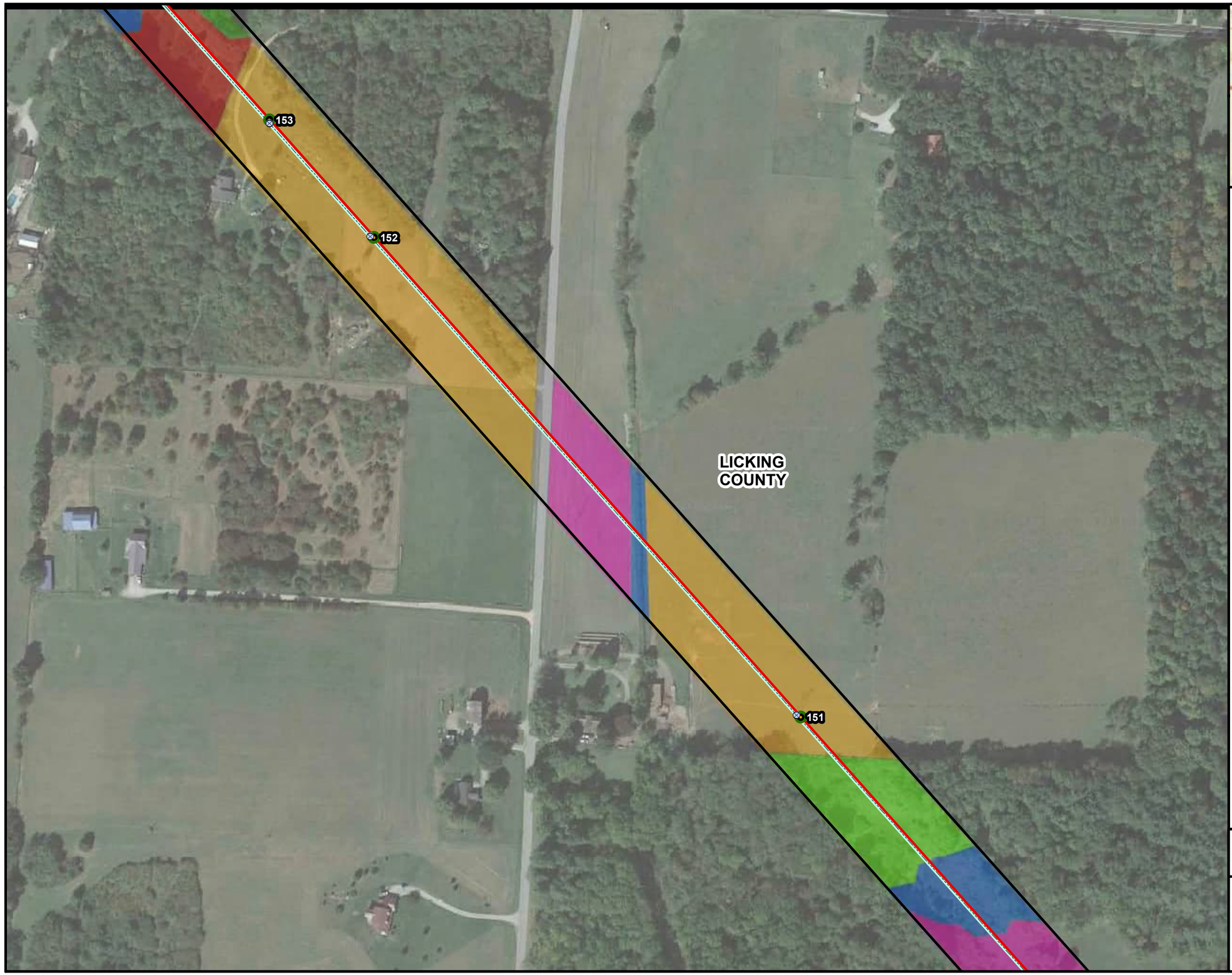

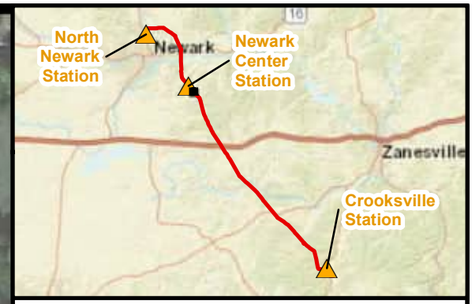

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
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AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2B
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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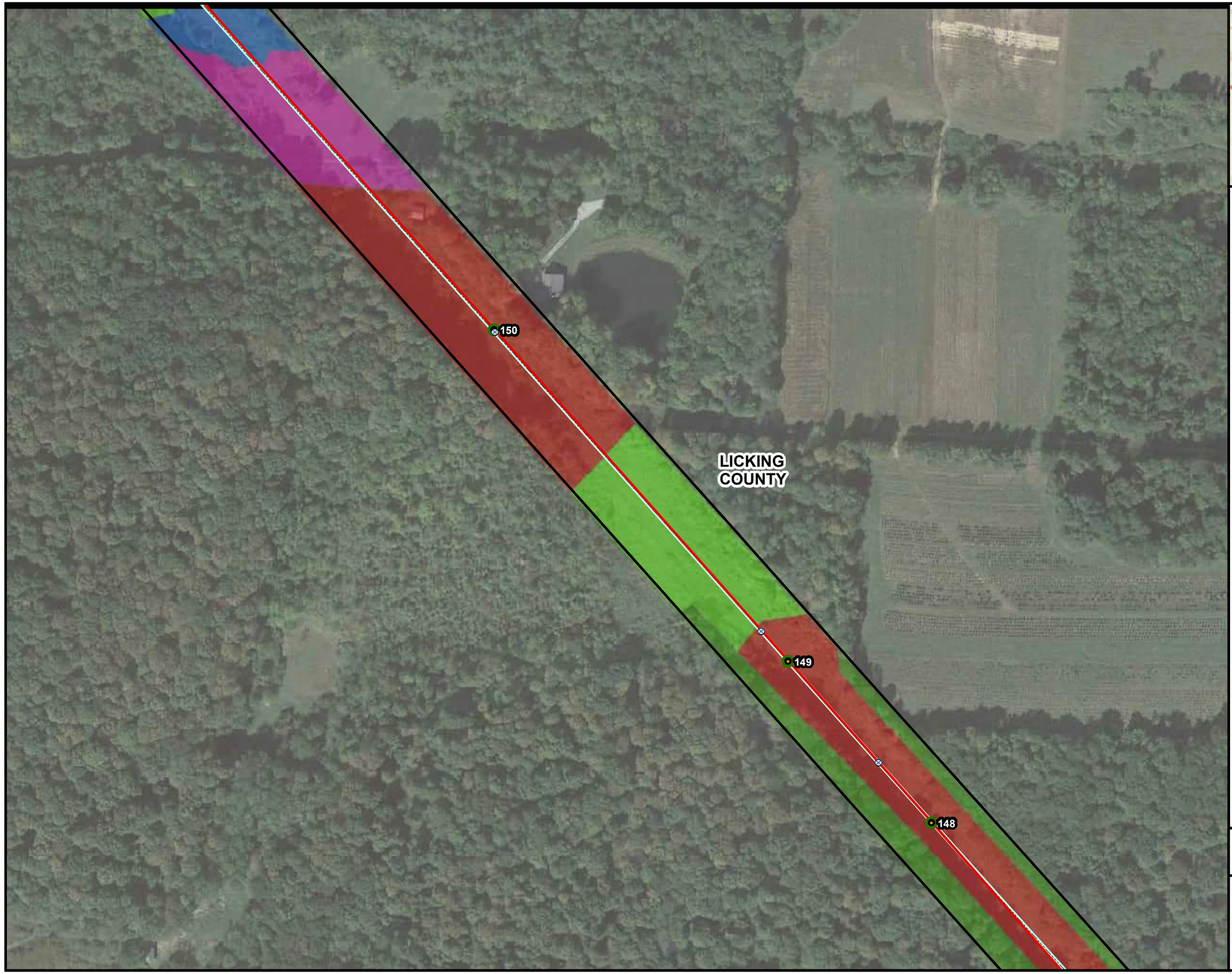

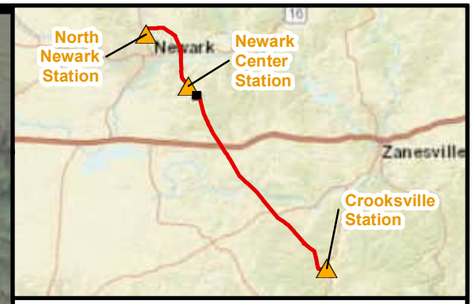

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland

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0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2C
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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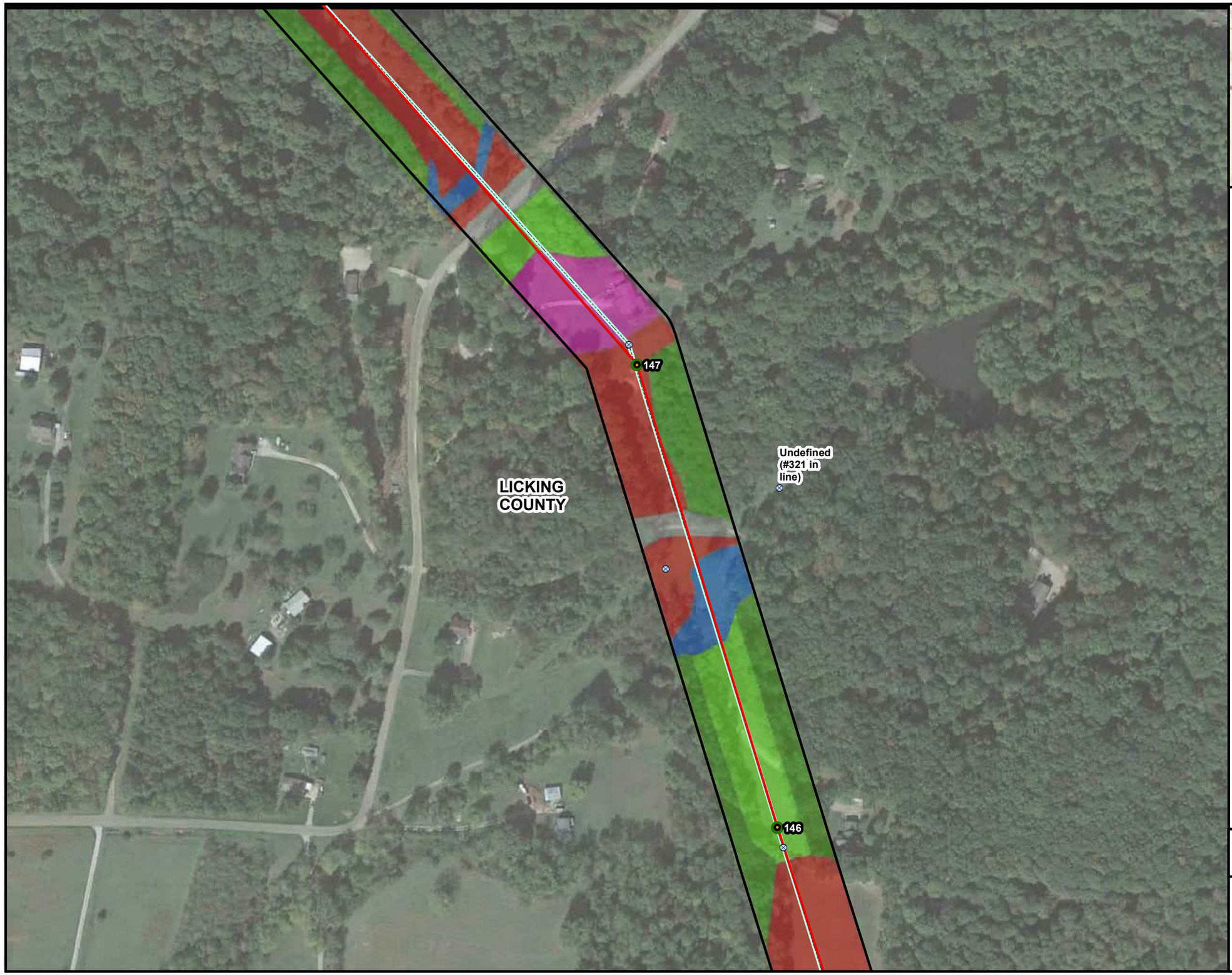
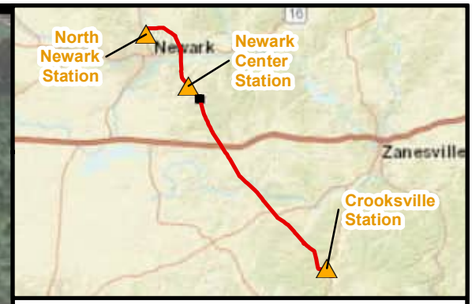




LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

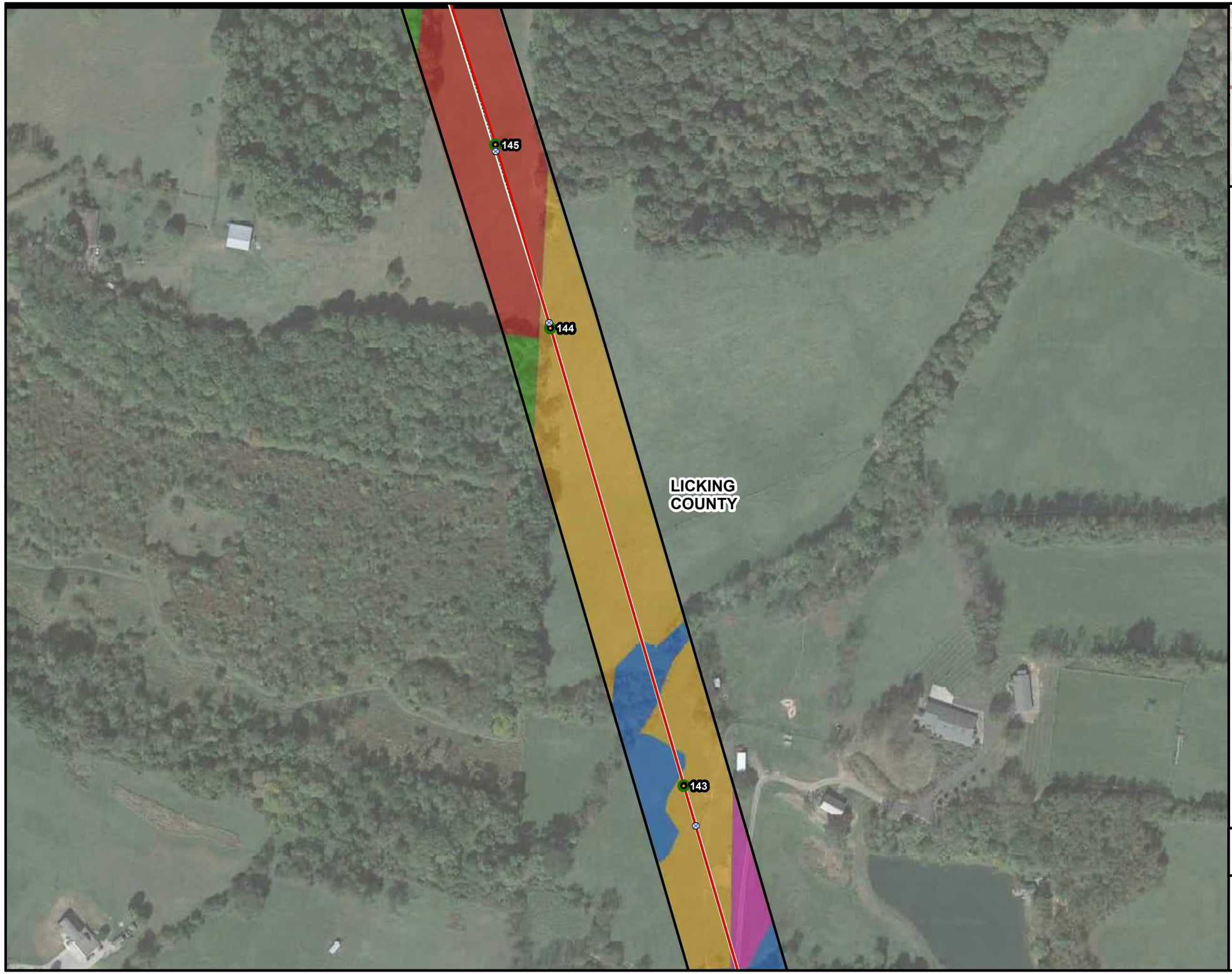
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

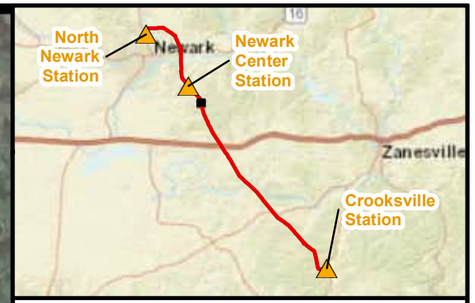
FIGURE 2D
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksandNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

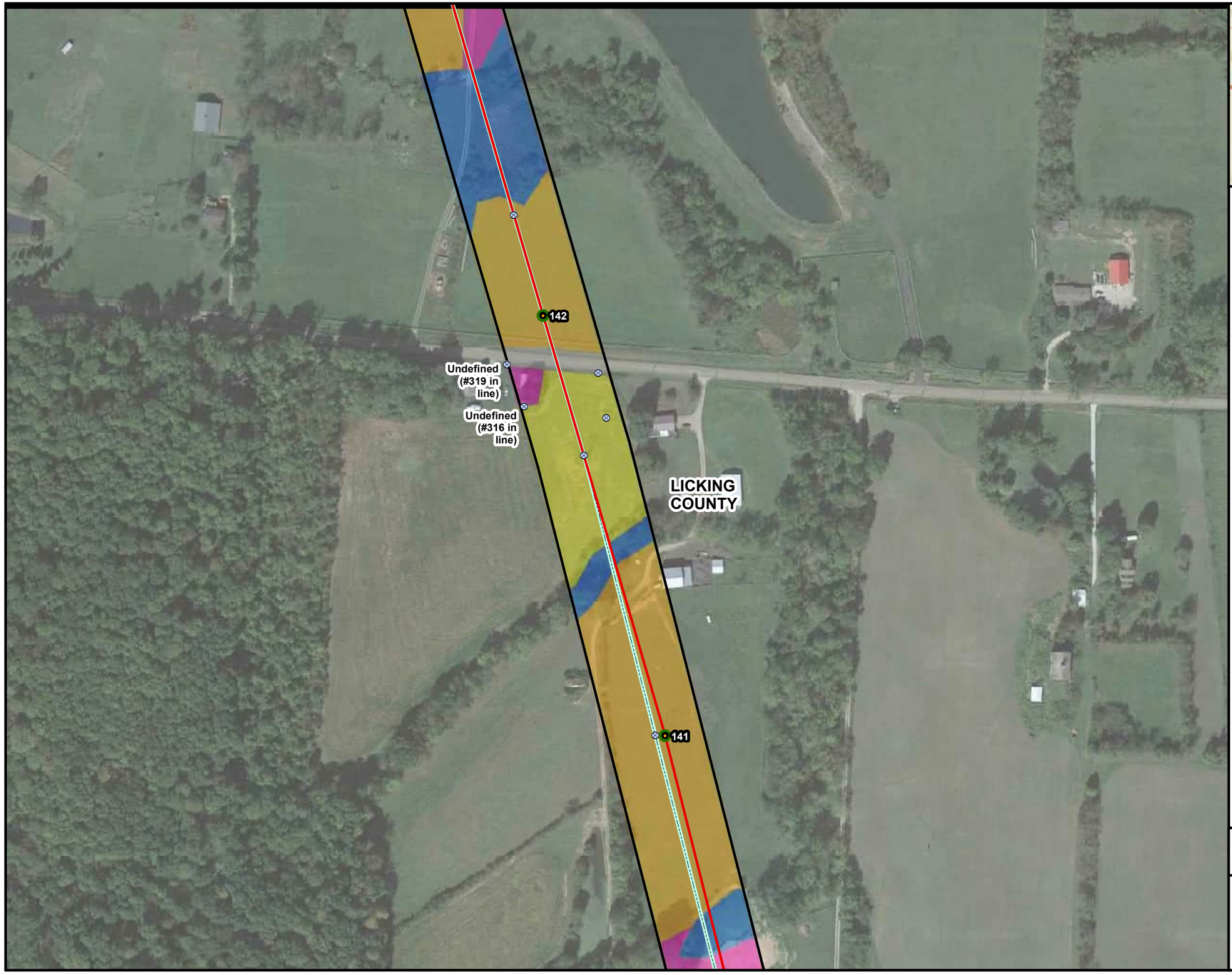
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

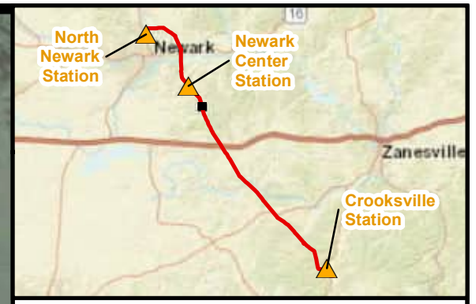
FIGURE 2E
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksandNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Landscaped Area
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

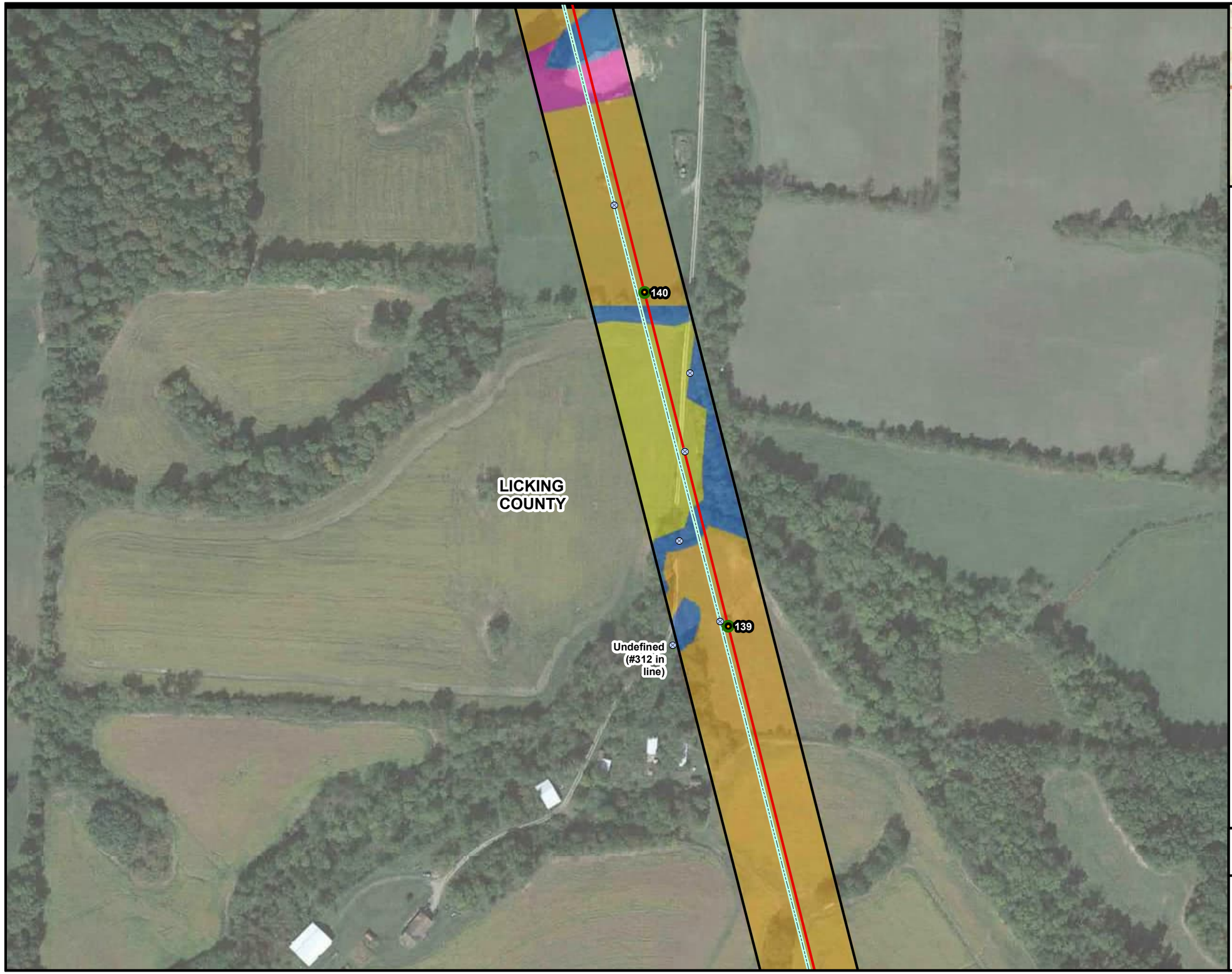
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

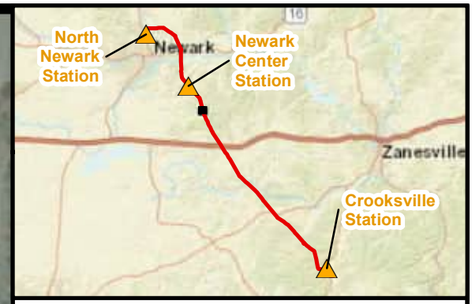
FIGURE 2F
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksvilleNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Landscaped Area
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2G
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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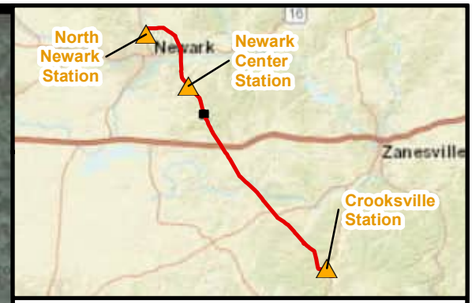


LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

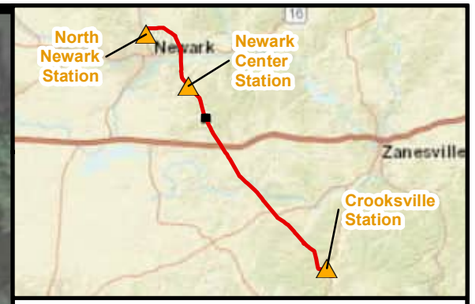
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2H
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksandNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022



LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2I
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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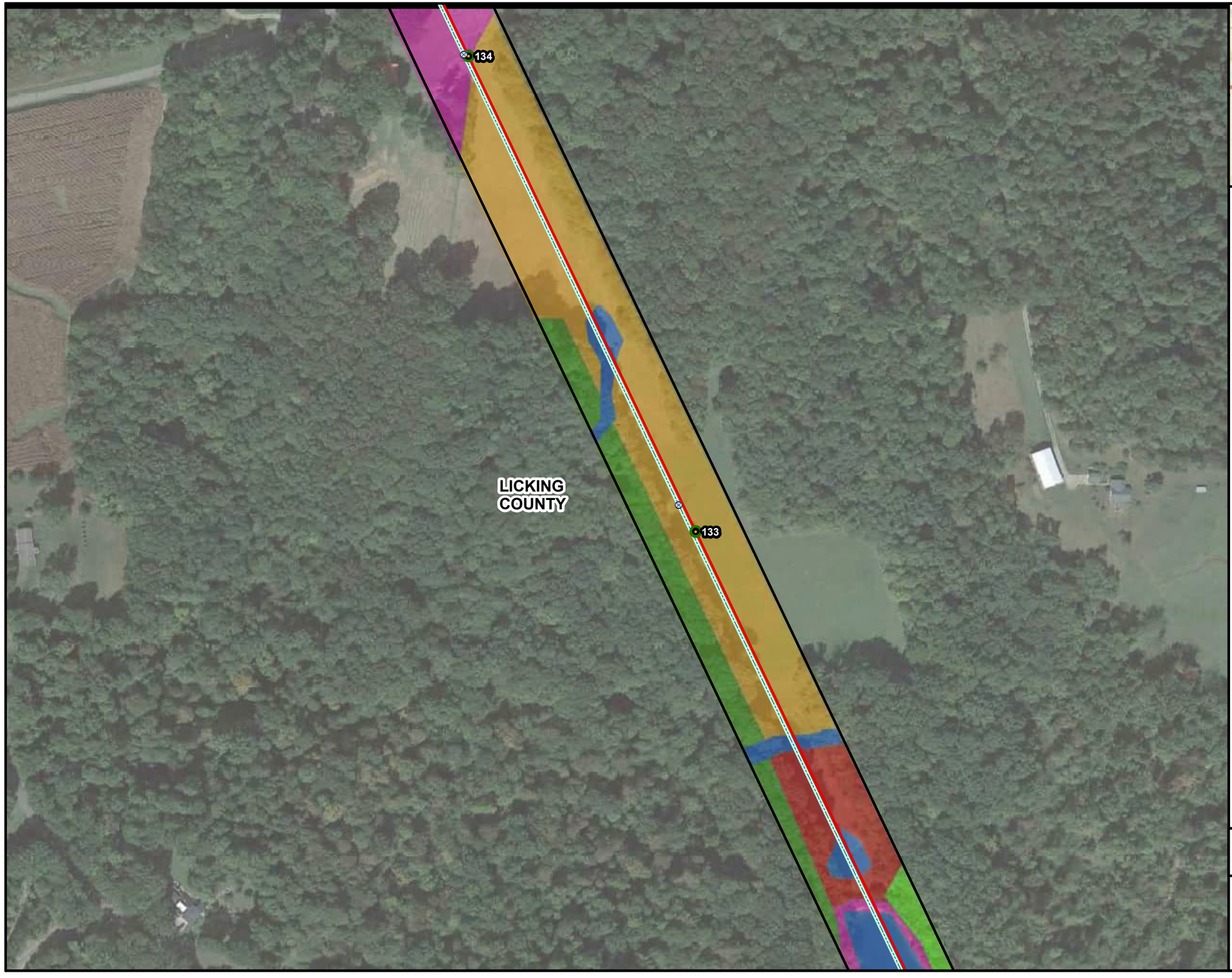

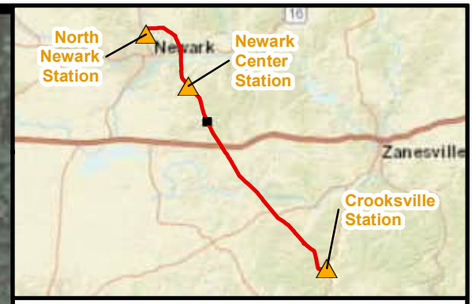

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2J
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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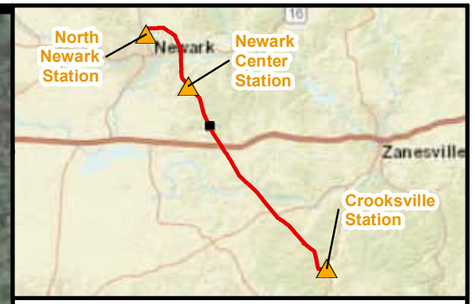

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2K
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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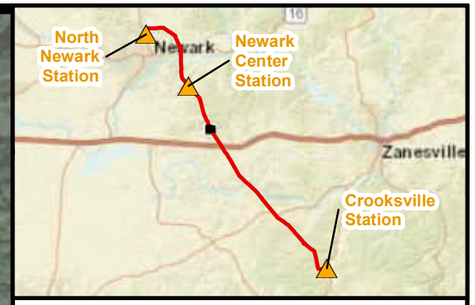

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2L
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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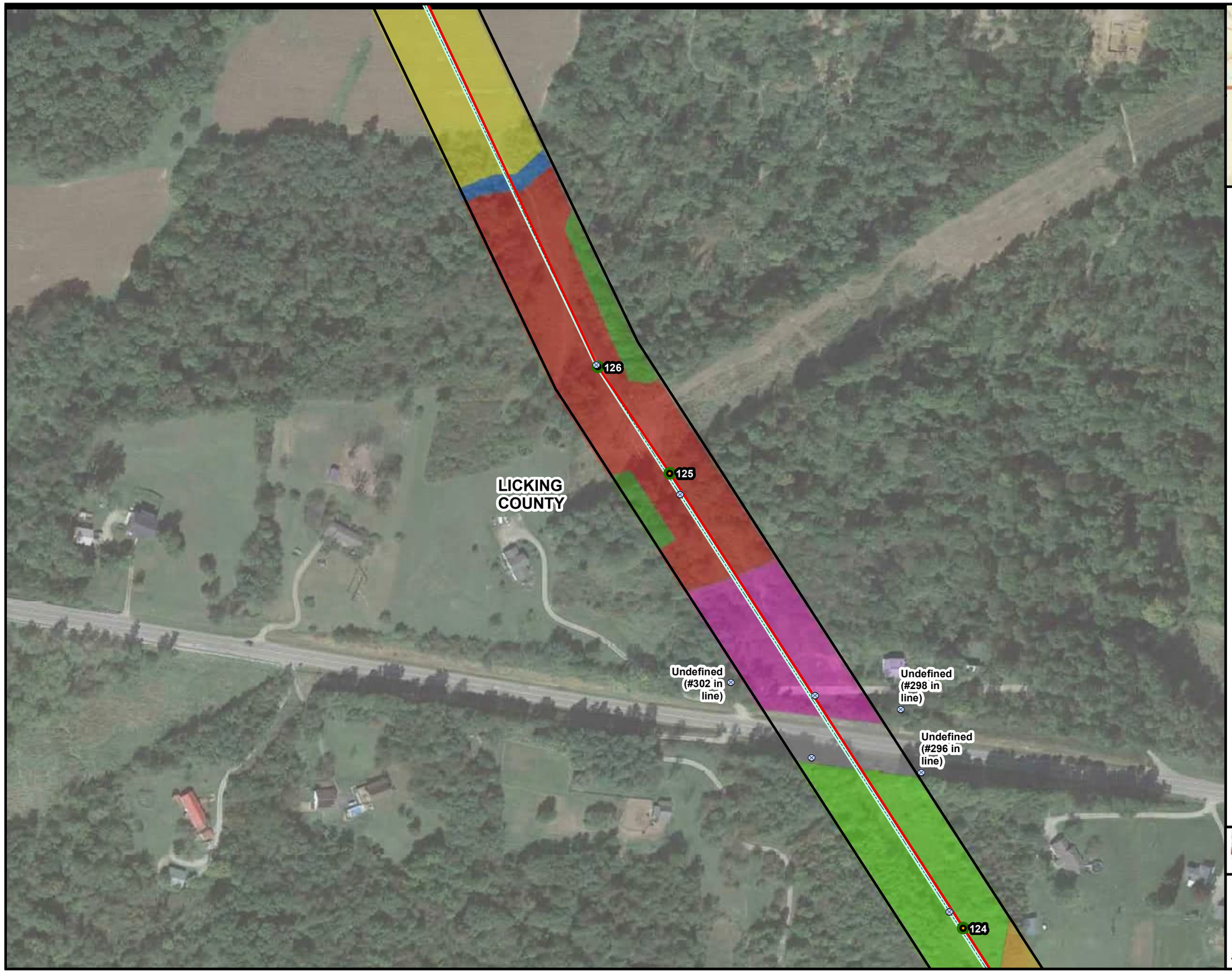

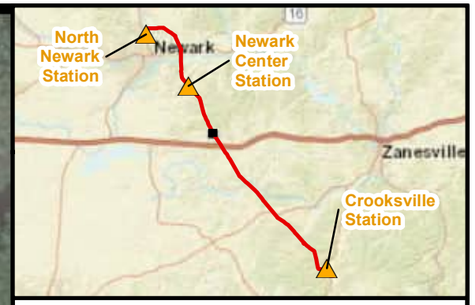

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2M
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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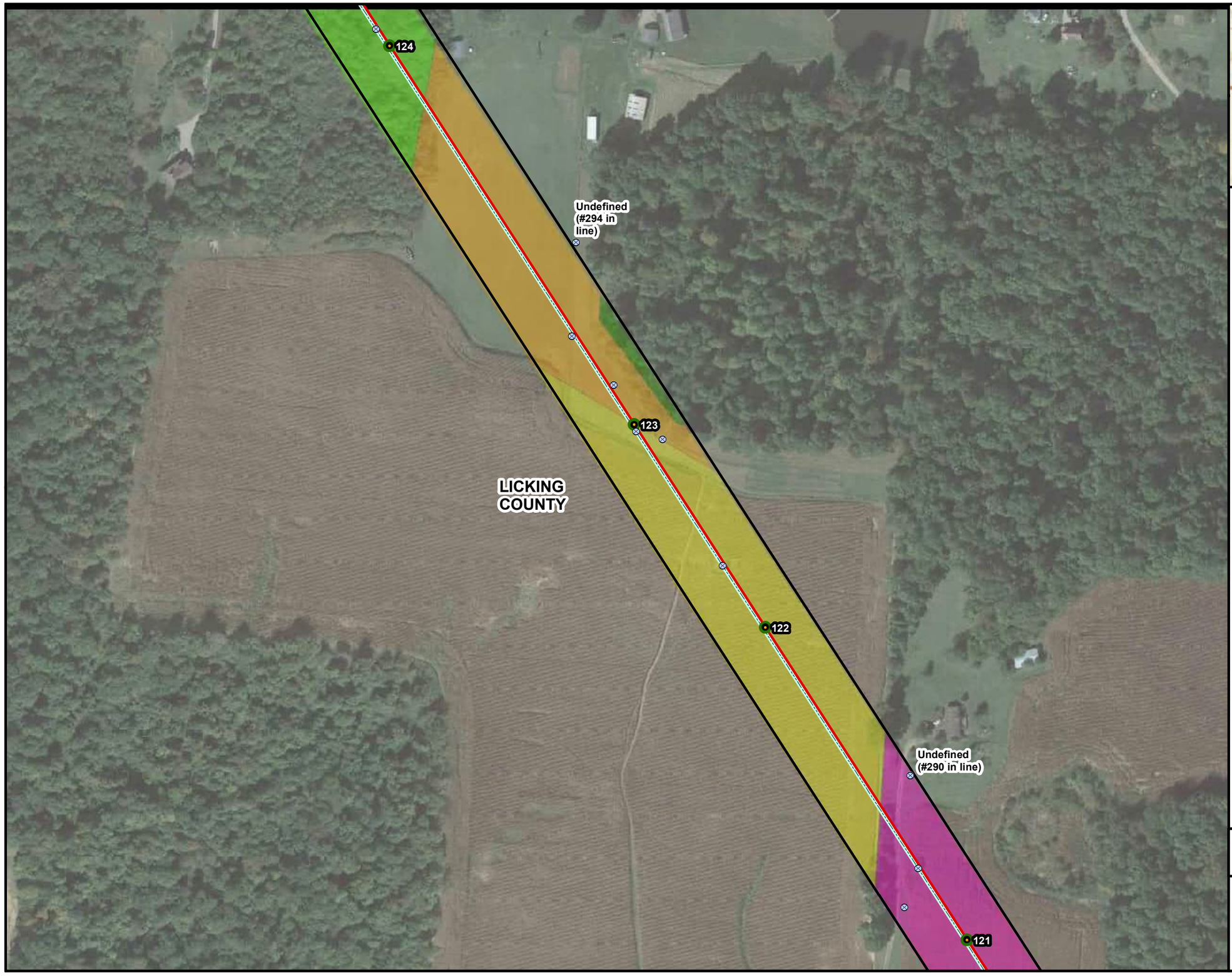

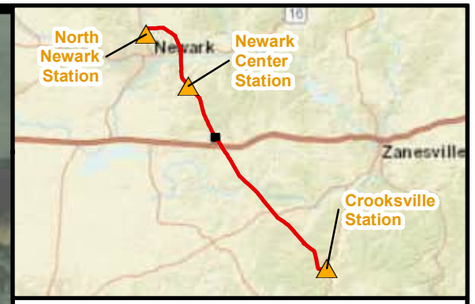

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Shrub/Scrub

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2N
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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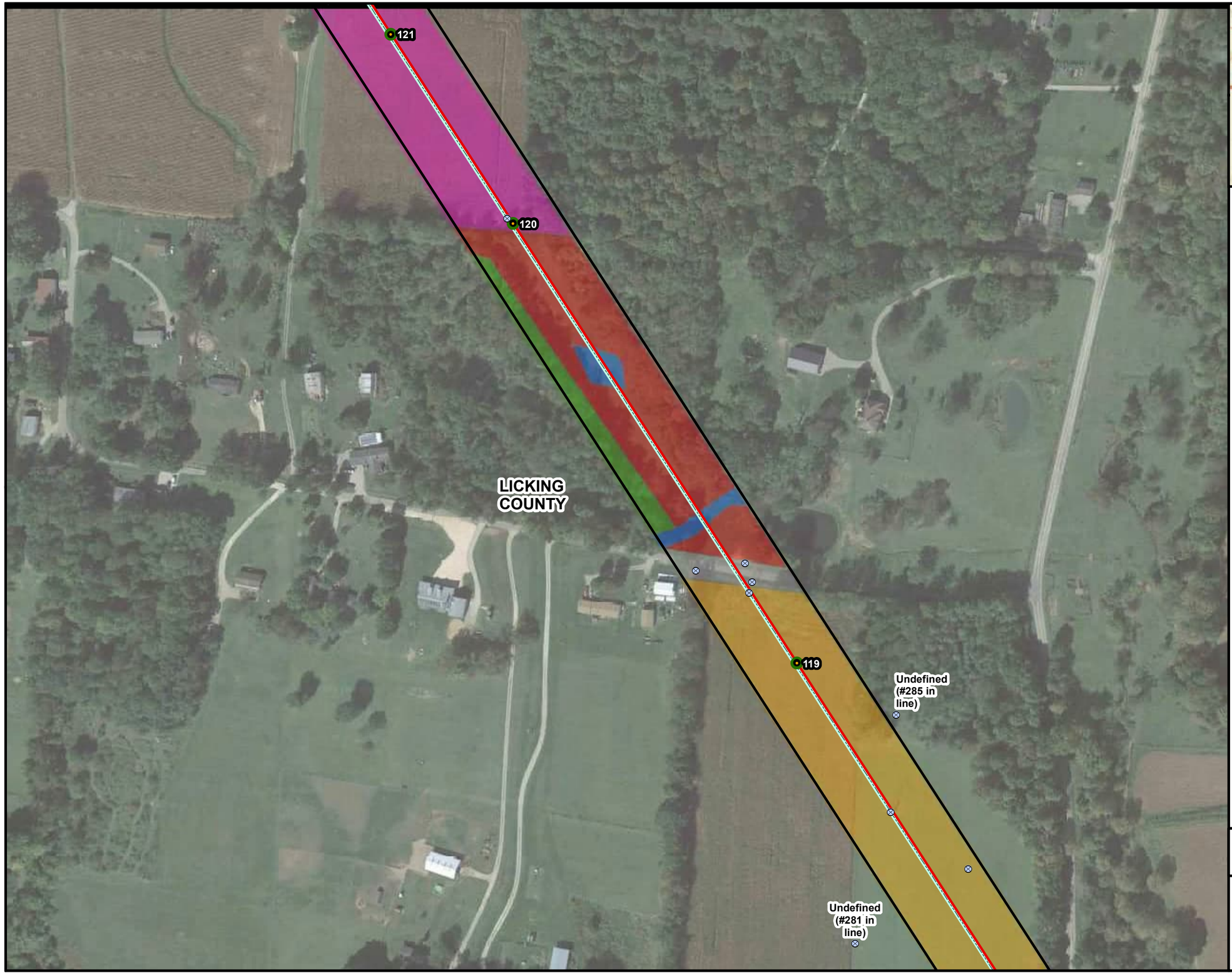

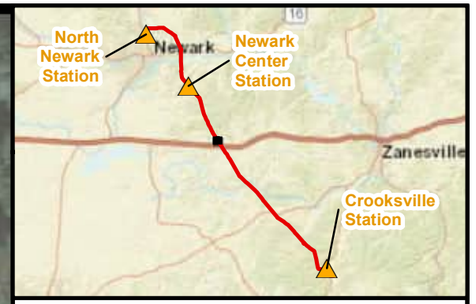

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2O
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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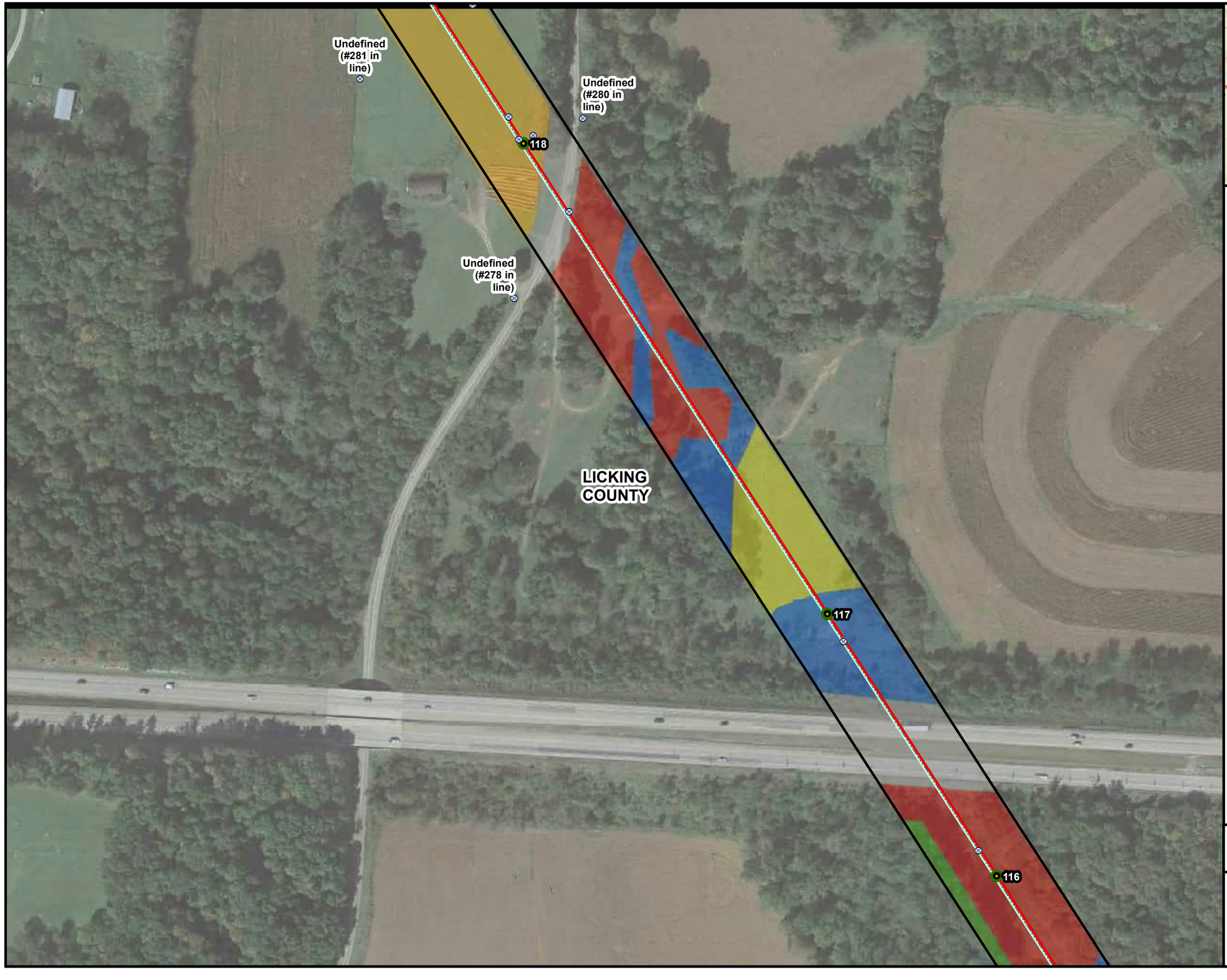

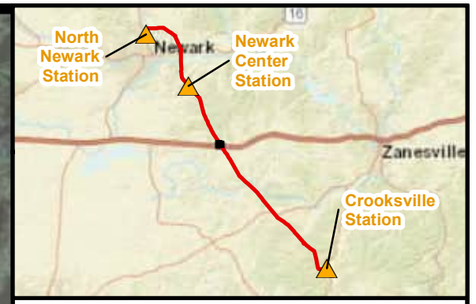

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2P
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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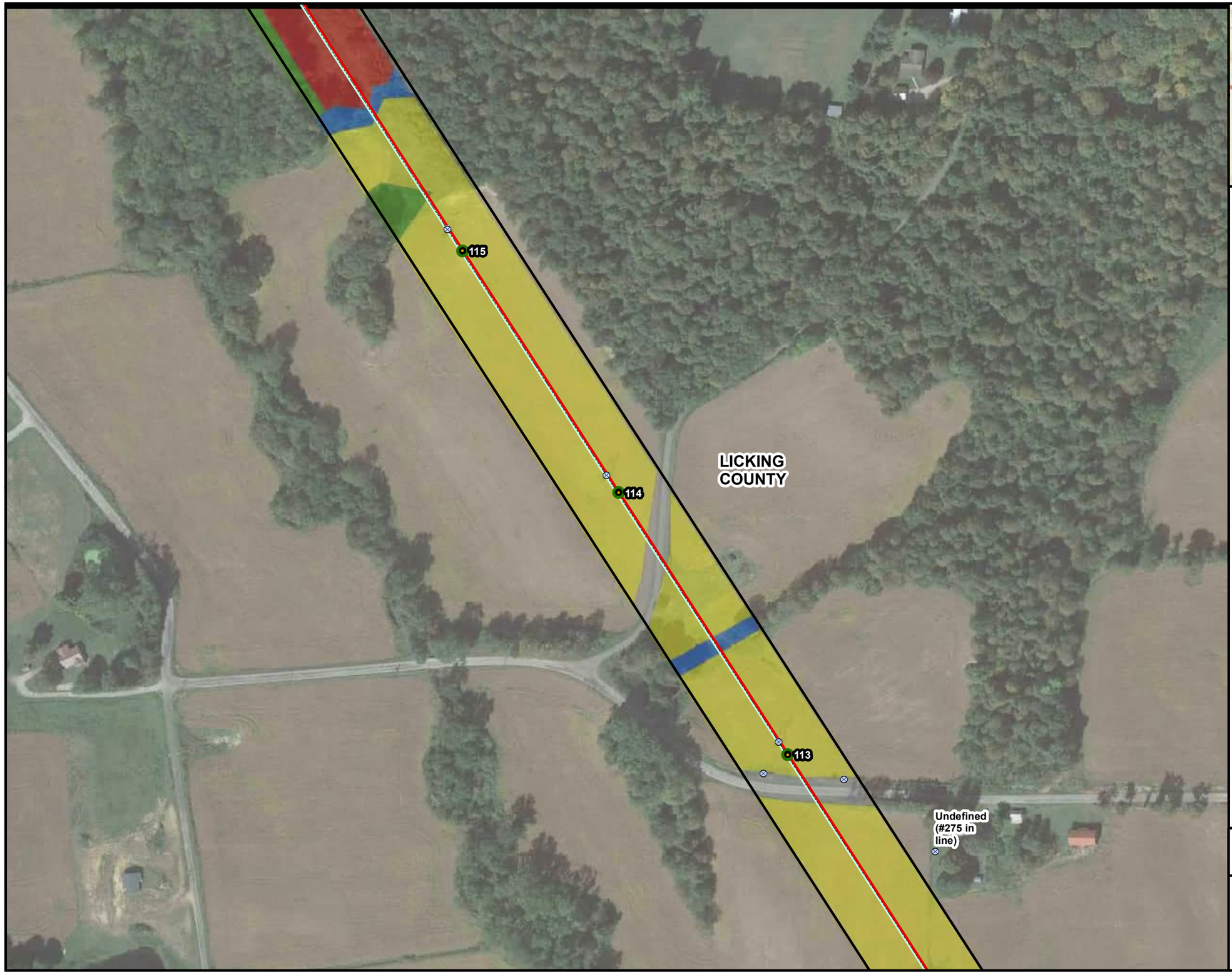

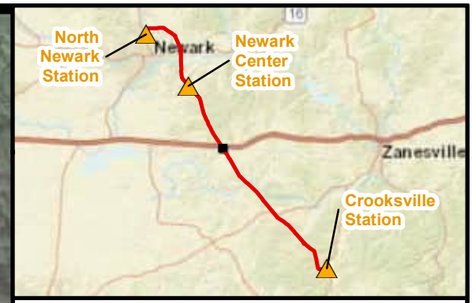

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2Q
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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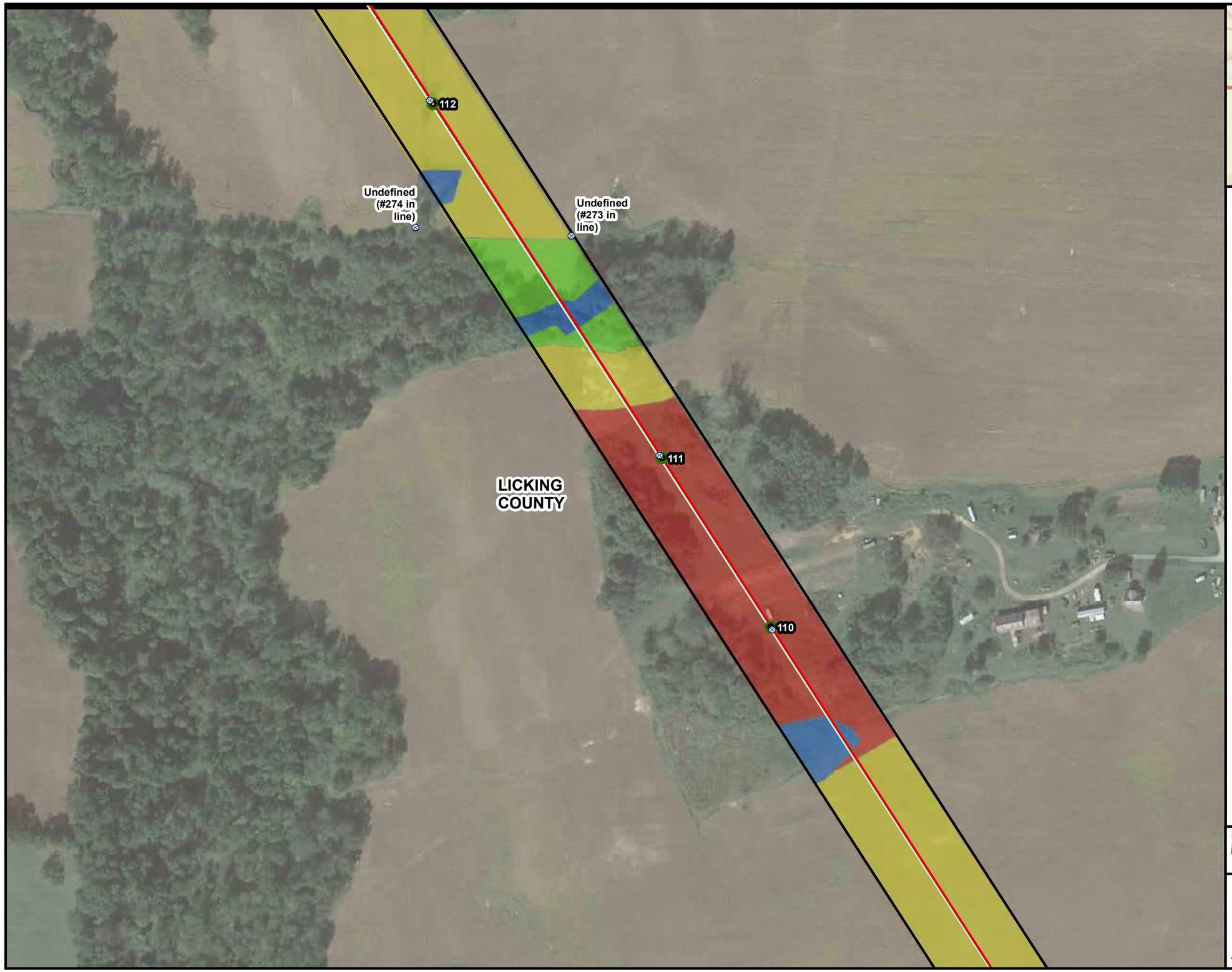

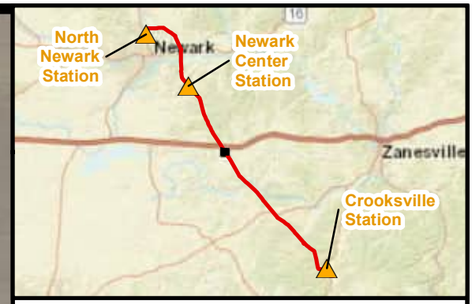

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2R
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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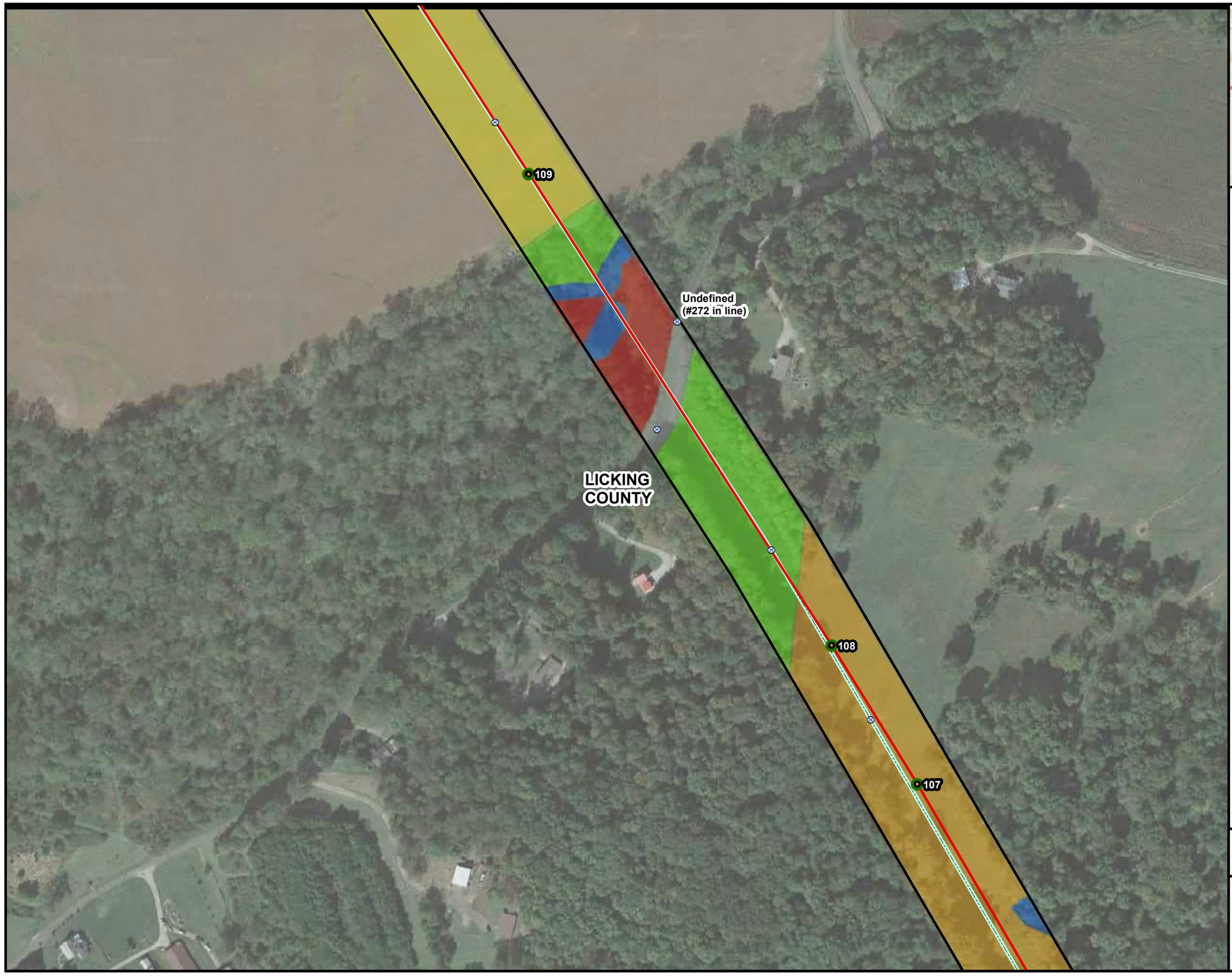

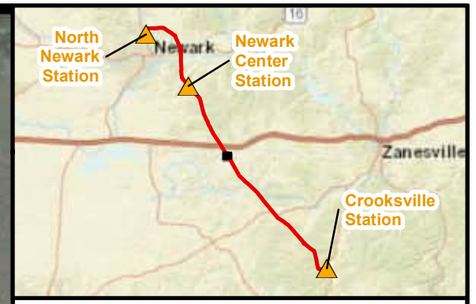

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2S
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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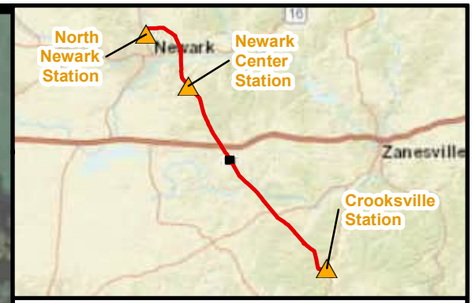

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2T
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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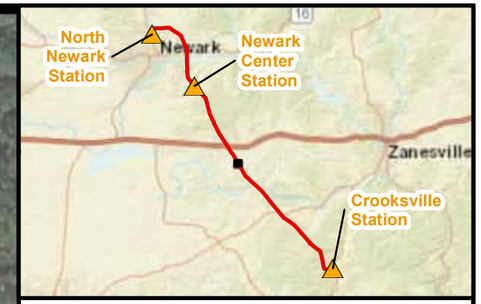
LICKING COUNTY

PERRY COUNTY

104

103



LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2U
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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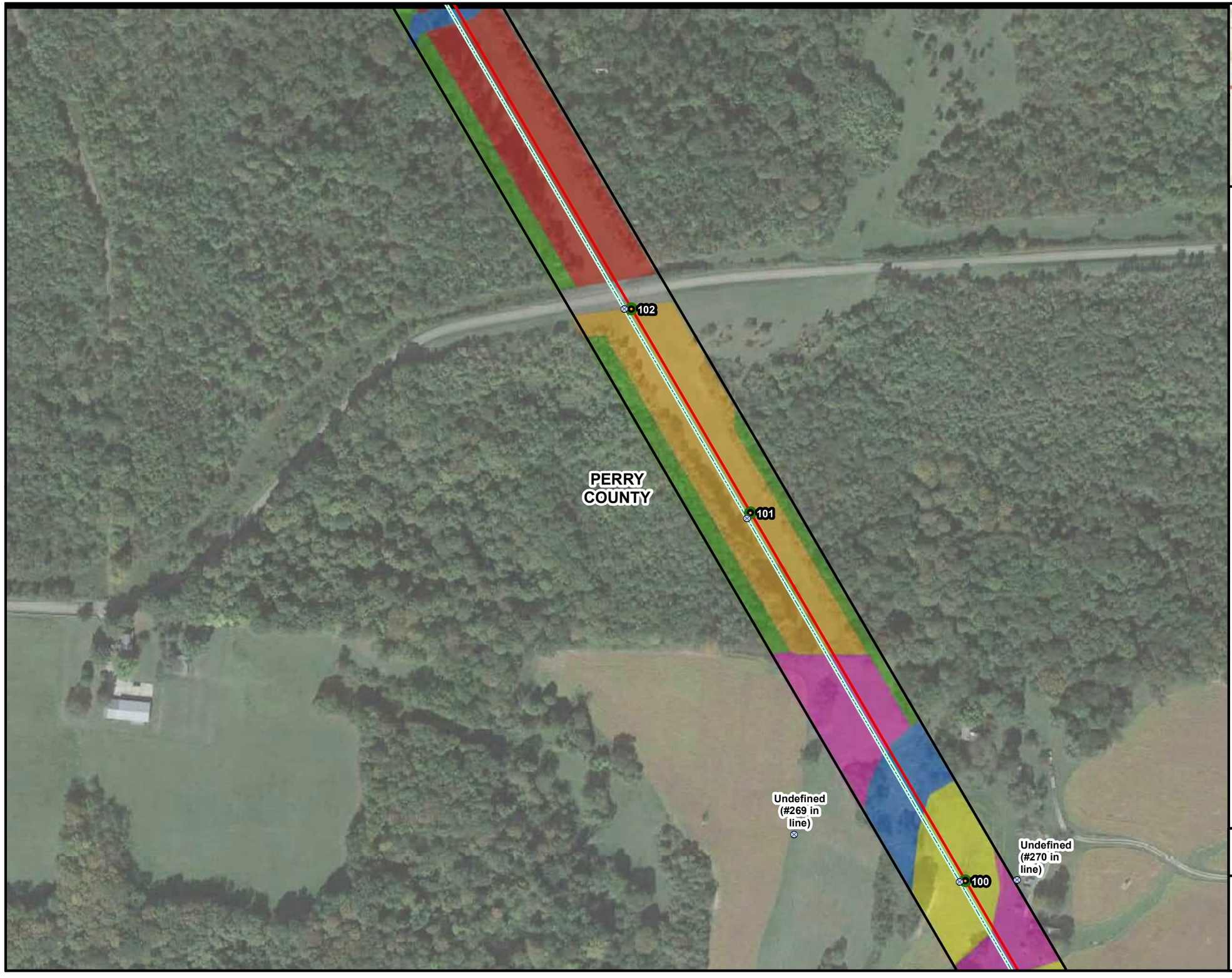
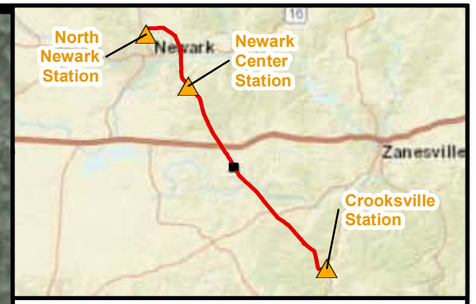




LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

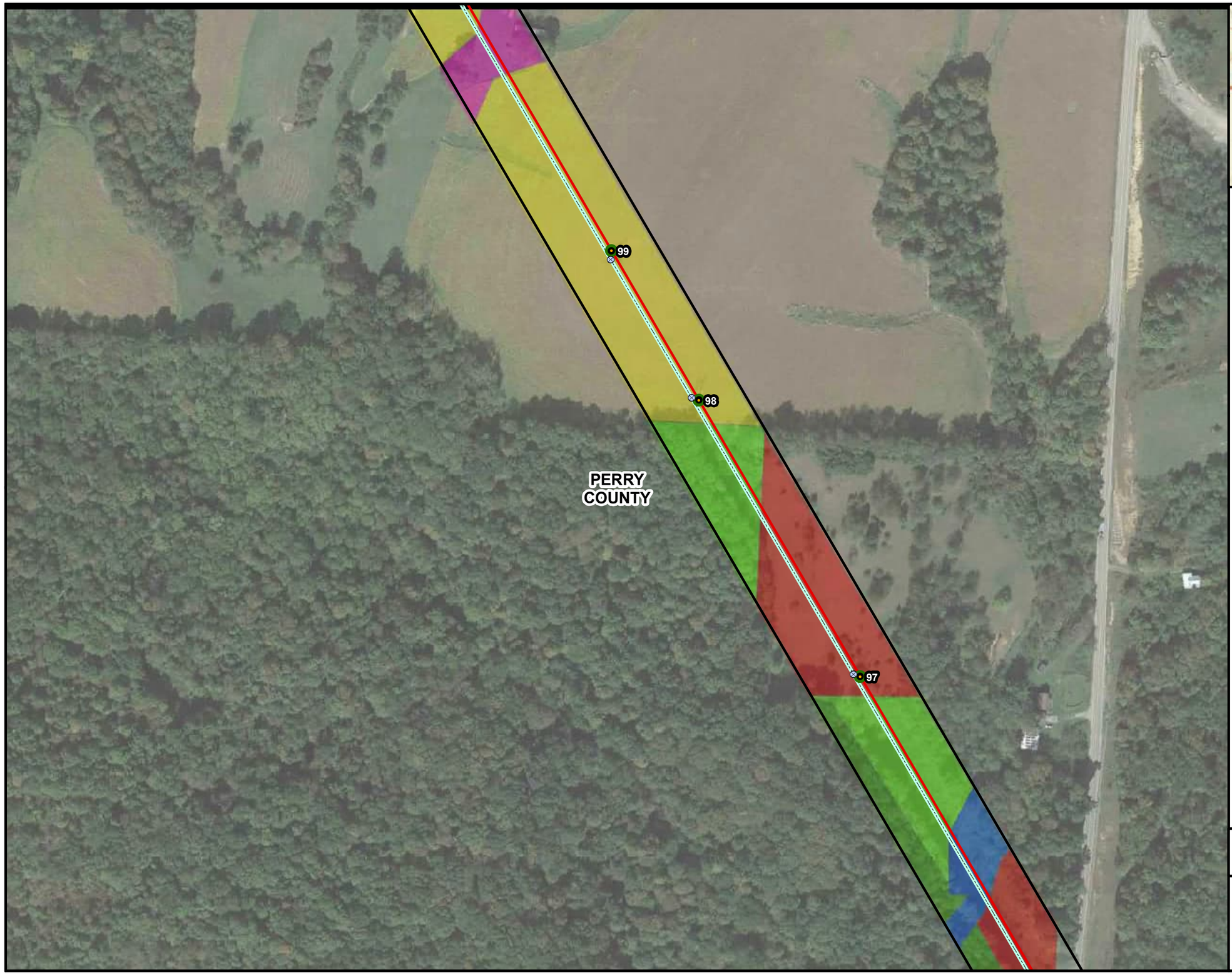
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

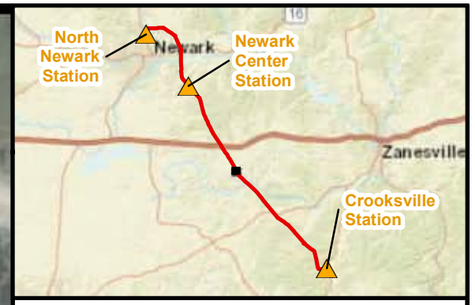
FIGURE 2V
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksabNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2W
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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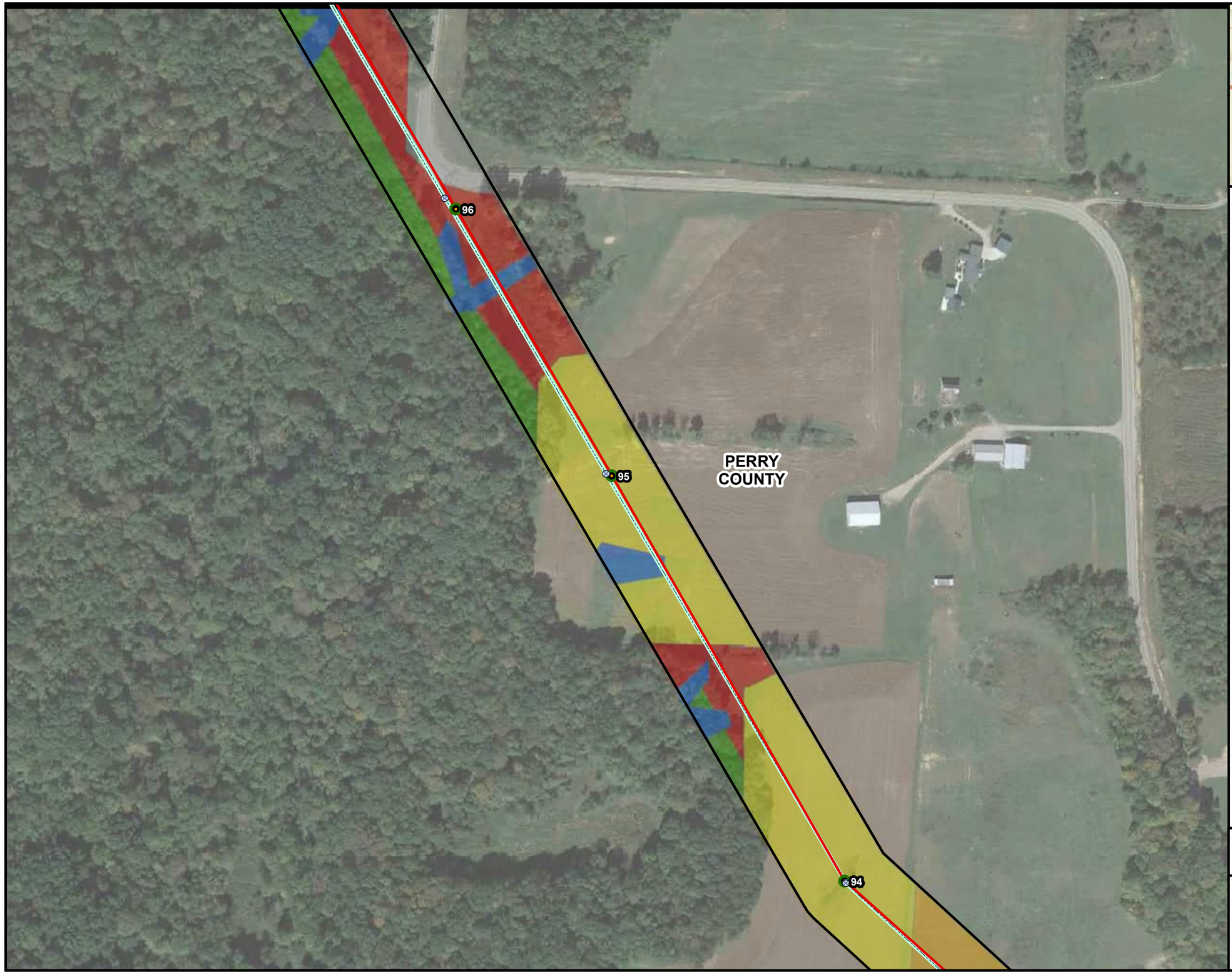

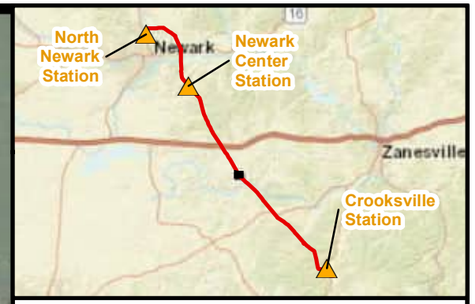

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2X
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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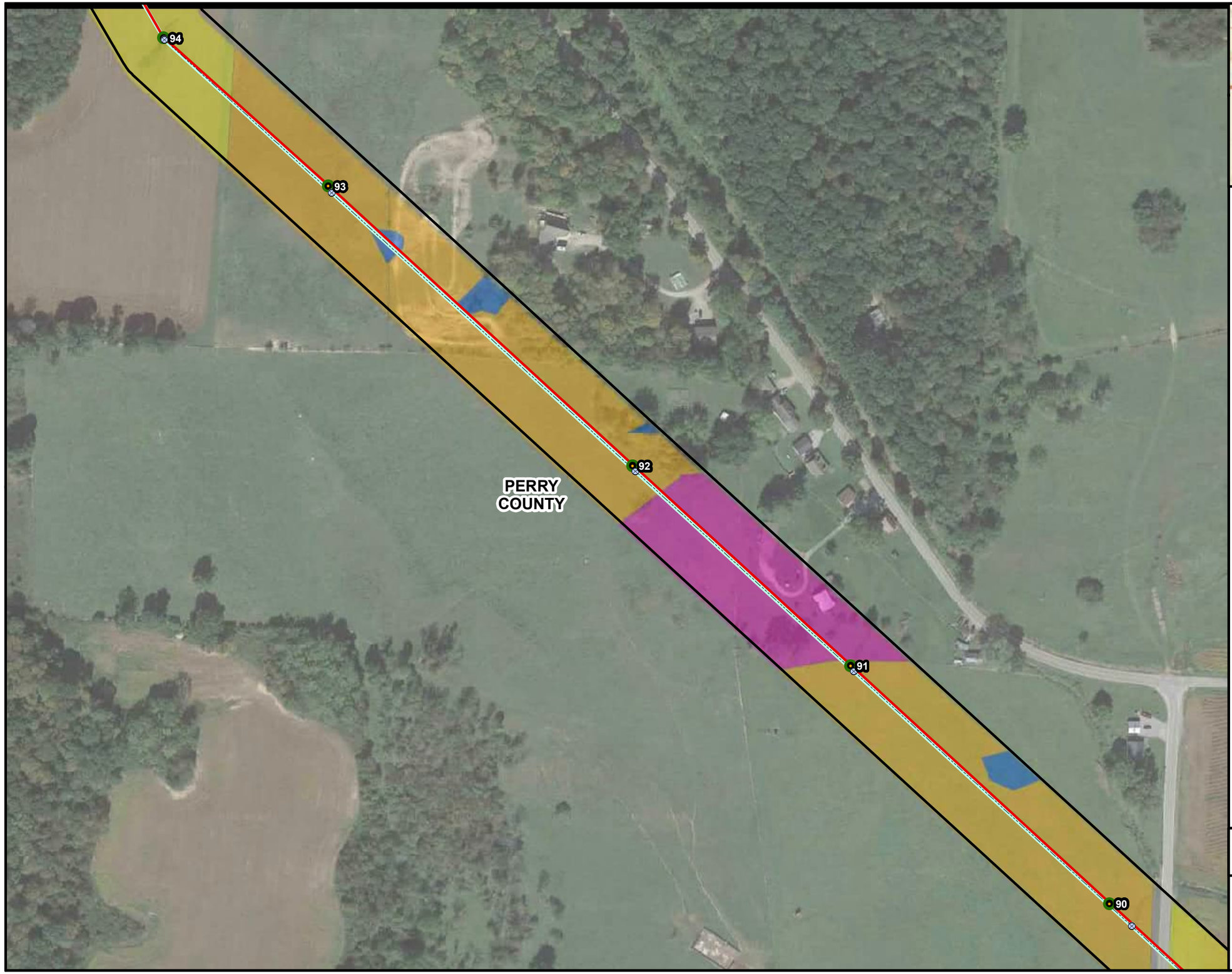

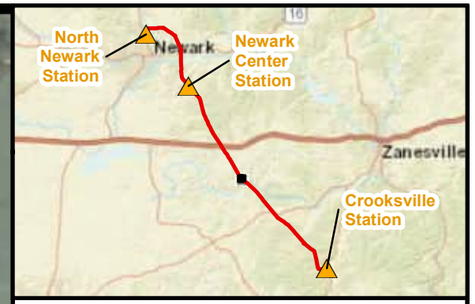

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Hay Field/Pasture
- Landscaped Area
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2Y
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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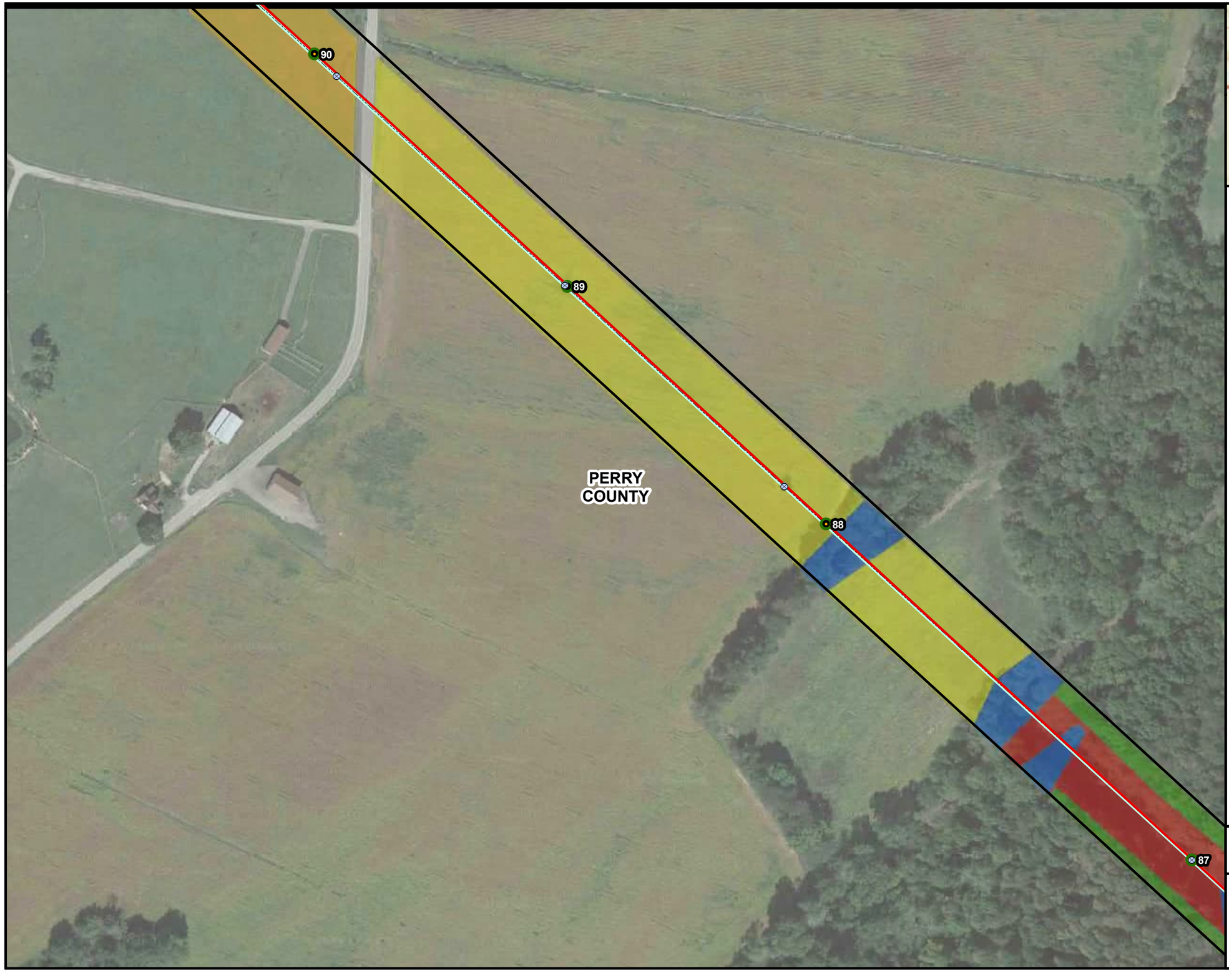

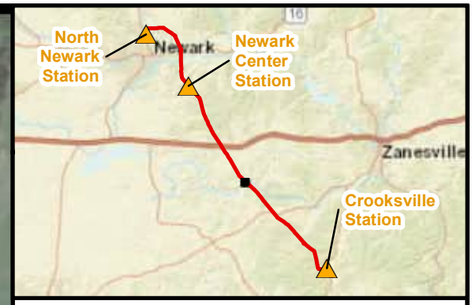

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2Z
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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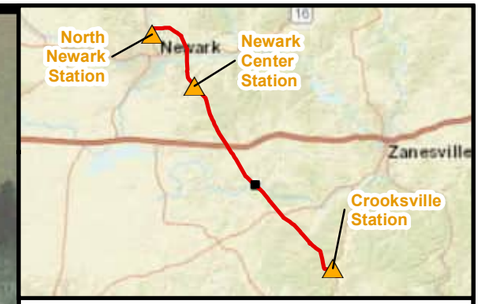

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AA
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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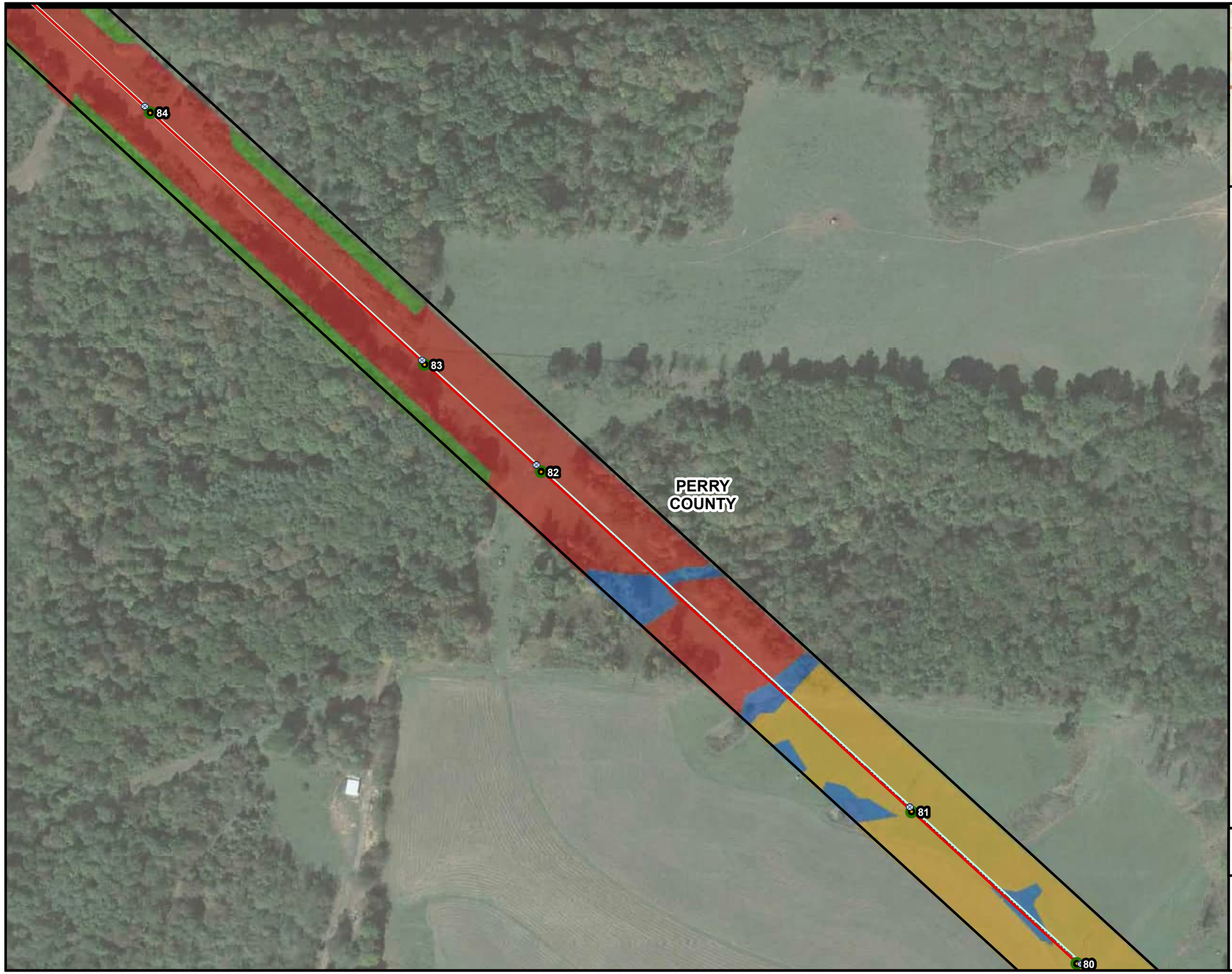

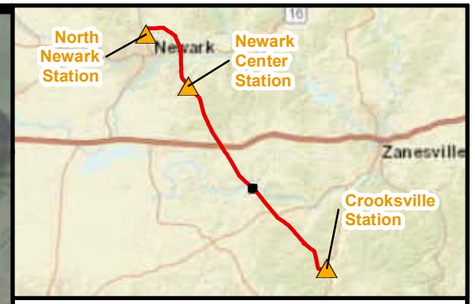

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AB
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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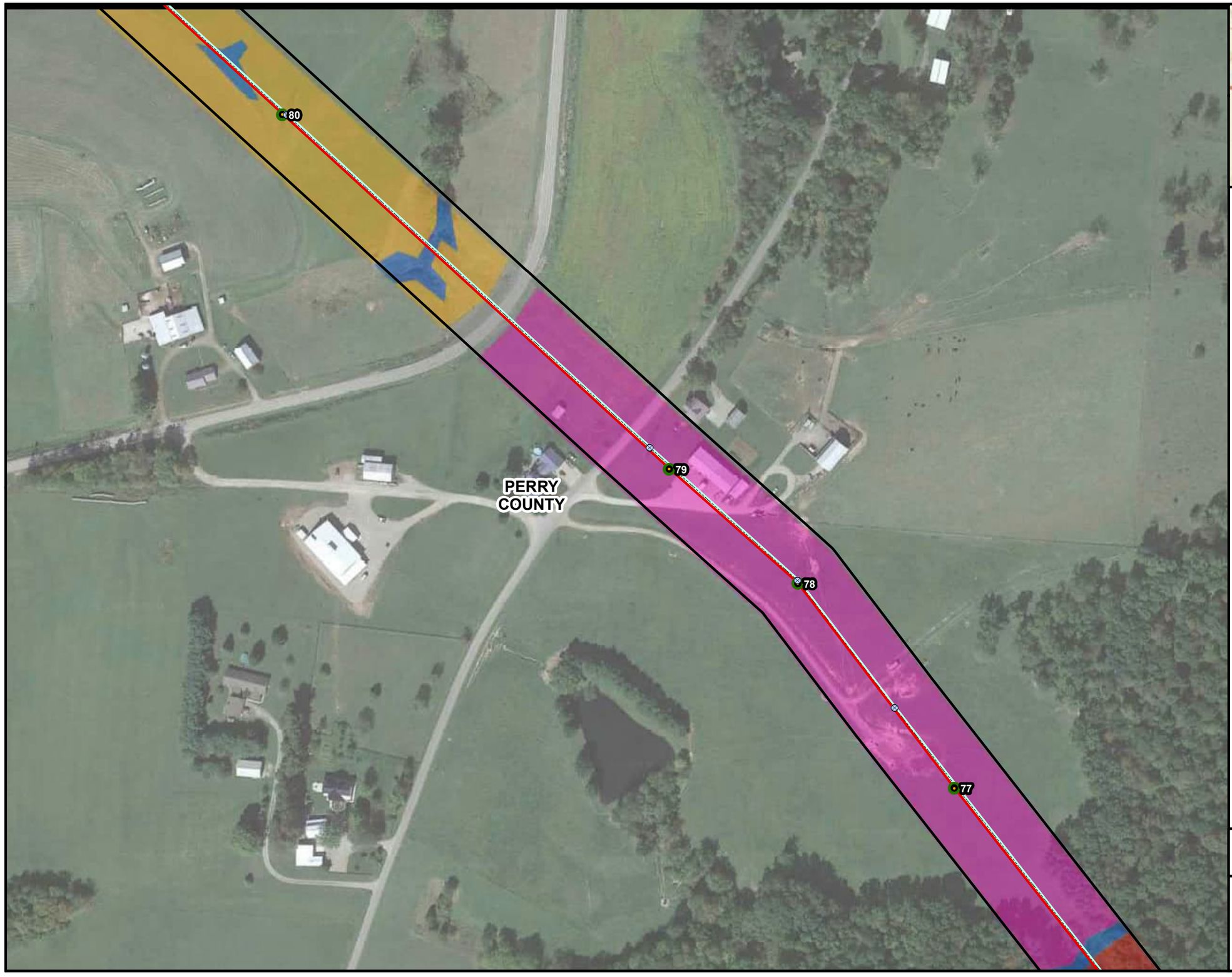

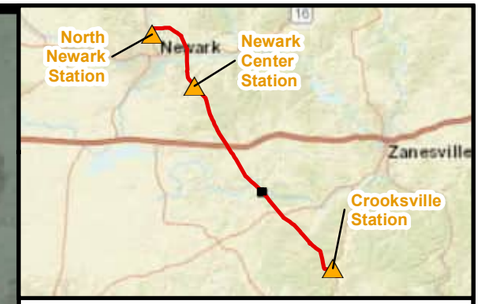

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AC
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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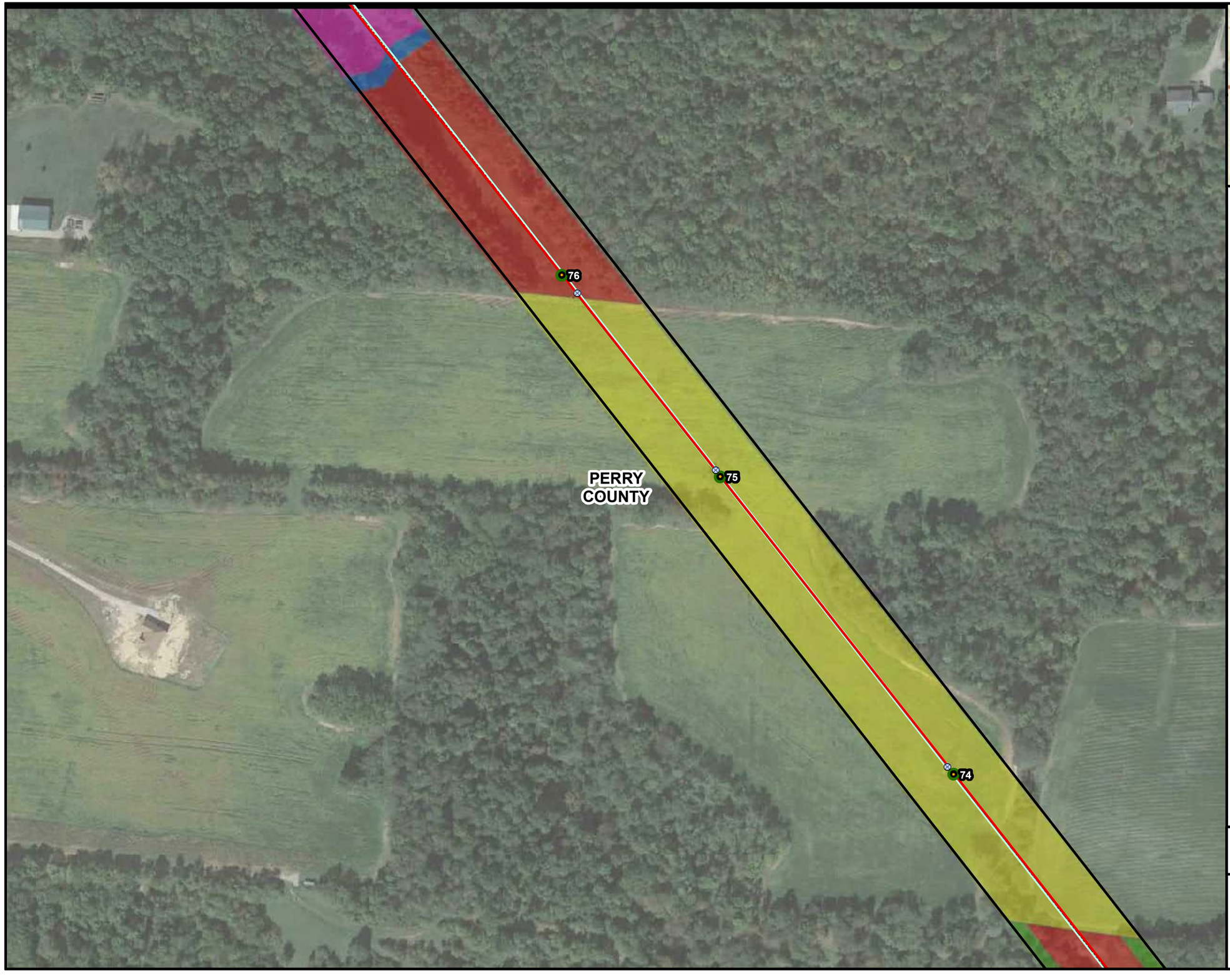

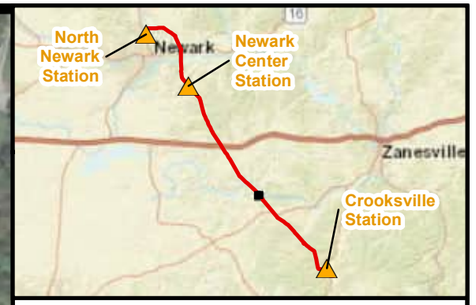

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AD
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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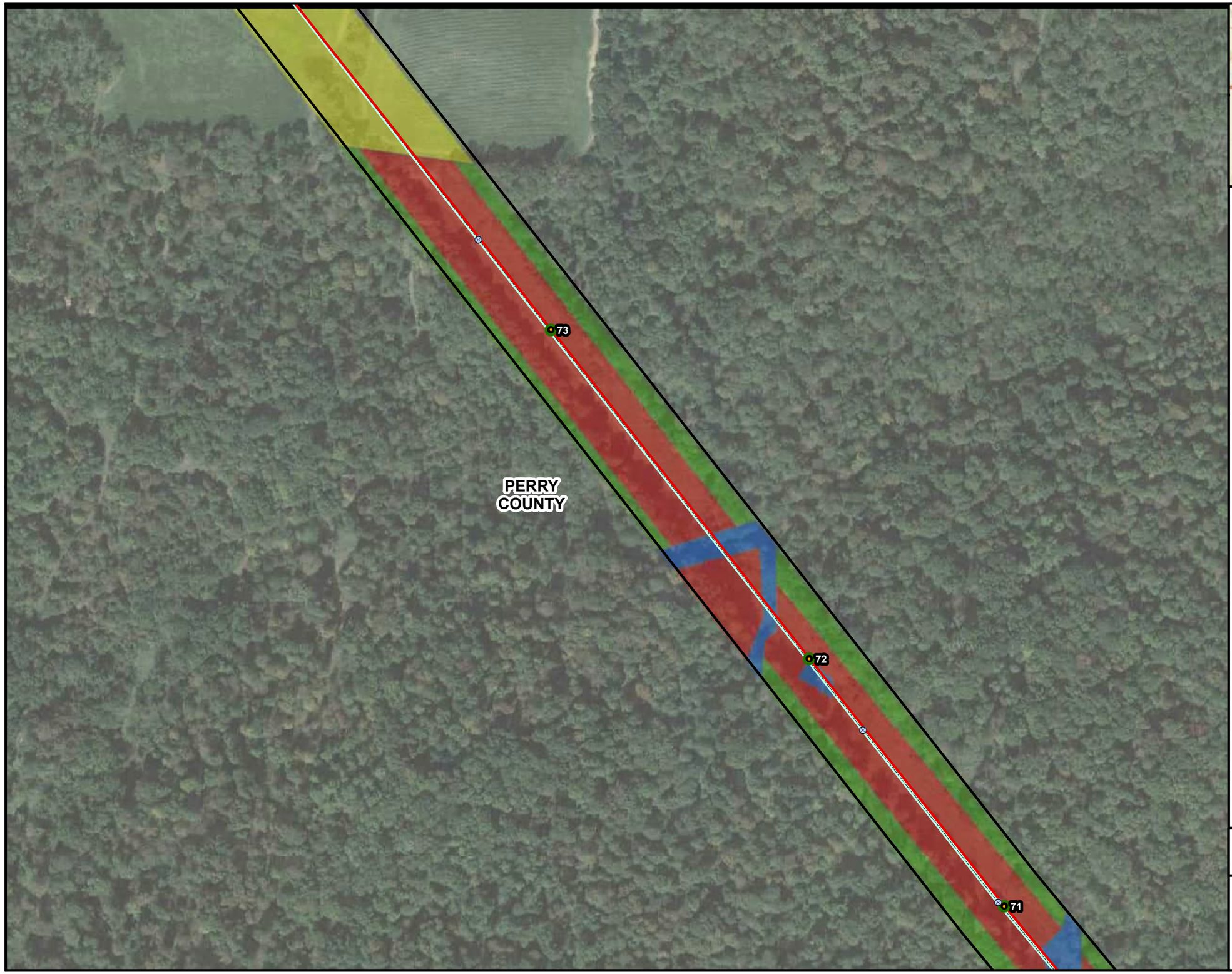

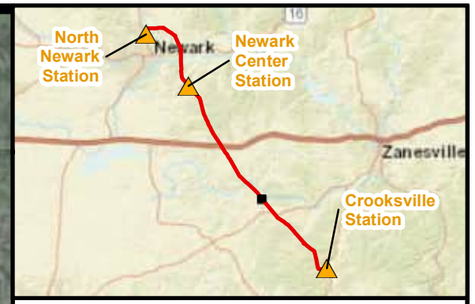

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AE
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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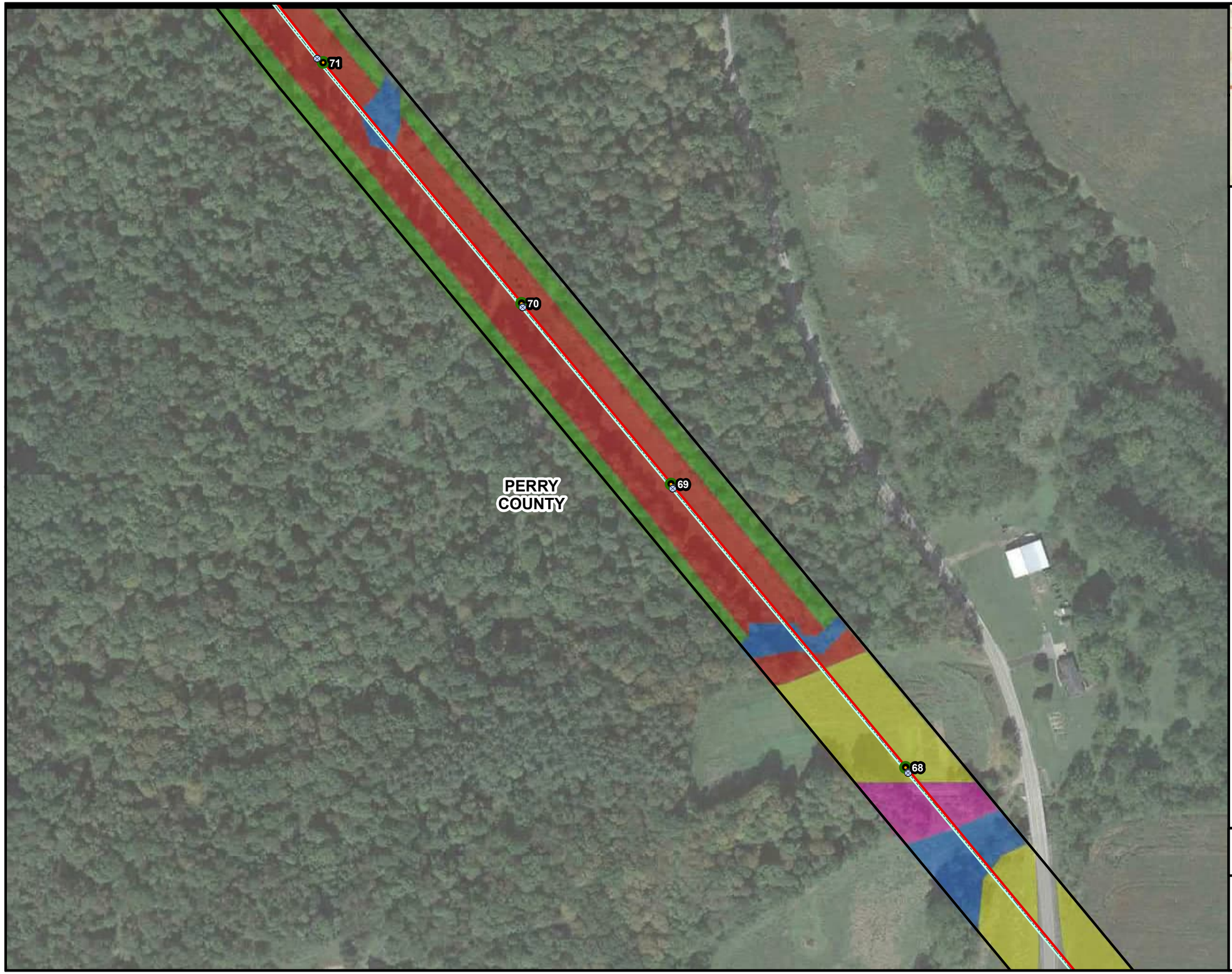

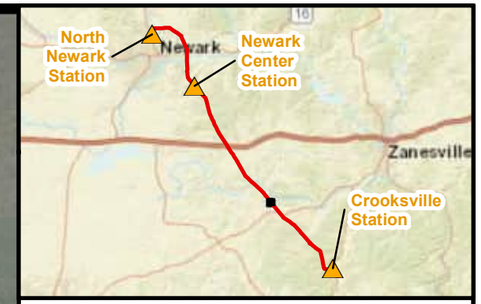

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AF
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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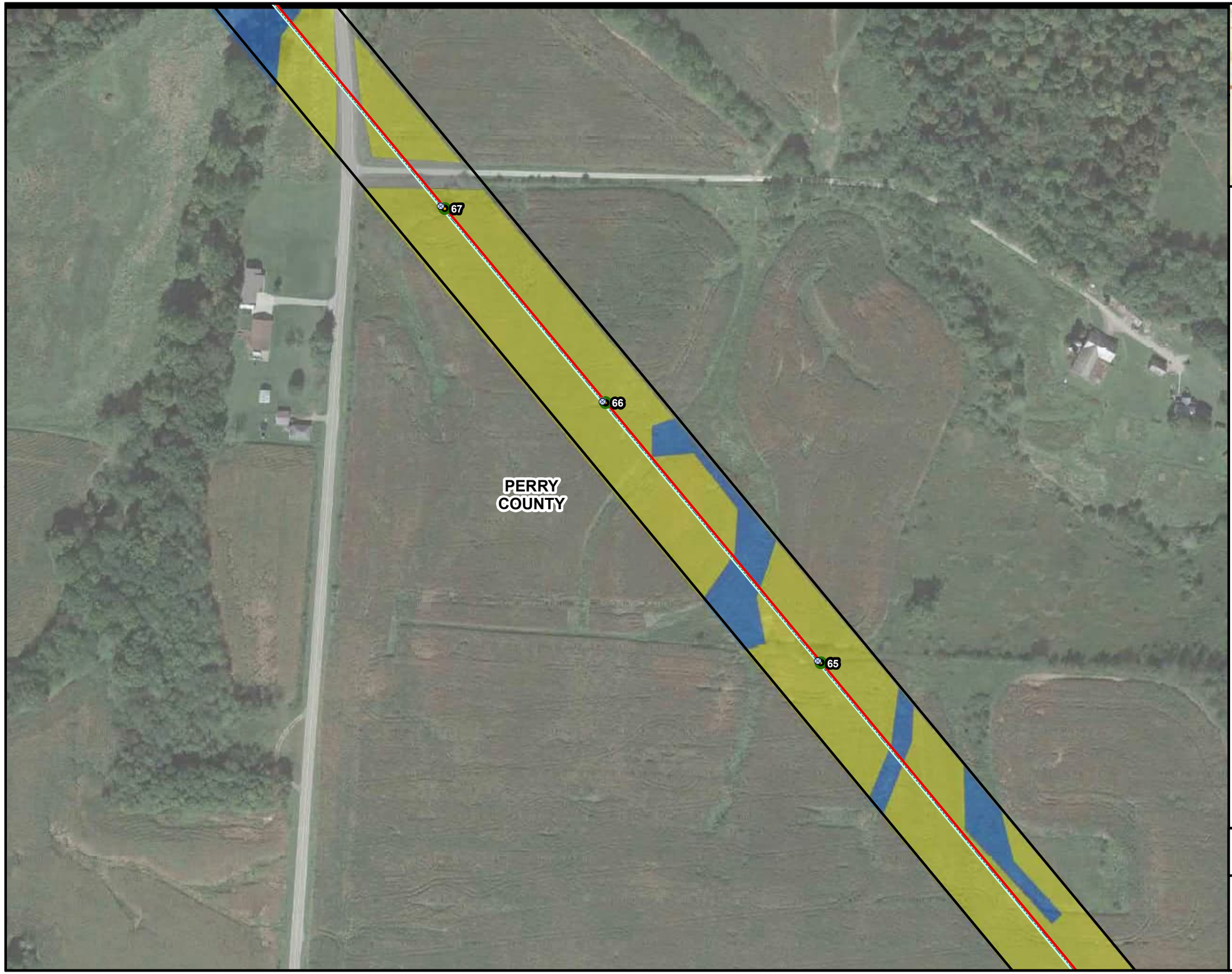

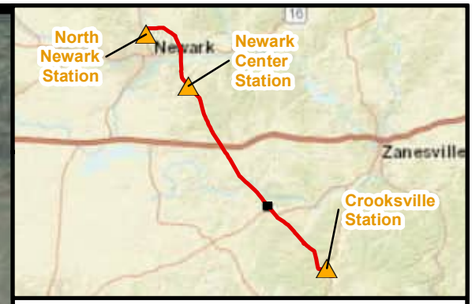

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AG
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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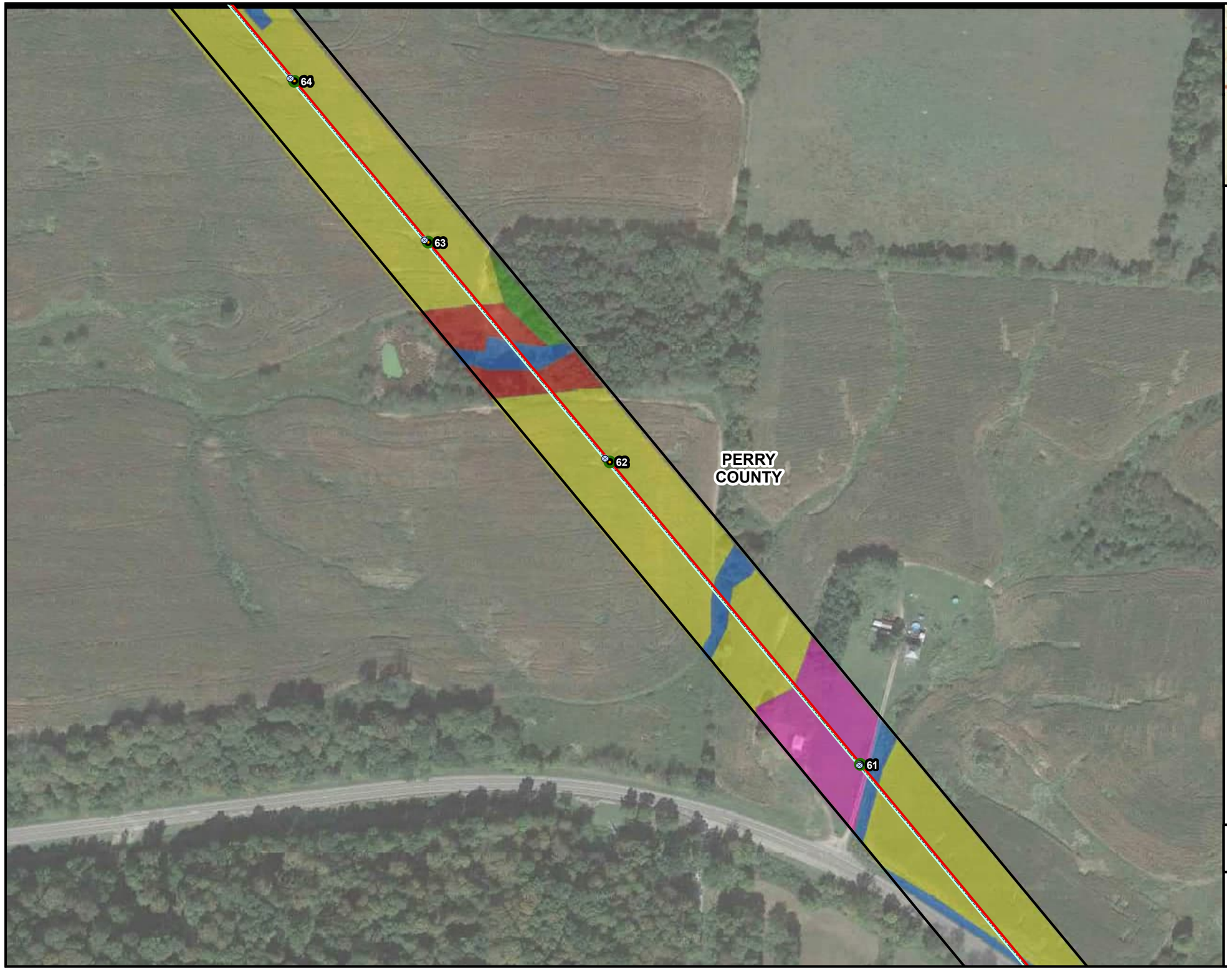

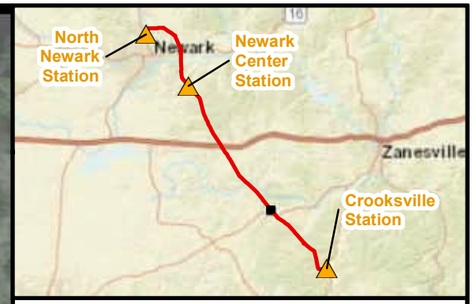

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AH
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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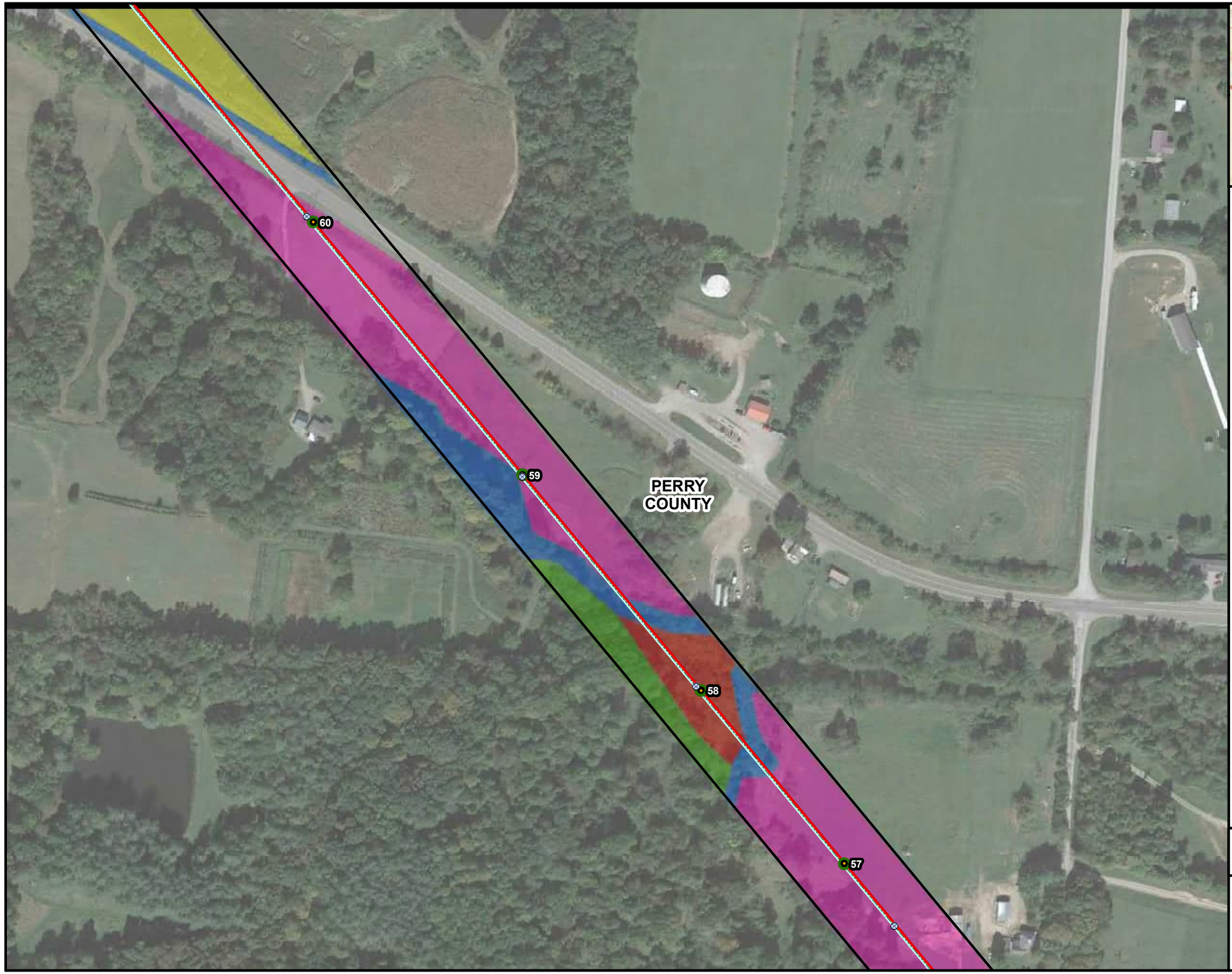

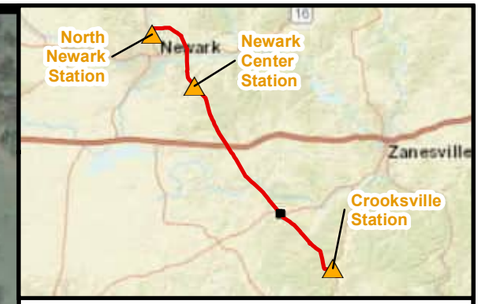

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AI
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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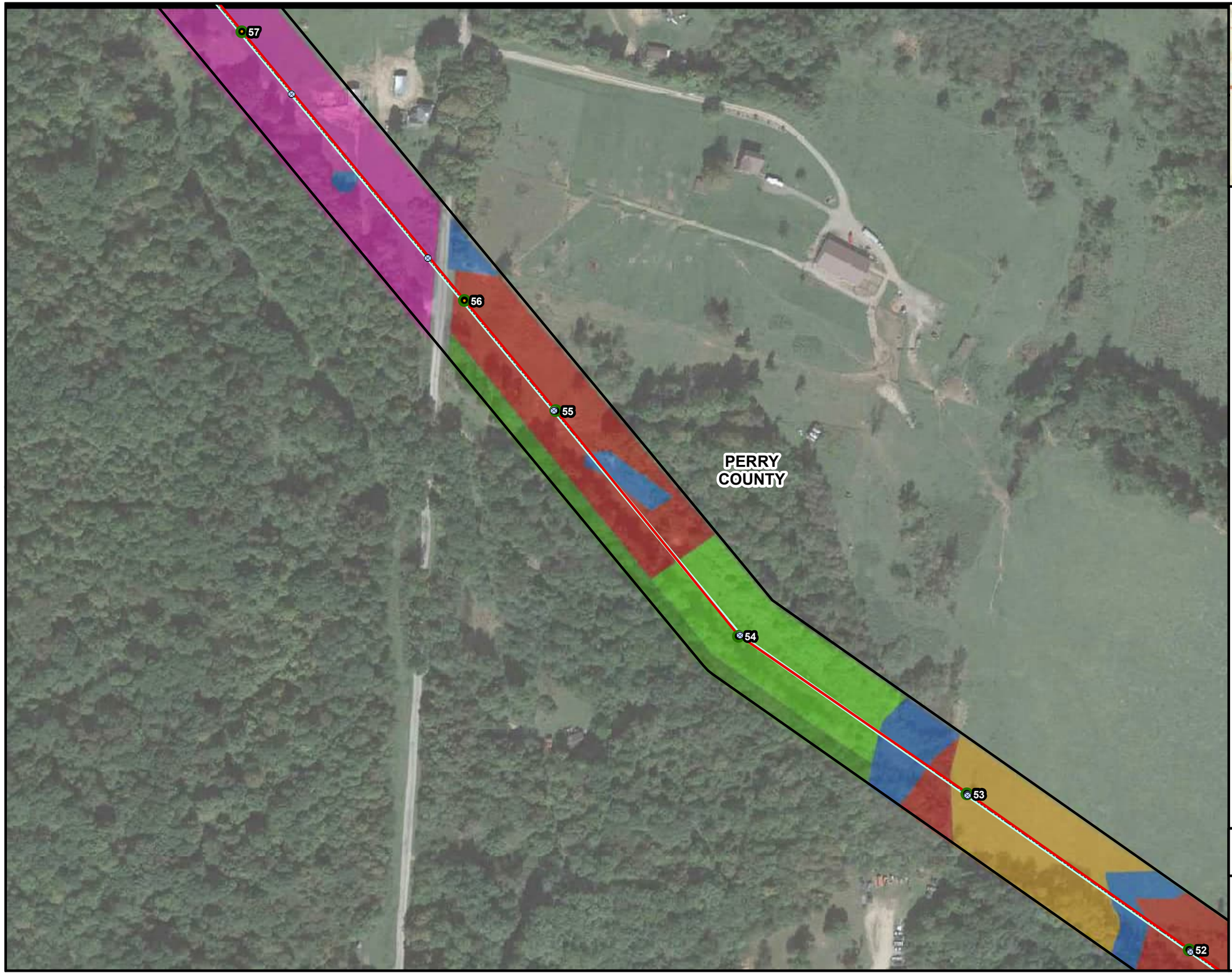

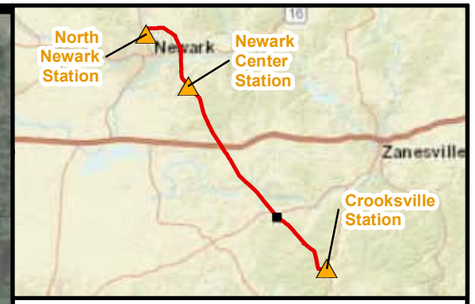

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AJ
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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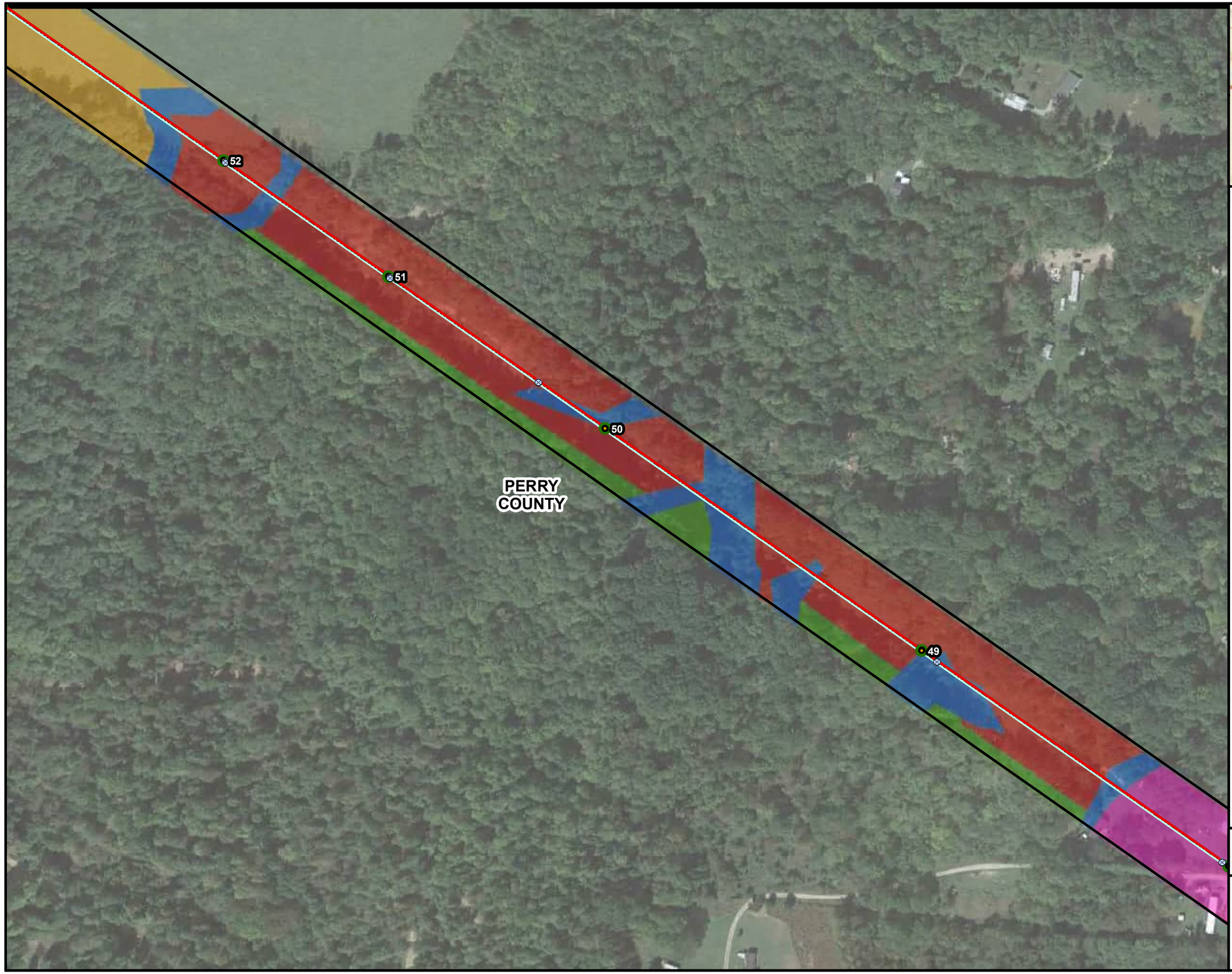

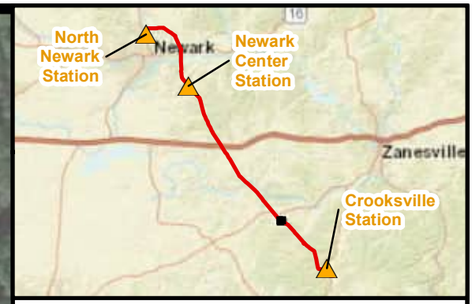

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
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Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AK
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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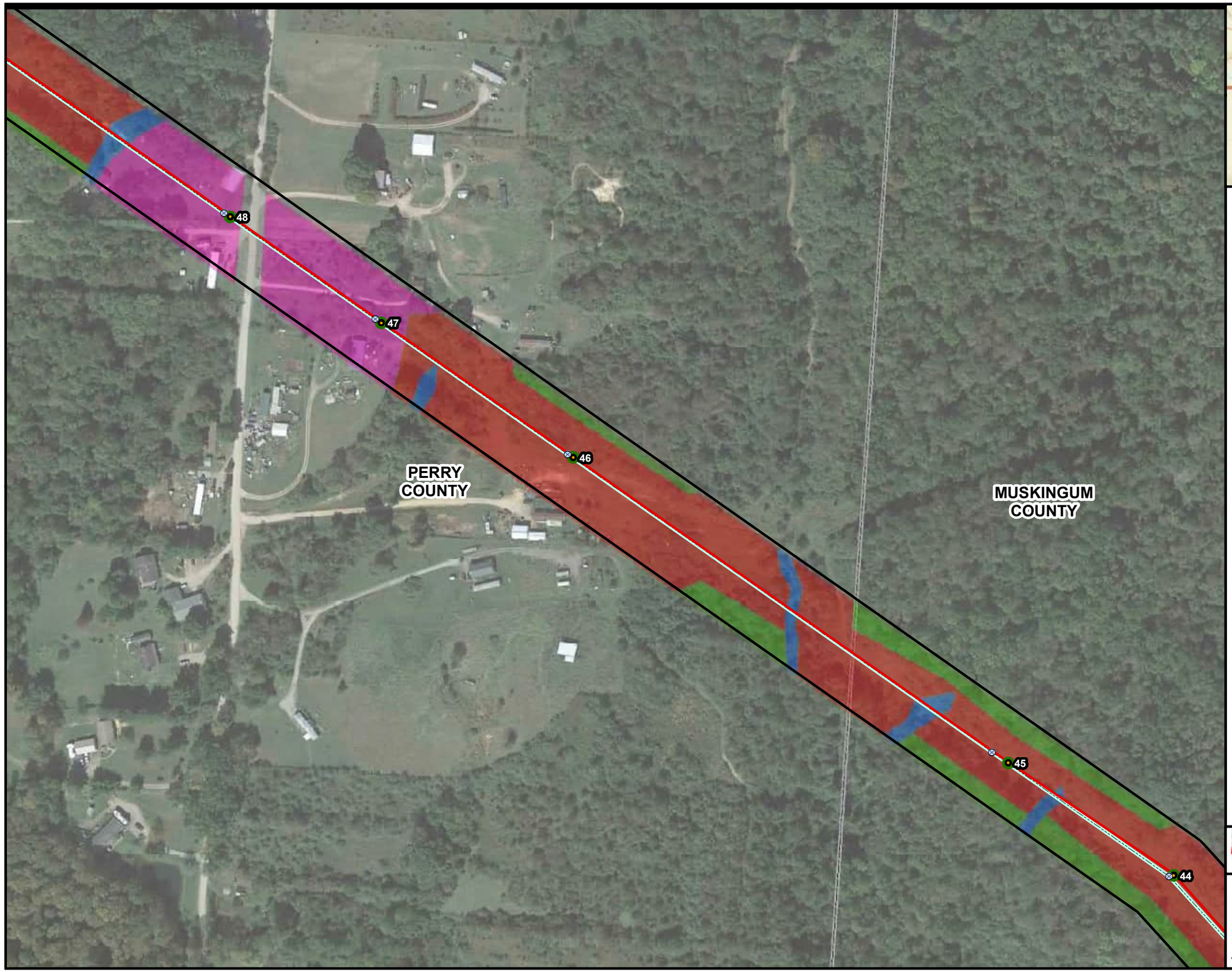

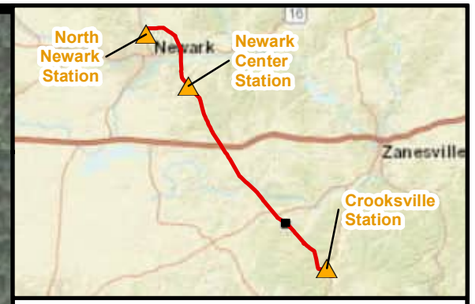

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

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AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AL
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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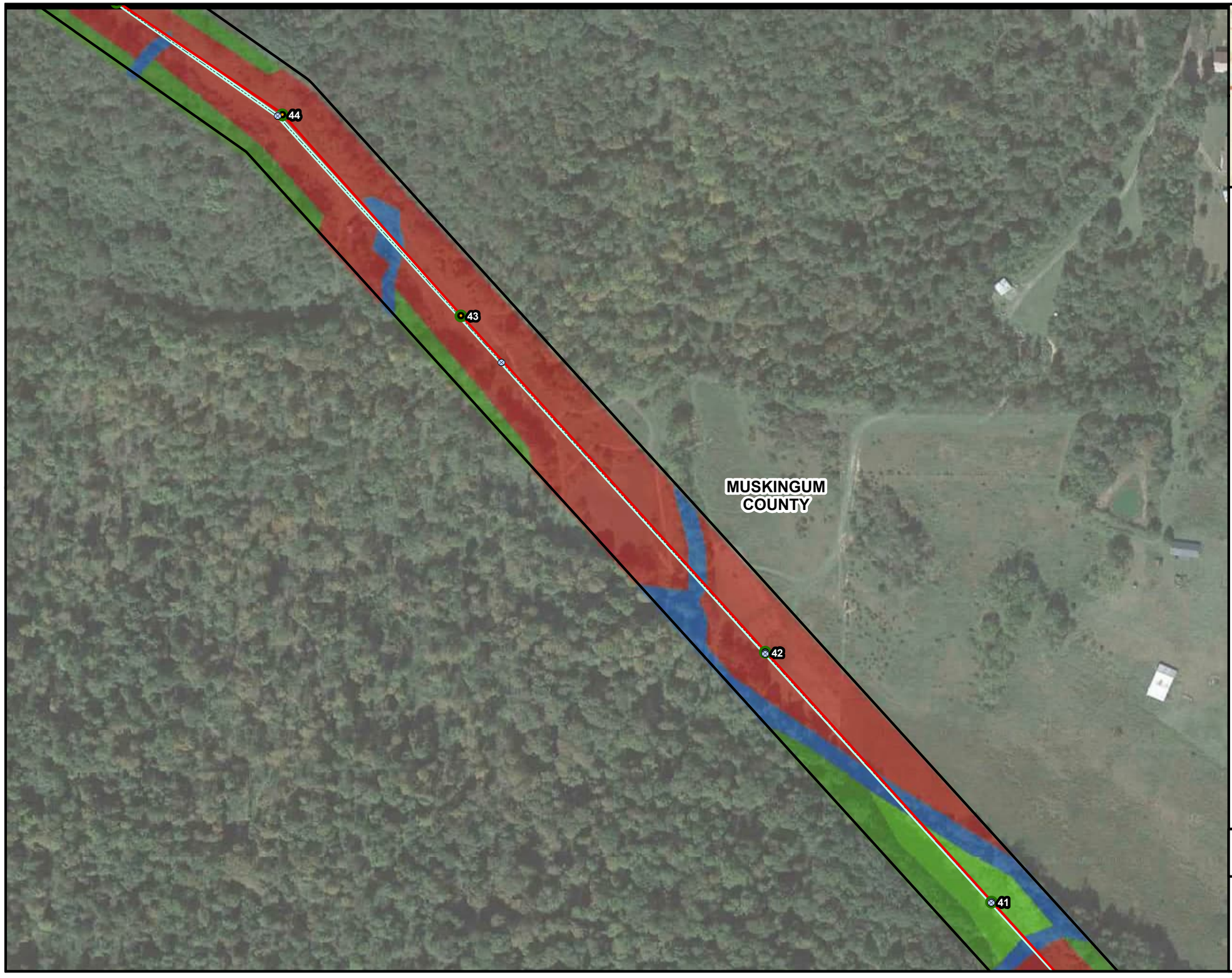

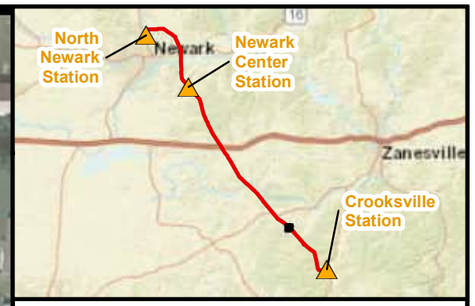

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
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Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AM
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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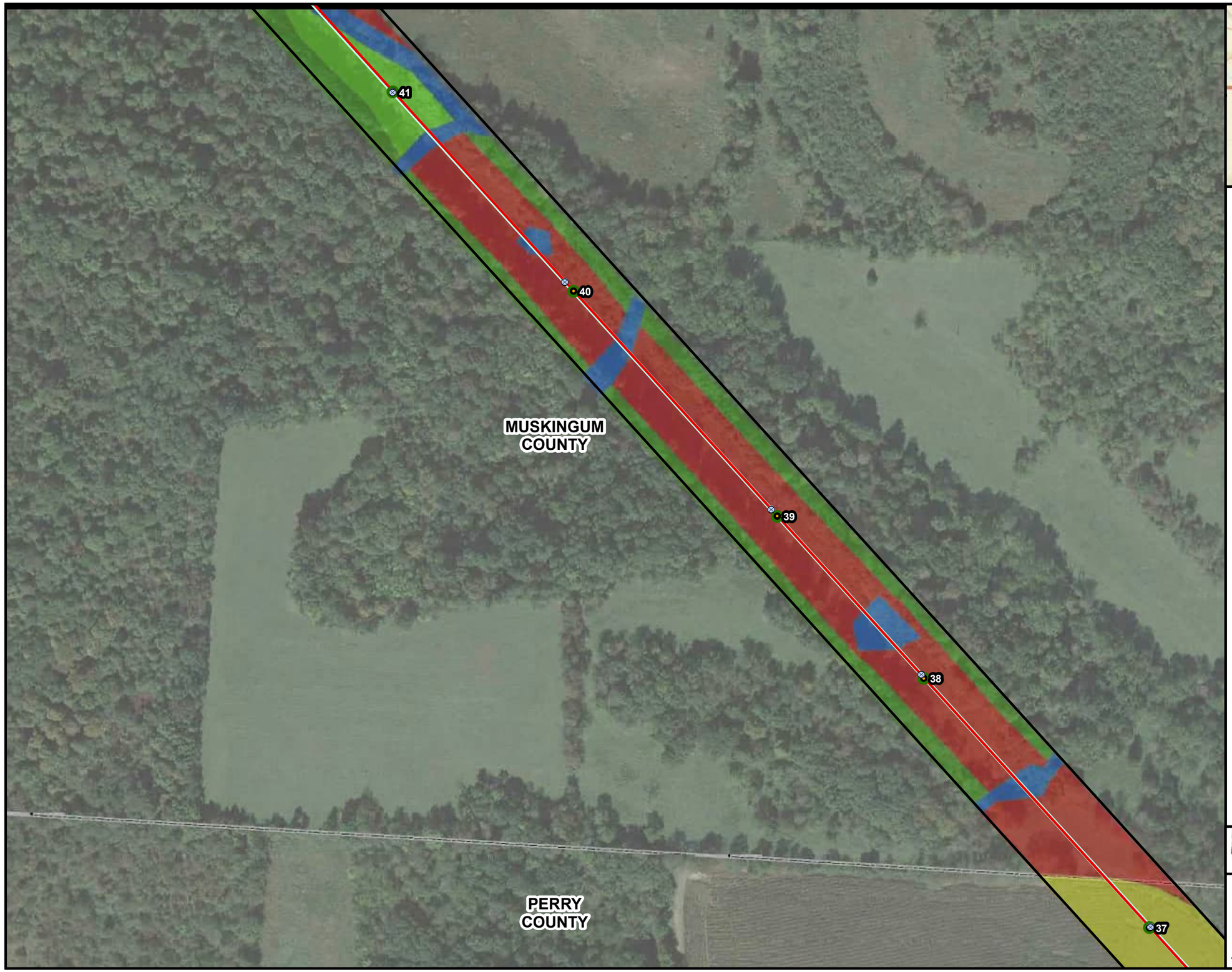

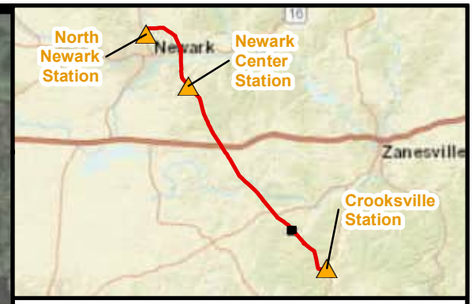

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
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Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AN
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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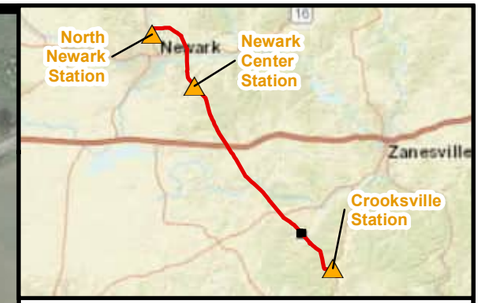
MUSKINGUM COUNTY

PERRY COUNTY

37

36

35



LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Agricultural Land
- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
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Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AO
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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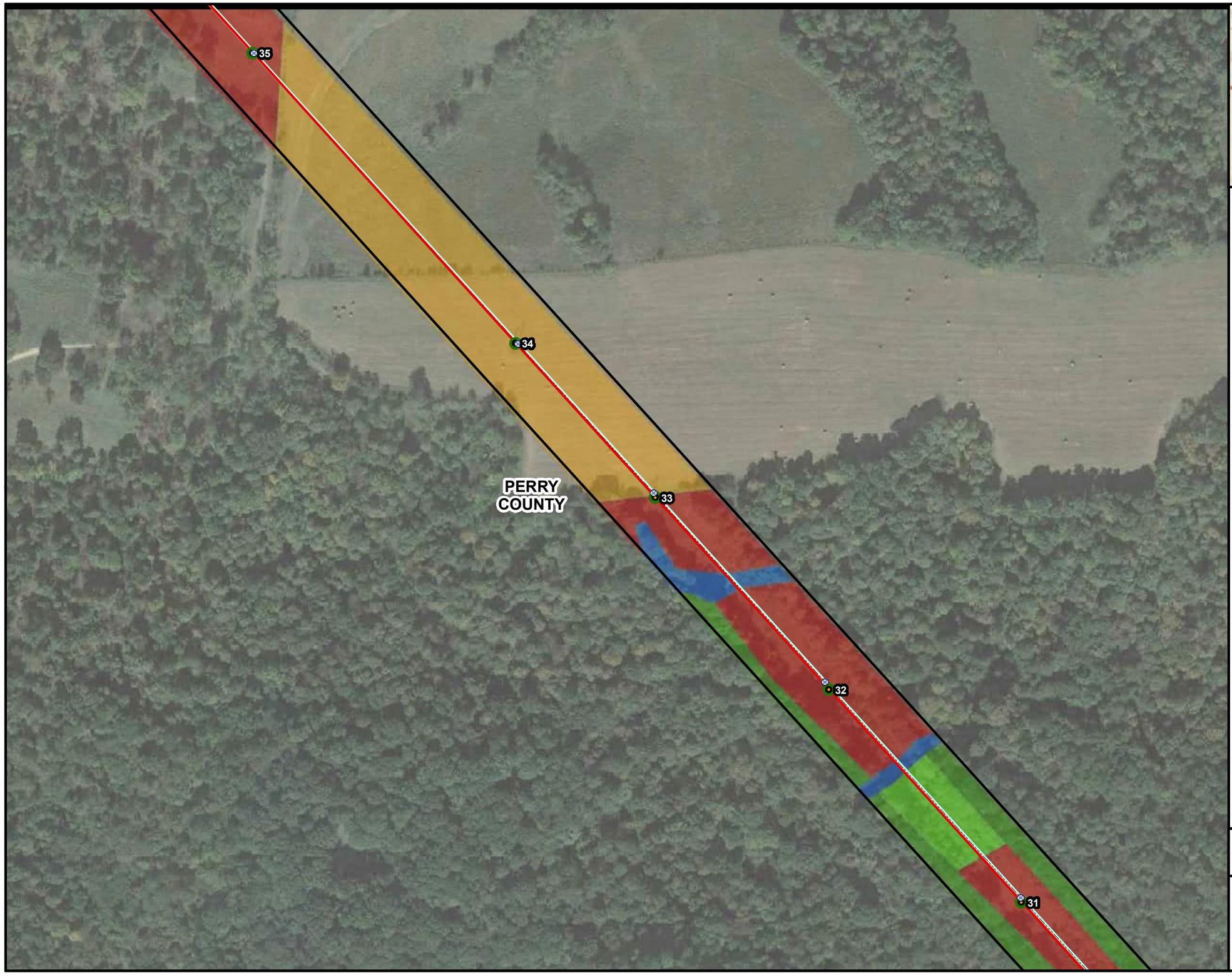

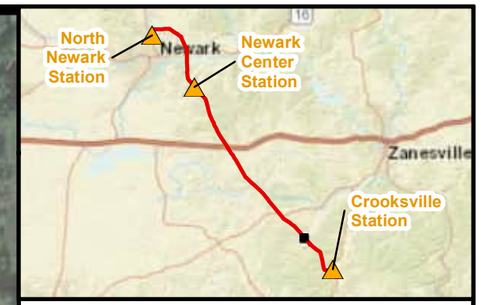

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
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Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AP
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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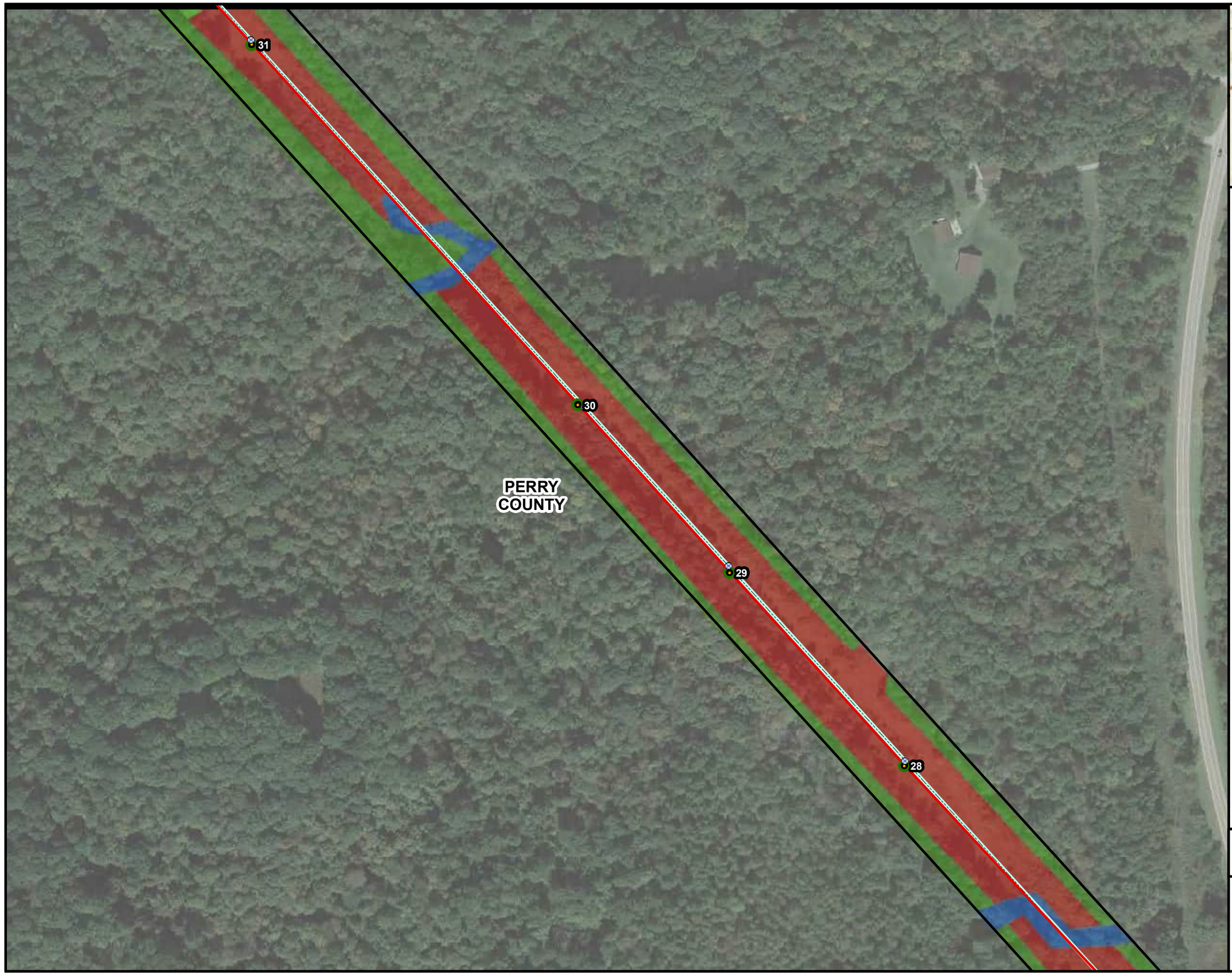

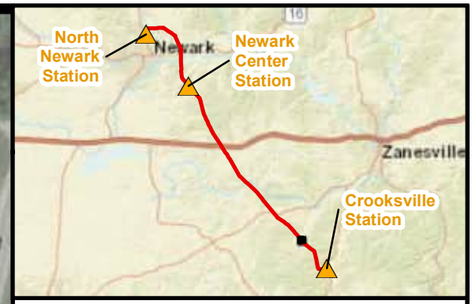

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AQ
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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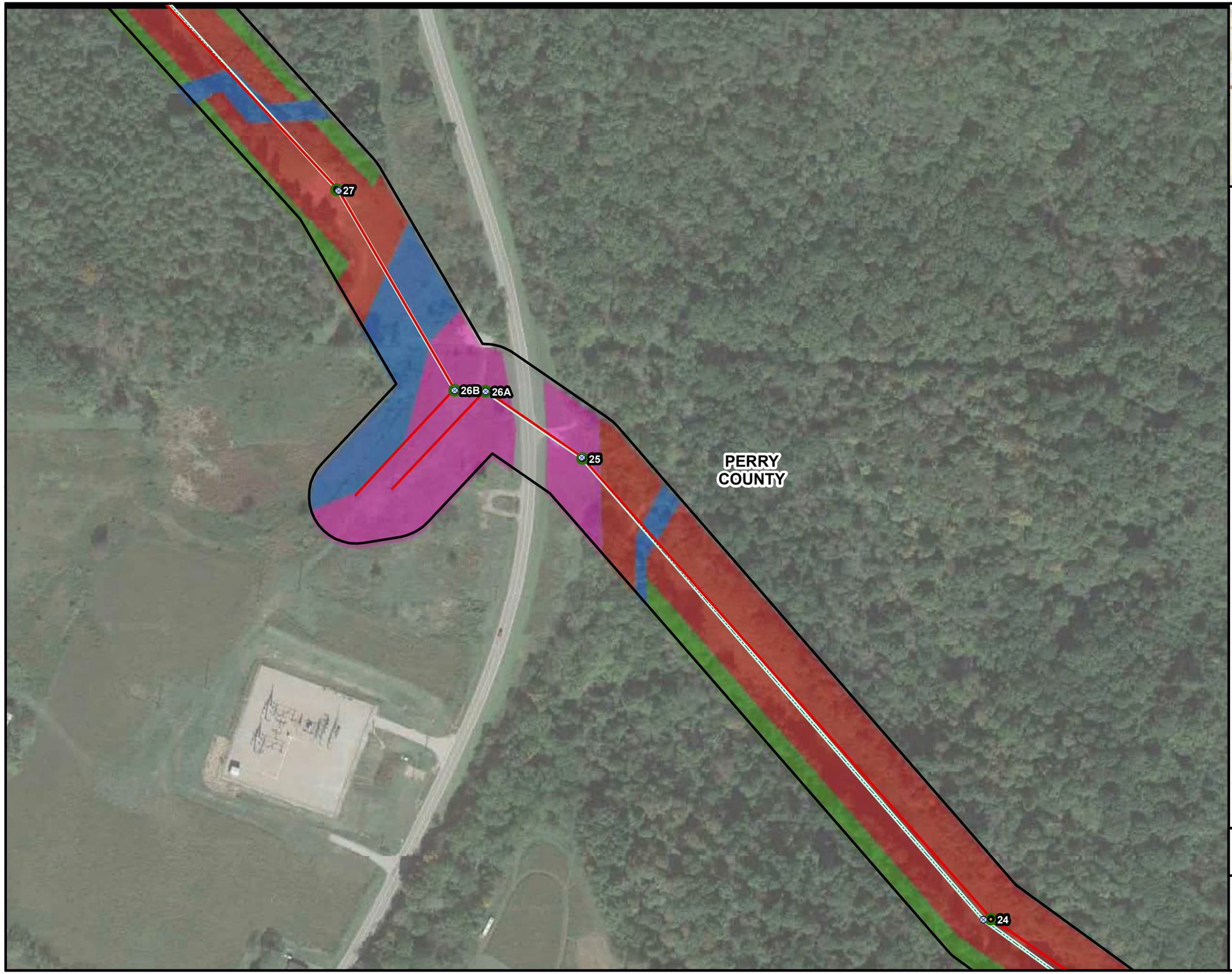

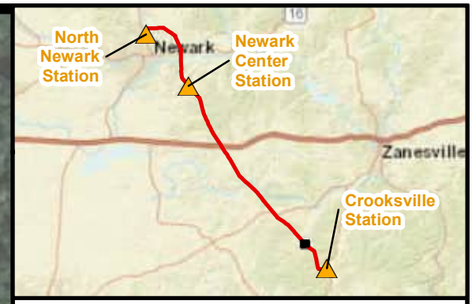

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AR
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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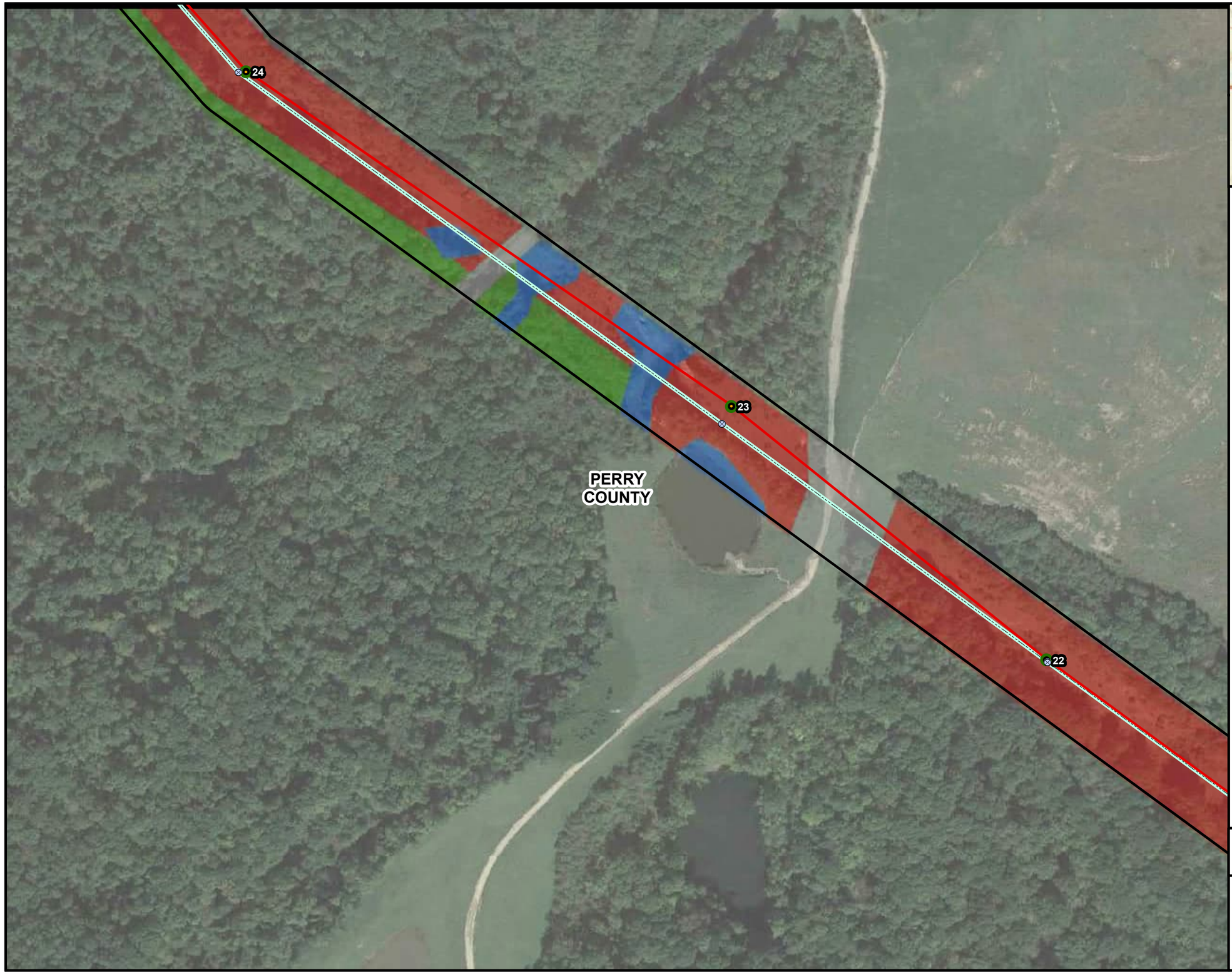

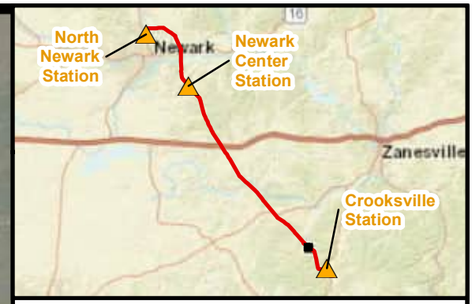

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AS
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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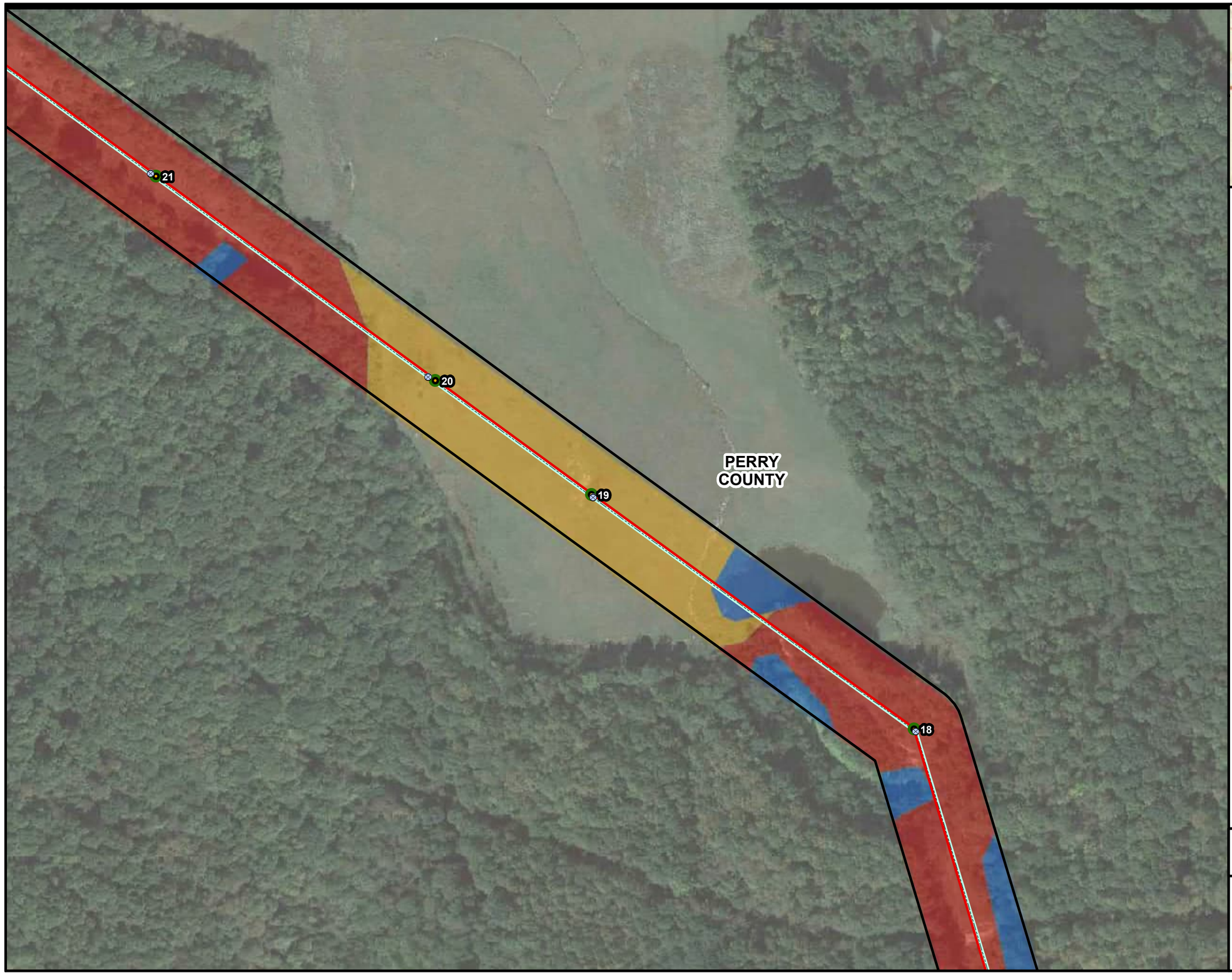

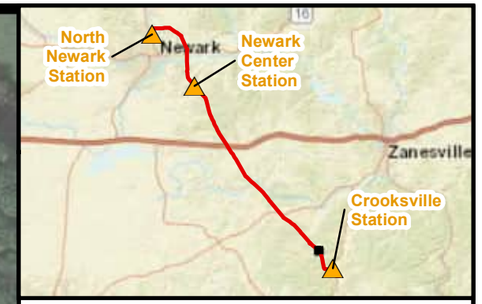

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Hay Field/Pasture
- Old Field
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
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AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AT
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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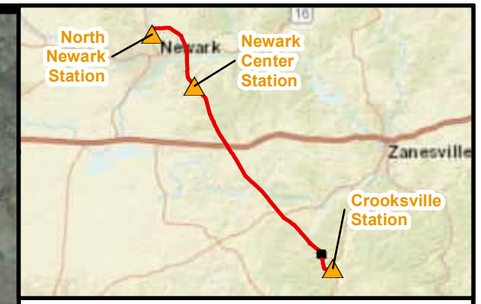

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Old Field
- Shrub/Scrub
- Stream/Wetland

N

0 200 400

Feet

BASE MAP SOURCE:
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AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AU
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

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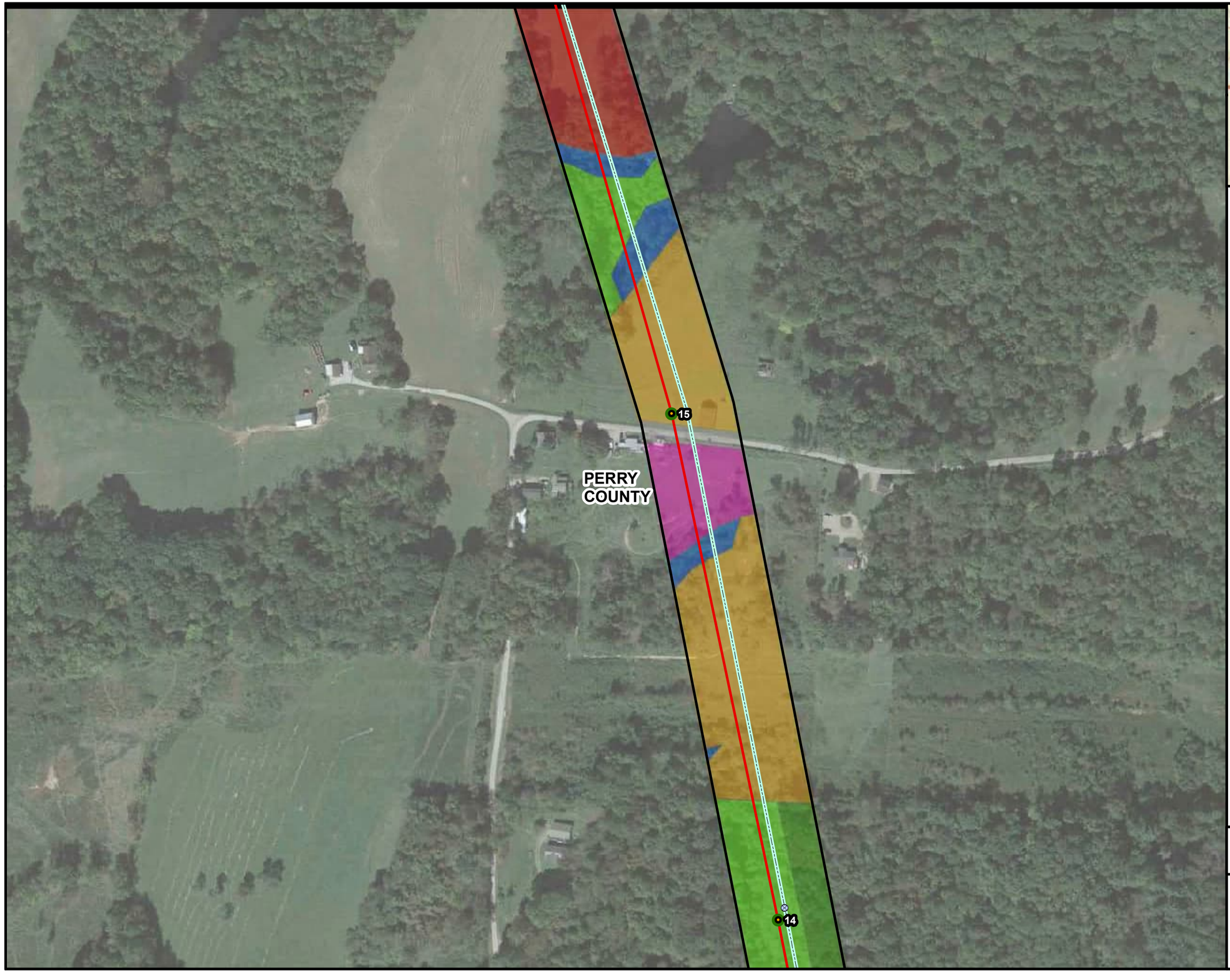

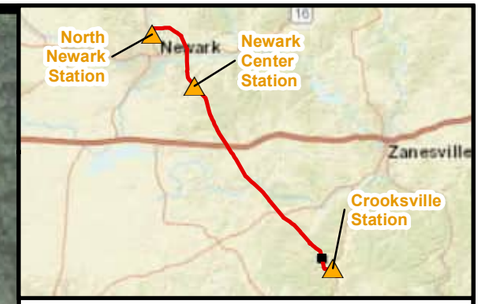

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
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- Urban

N

0 200 400

Feet

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AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AV
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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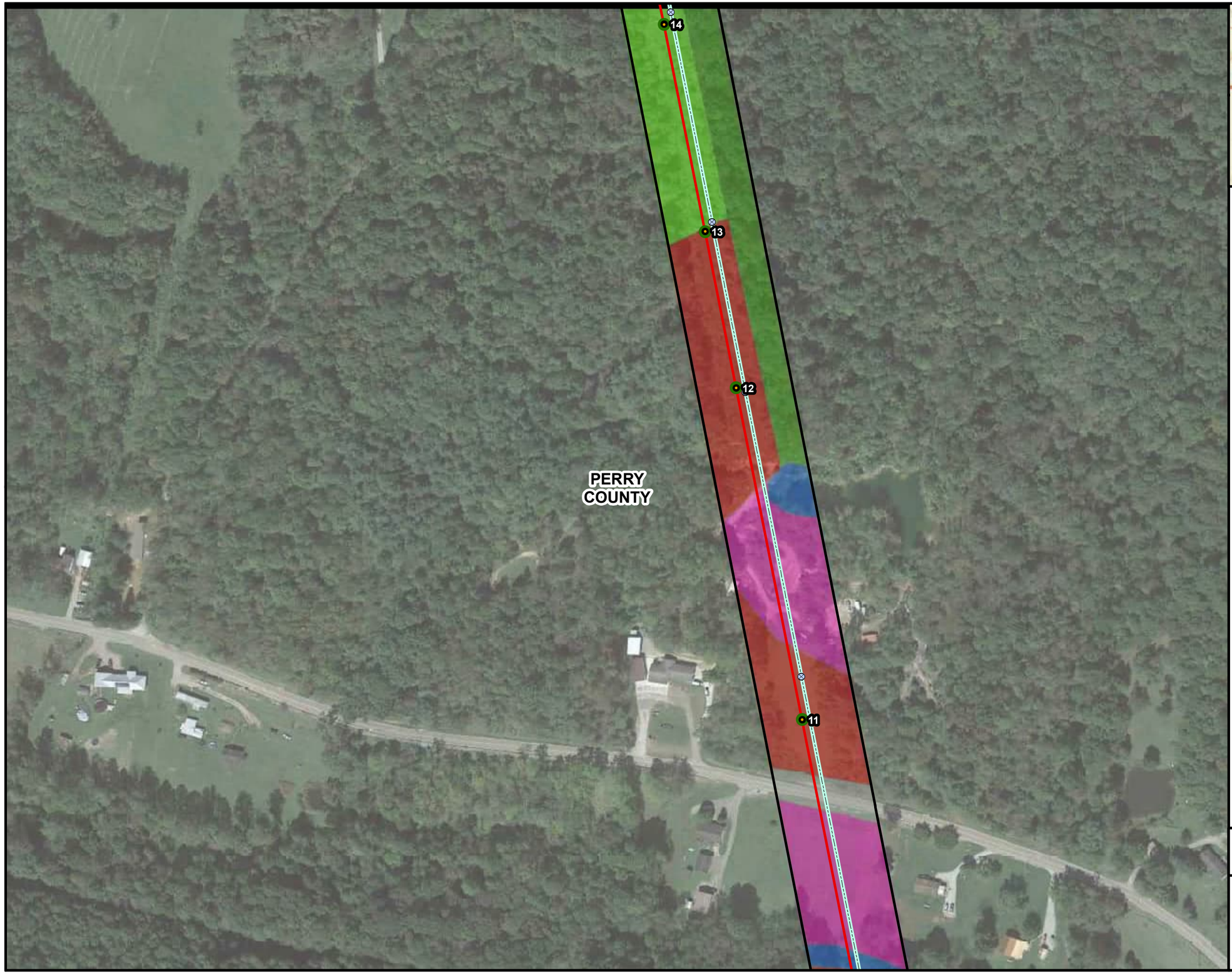

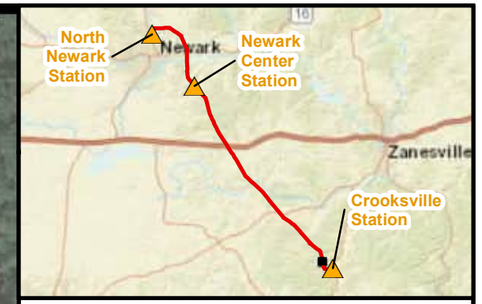

LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
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- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

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AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 2AW
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

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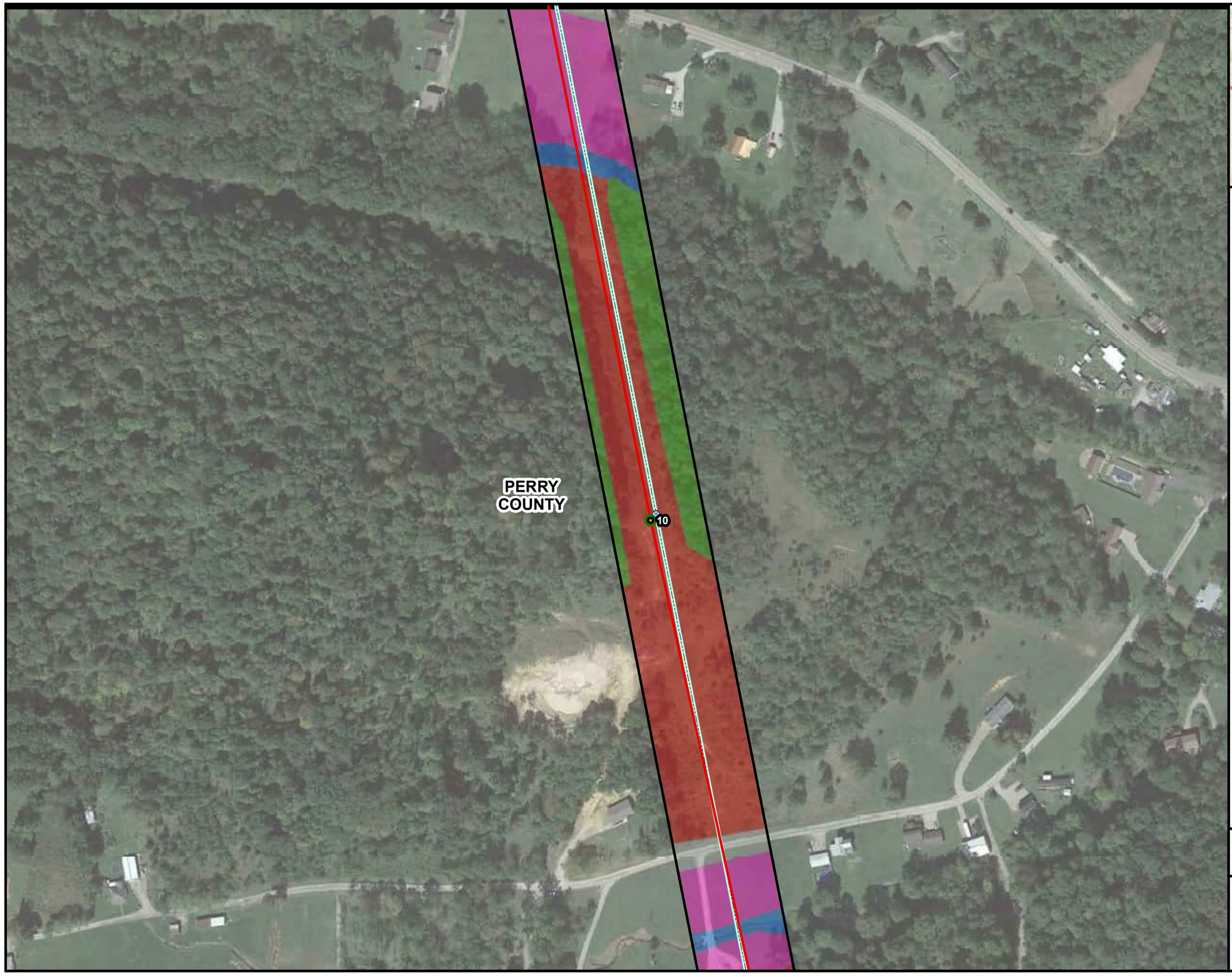
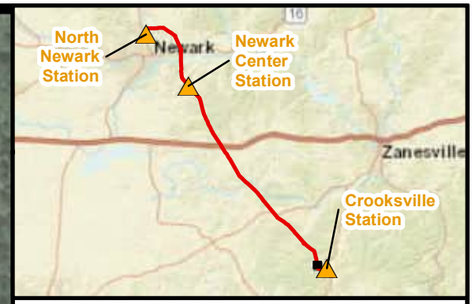




LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

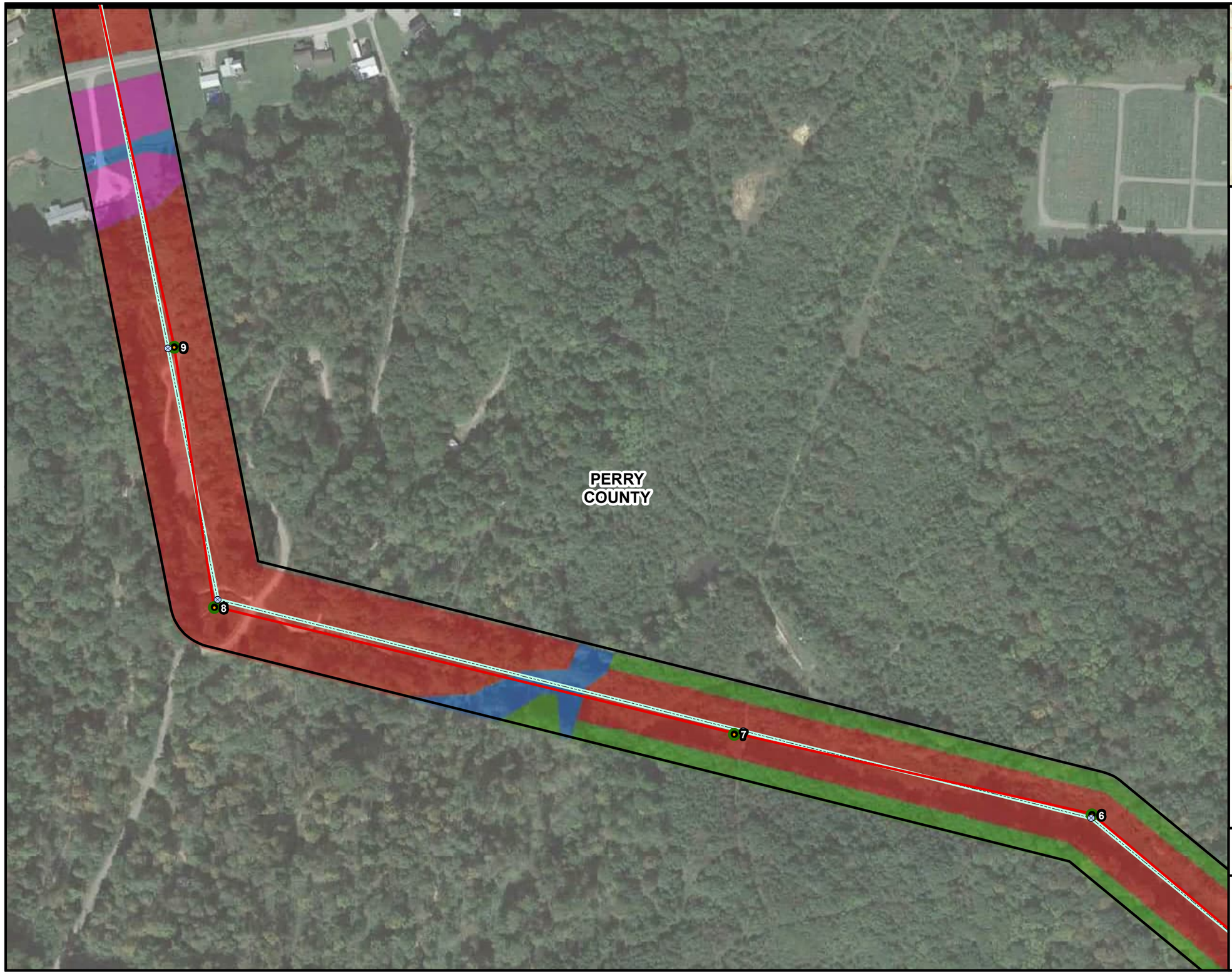
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

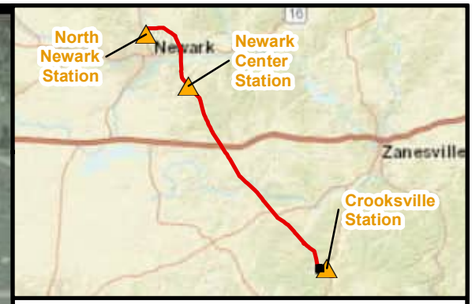
FIGURE 2AX
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksvilleNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

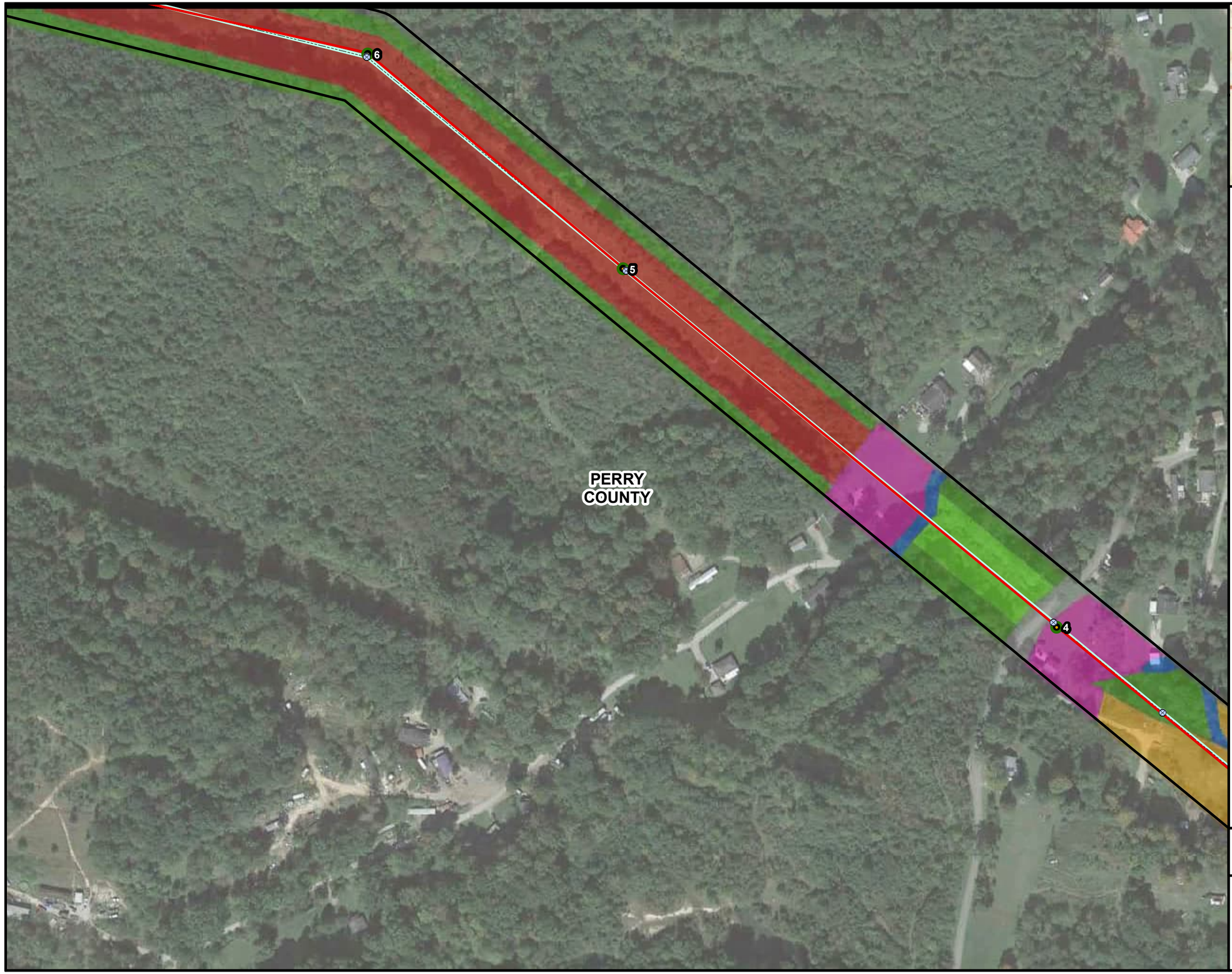
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

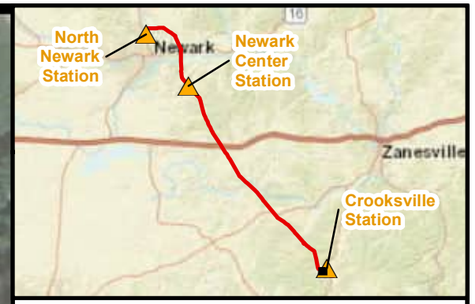
FIGURE 2AY
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksabNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

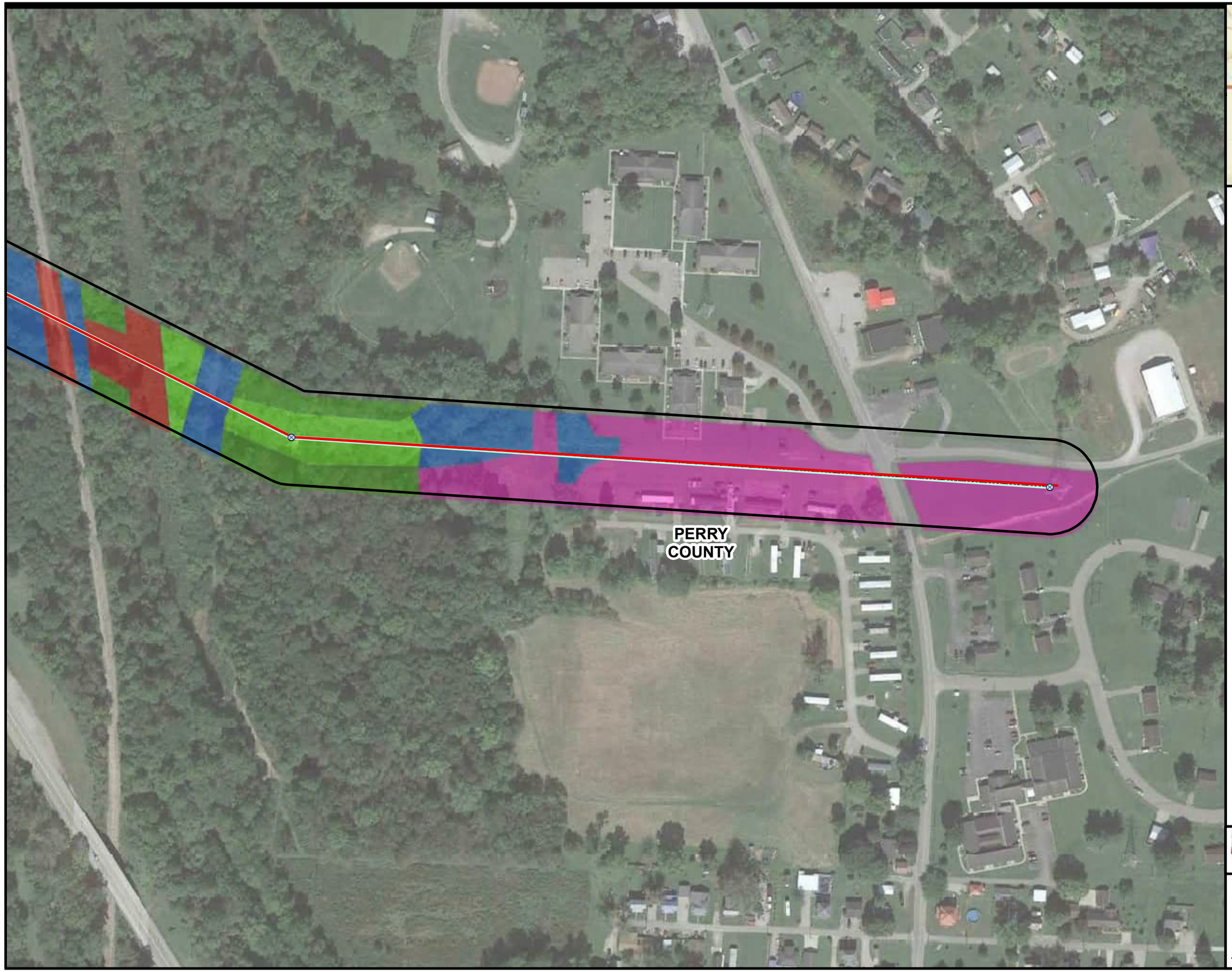
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

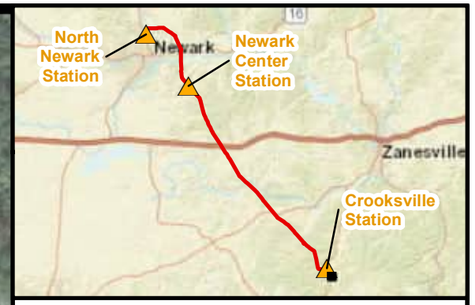
FIGURE 2AZ
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksbNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Existing Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Landscaped Area
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

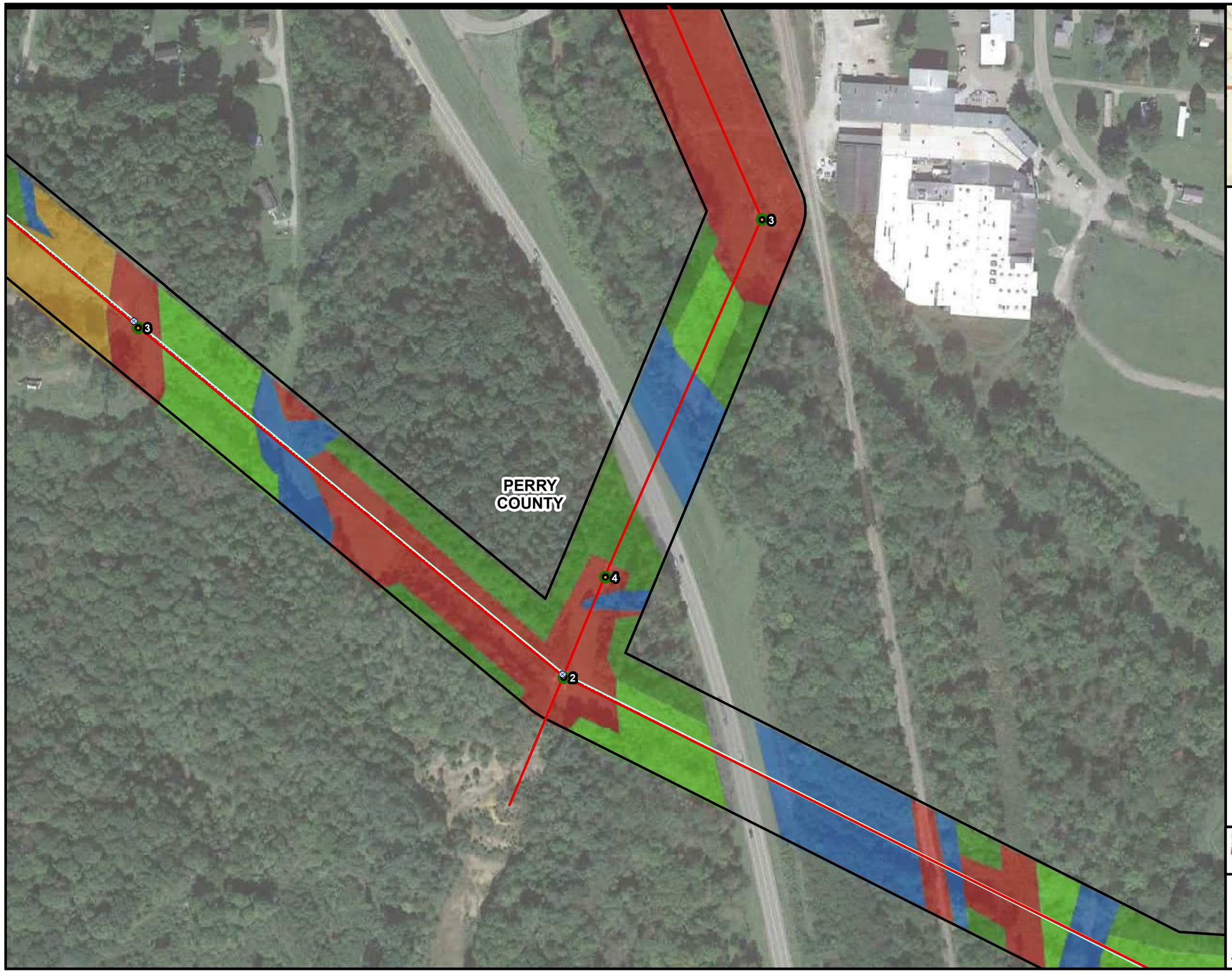
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

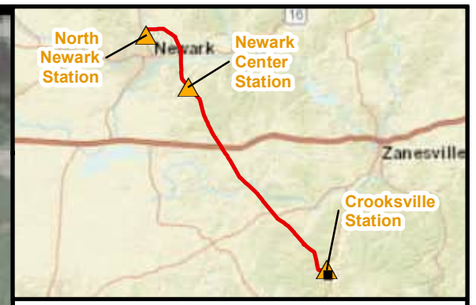
FIGURE 2BA
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksvilleNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Existing Structure
- Proposed Structure
- Existing Transmission Line
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Successional Woodland
- Hay Field/Pasture
- Old Field
- Shrub/Scrub
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

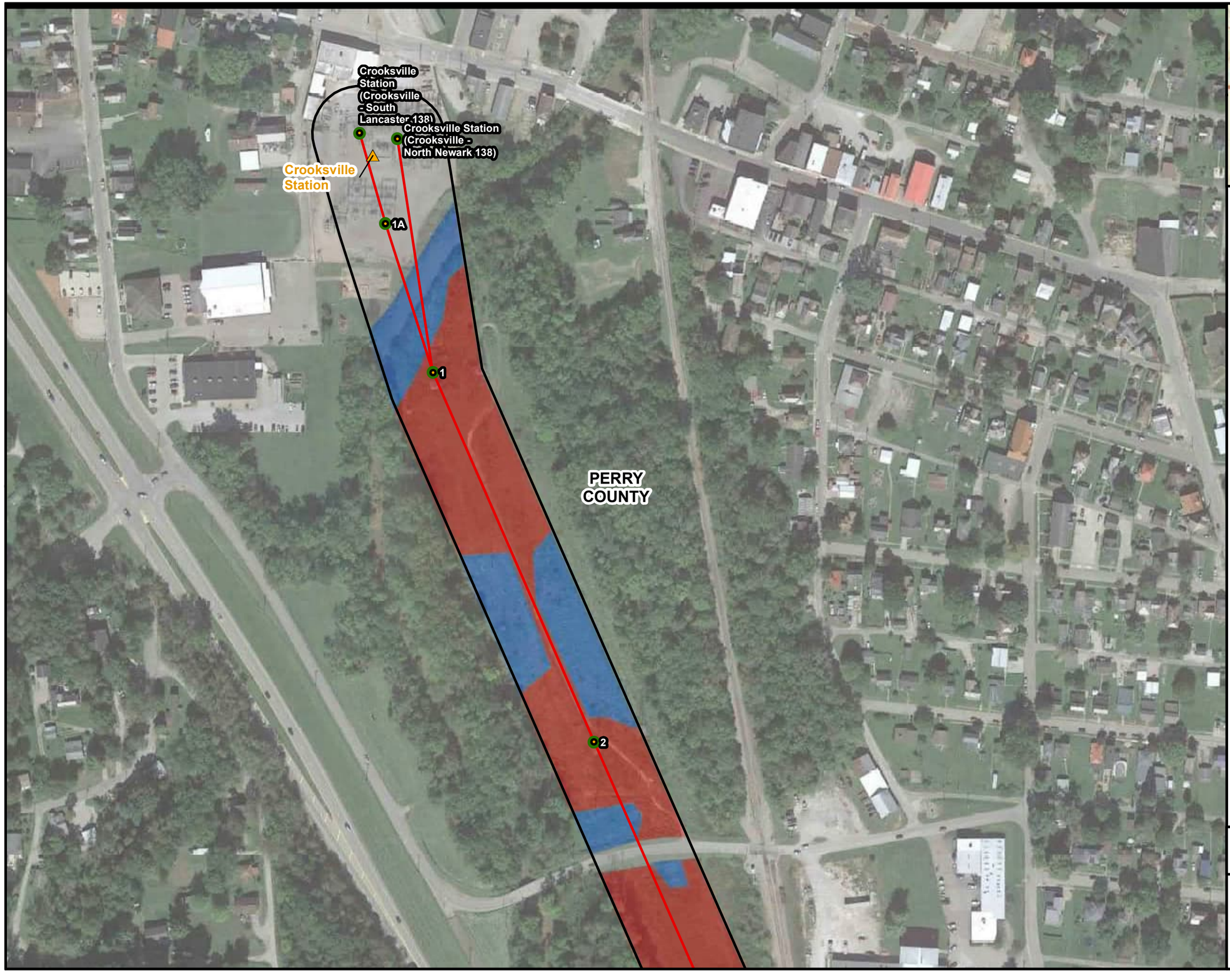
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

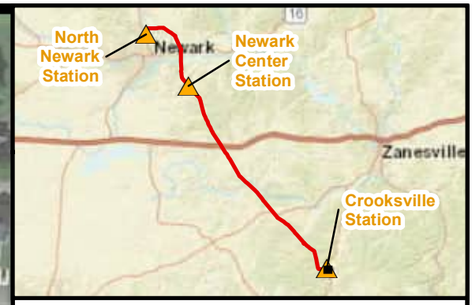
FIGURE 2BB
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksvilleNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





LEGEND:

- Proposed Structure
- Existing Station
- Crooksville-North Newark 138 kV Transmission Line
- Project Study Area
- County

Vegetative Communities

- Old Field
- Stream/Wetland
- Urban

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

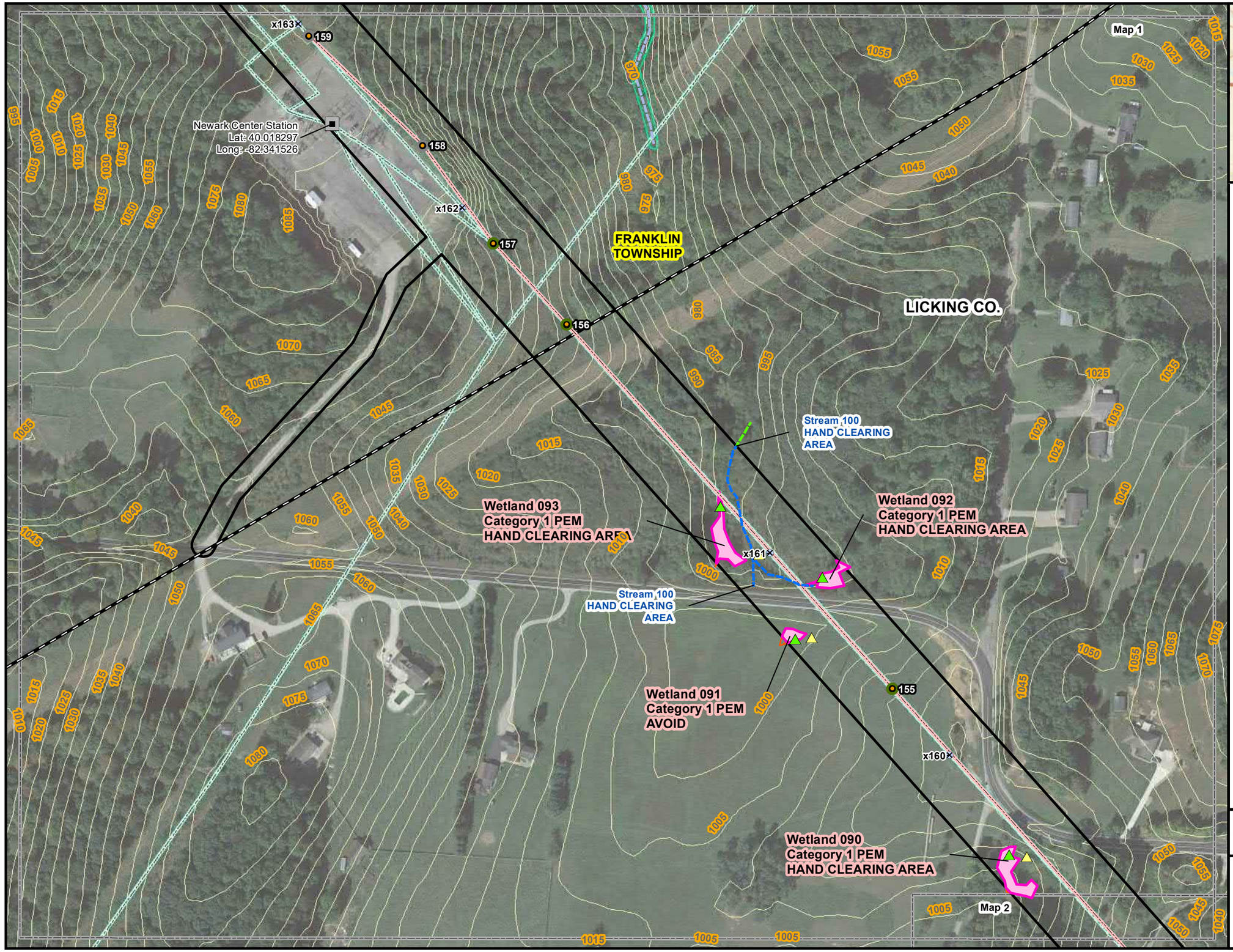
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

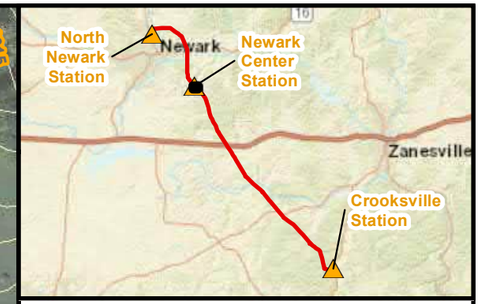
FIGURE 2BC
VEGETATIVE COMMUNITIES MAP

JOB NO. 60616110

AECOM

Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60616110_AEP_CrooksabNewarkCenter_Crooksville_Fig2_Vegetative_Communities.mxd Date: 4/13/2022





- Existing Substation
- Existing Structure
- Proposed Direct Embed Structure
- Structure (Included in Newark Center-North Newark SWPPP)
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Existing Pipeline
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

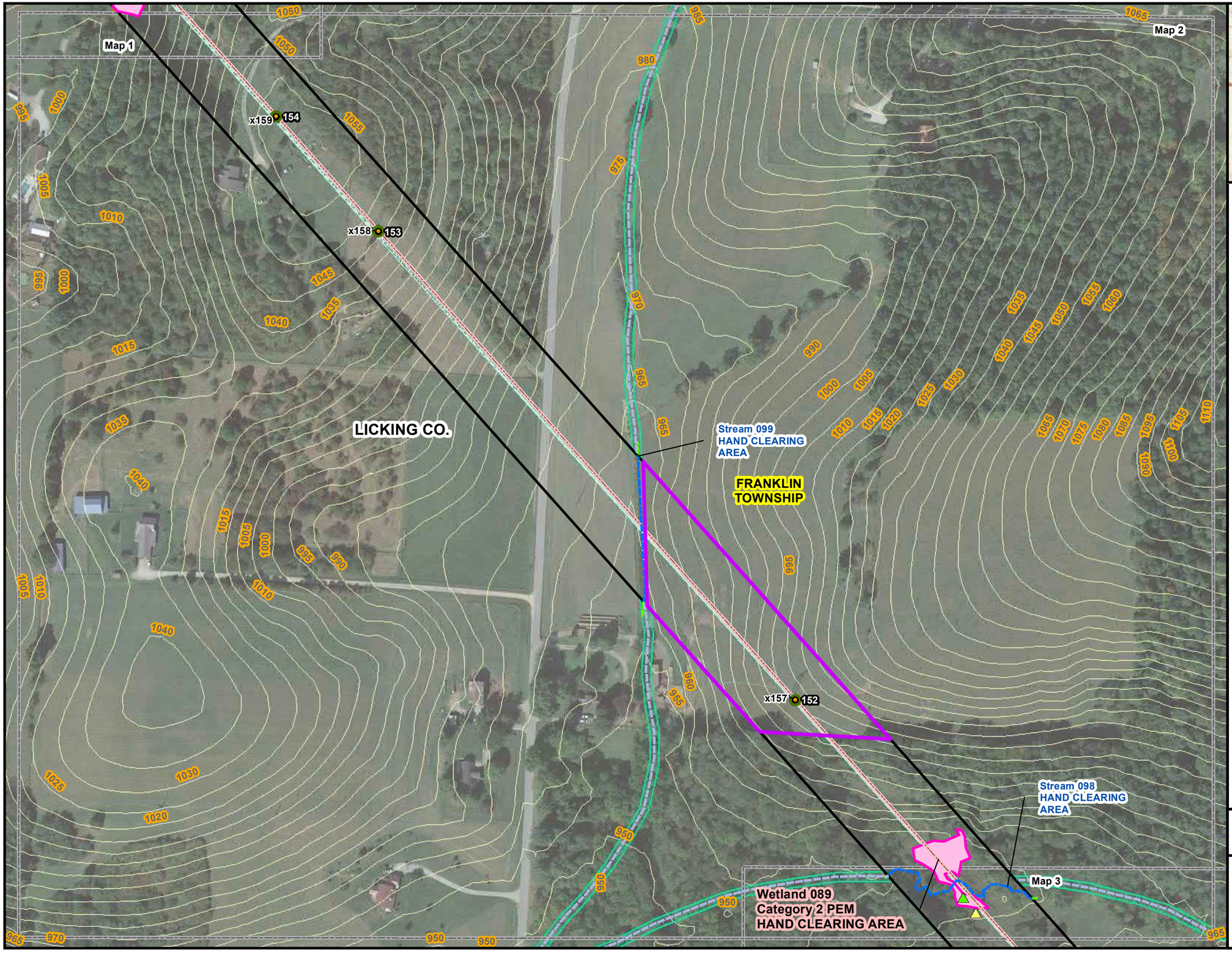
AEP OHIO TRANSMISSION COMPANY

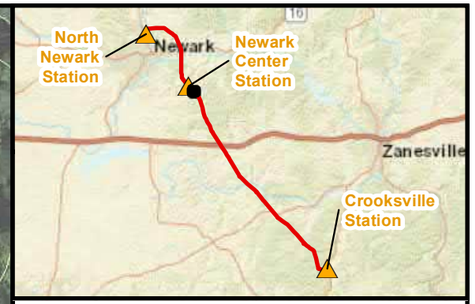
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3A
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

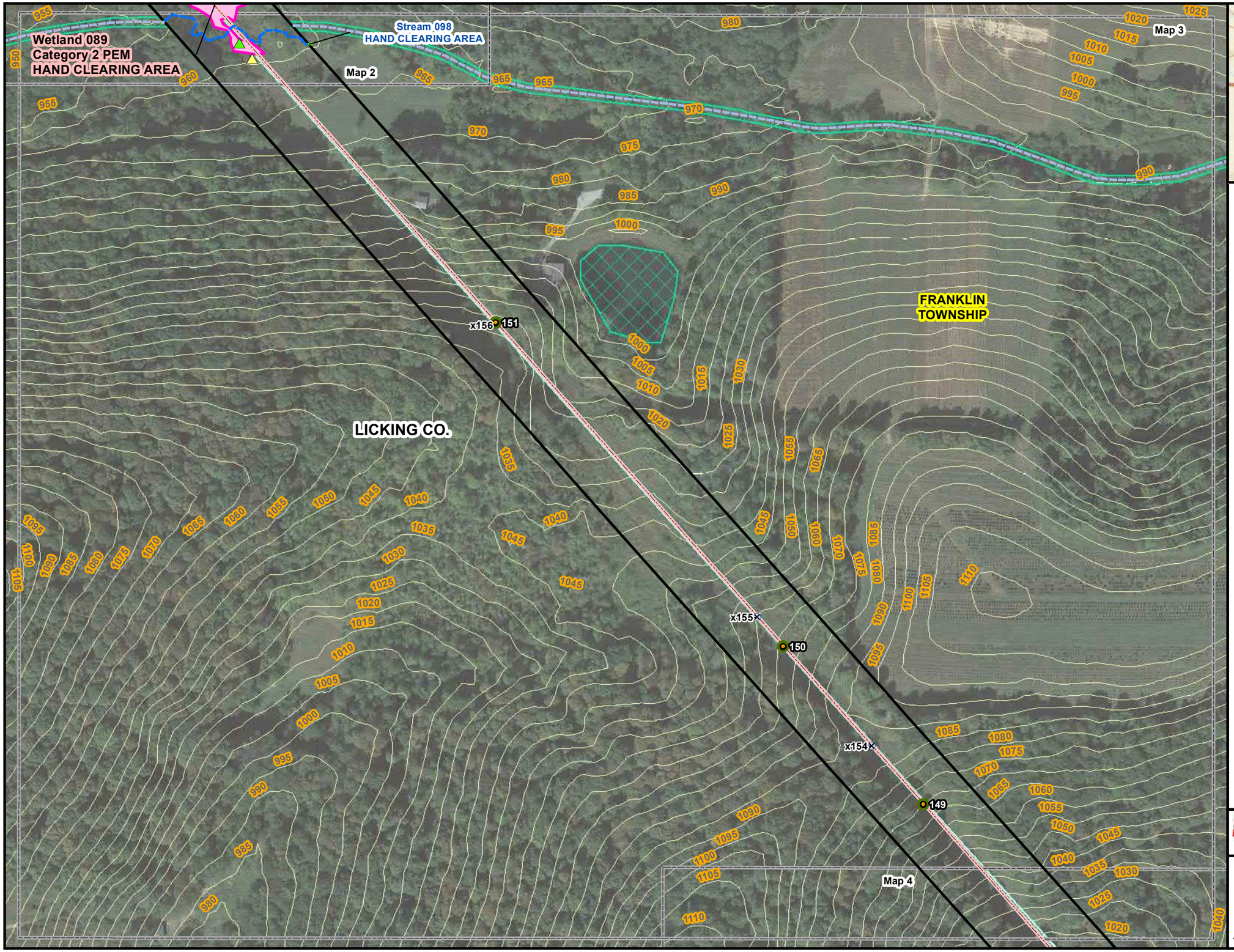
AEP OHIO TRANSMISSION COMPANY

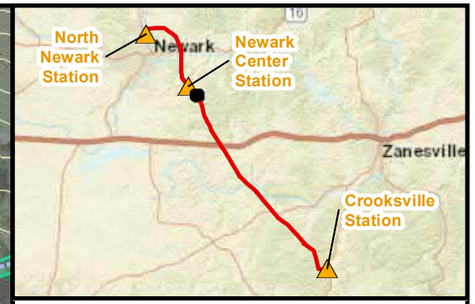
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3B
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3C
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Map 3

Map 4

Map 5

Stream 097
HAND CLEARING
AREA

Stream 097
HAND CLEARING
AREA

FRANKLIN
TOWNSHIP

LICKING CO.

x153

148

Wetland 088a
Category 2 PEM
HAND CLEARING AREA

Wetland 088b
Category 2 PSS
HAND CLEARING AREA

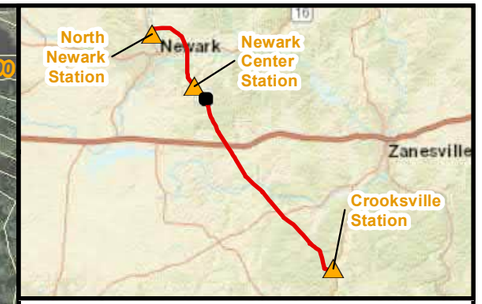
Stream 123
HAND CLEARING
AREA

Stream 122
HAND CLEARING
AREA

Stream 096
HAND CLEARING AREA

147

x152



- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

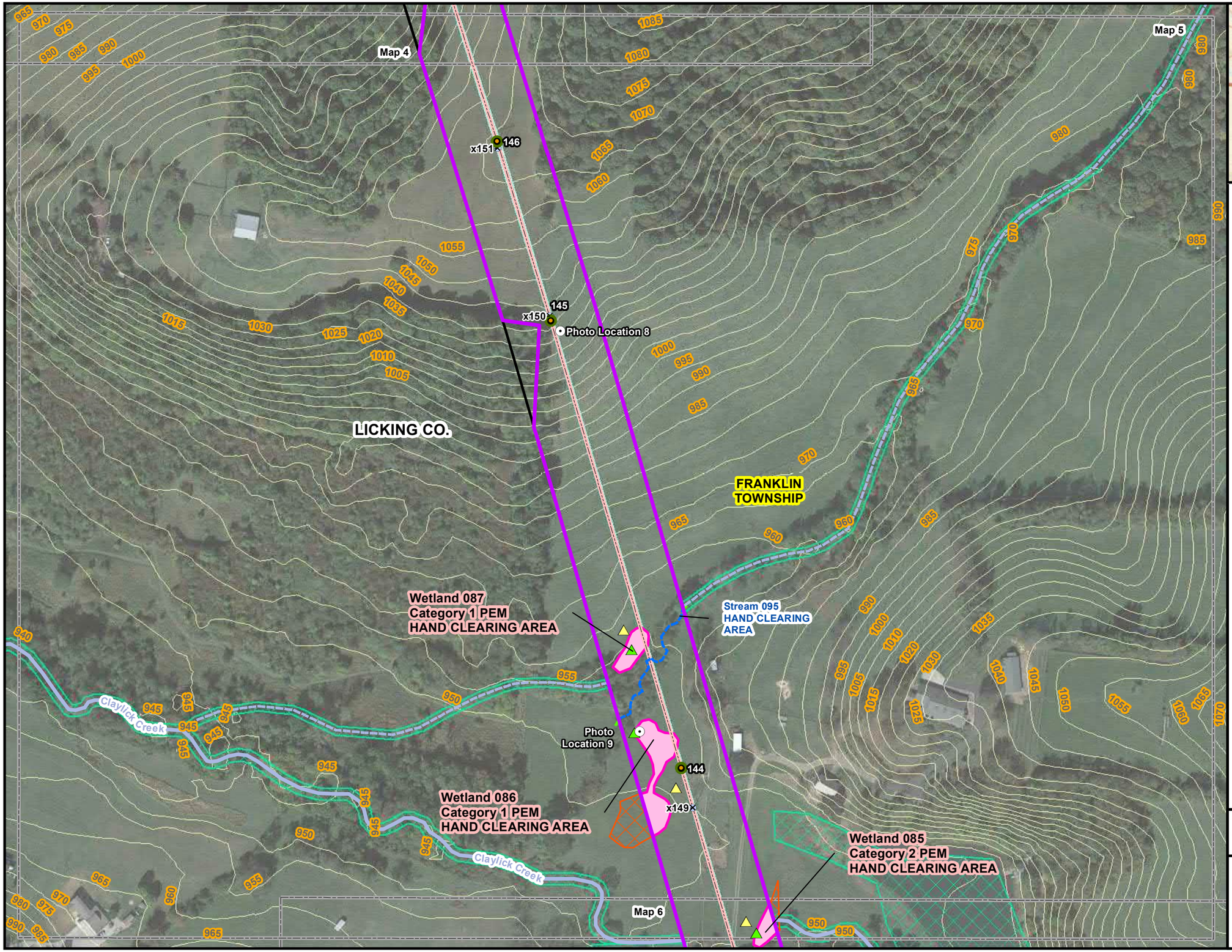
AEP OHIO TRANSMISSION COMPANY

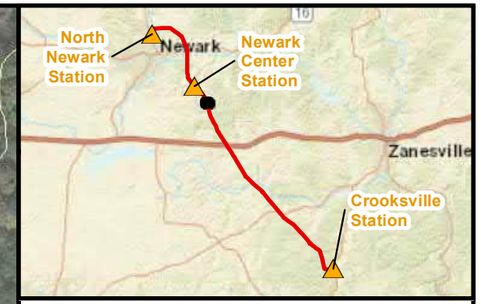
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3D
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Photographic Location
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

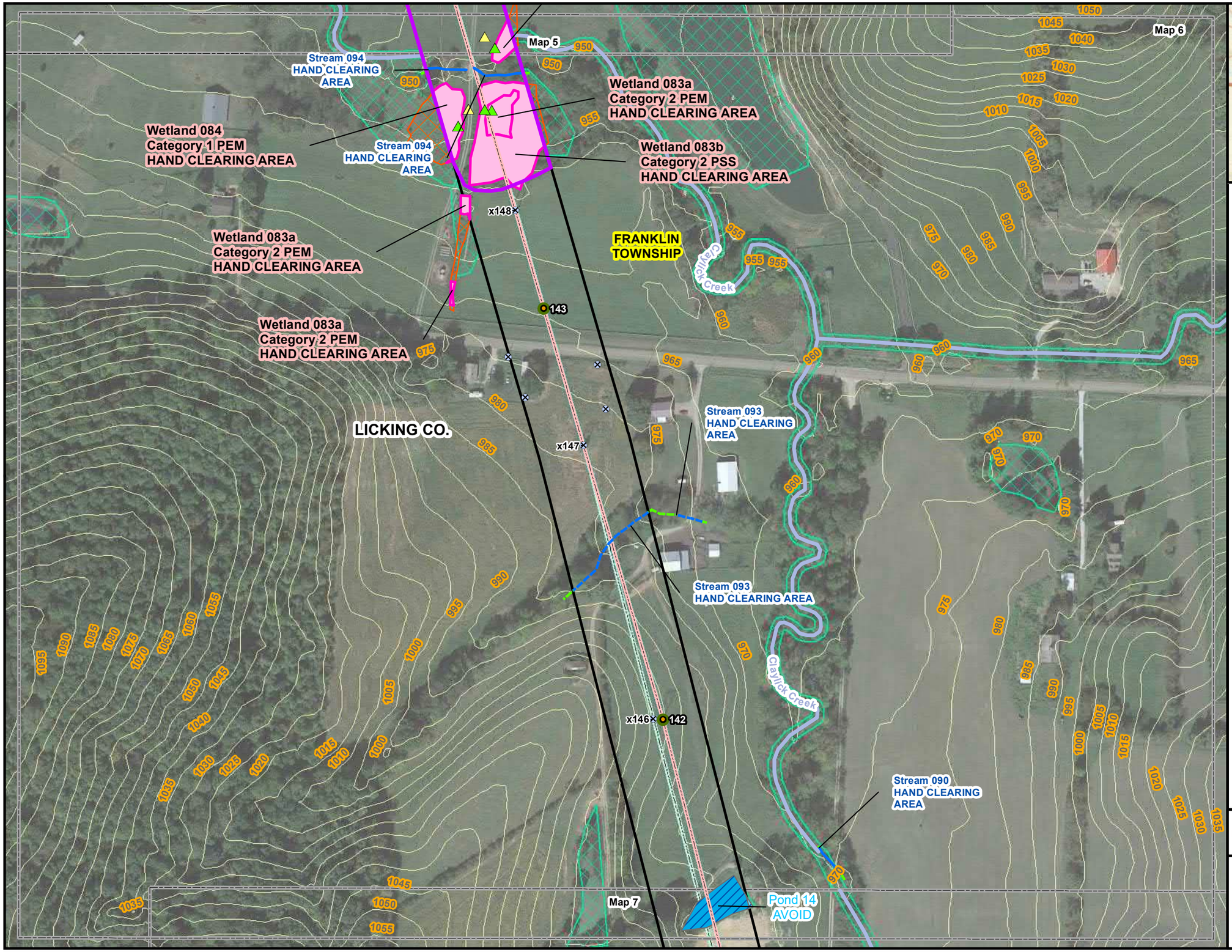
AEP OHIO TRANSMISSION COMPANY

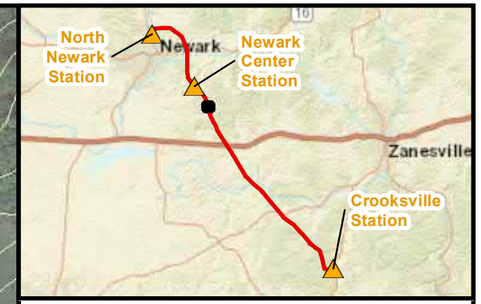
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3E
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

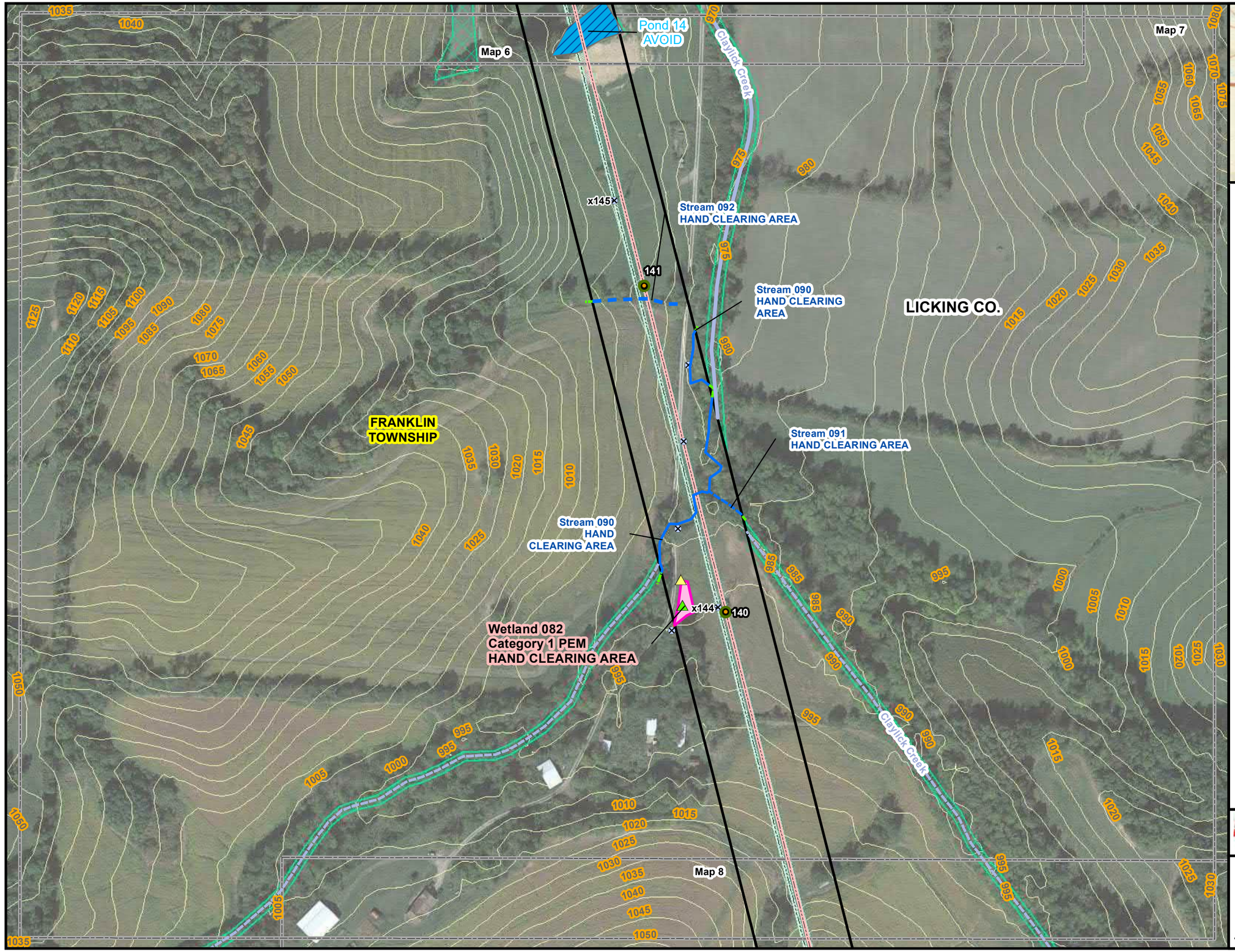
AEP OHIO TRANSMISSION COMPANY

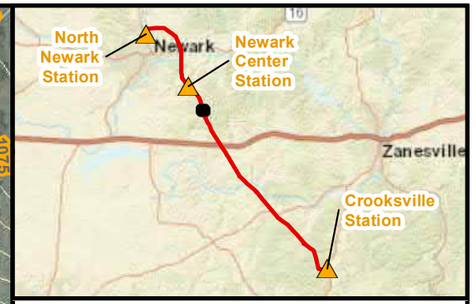
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3F
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

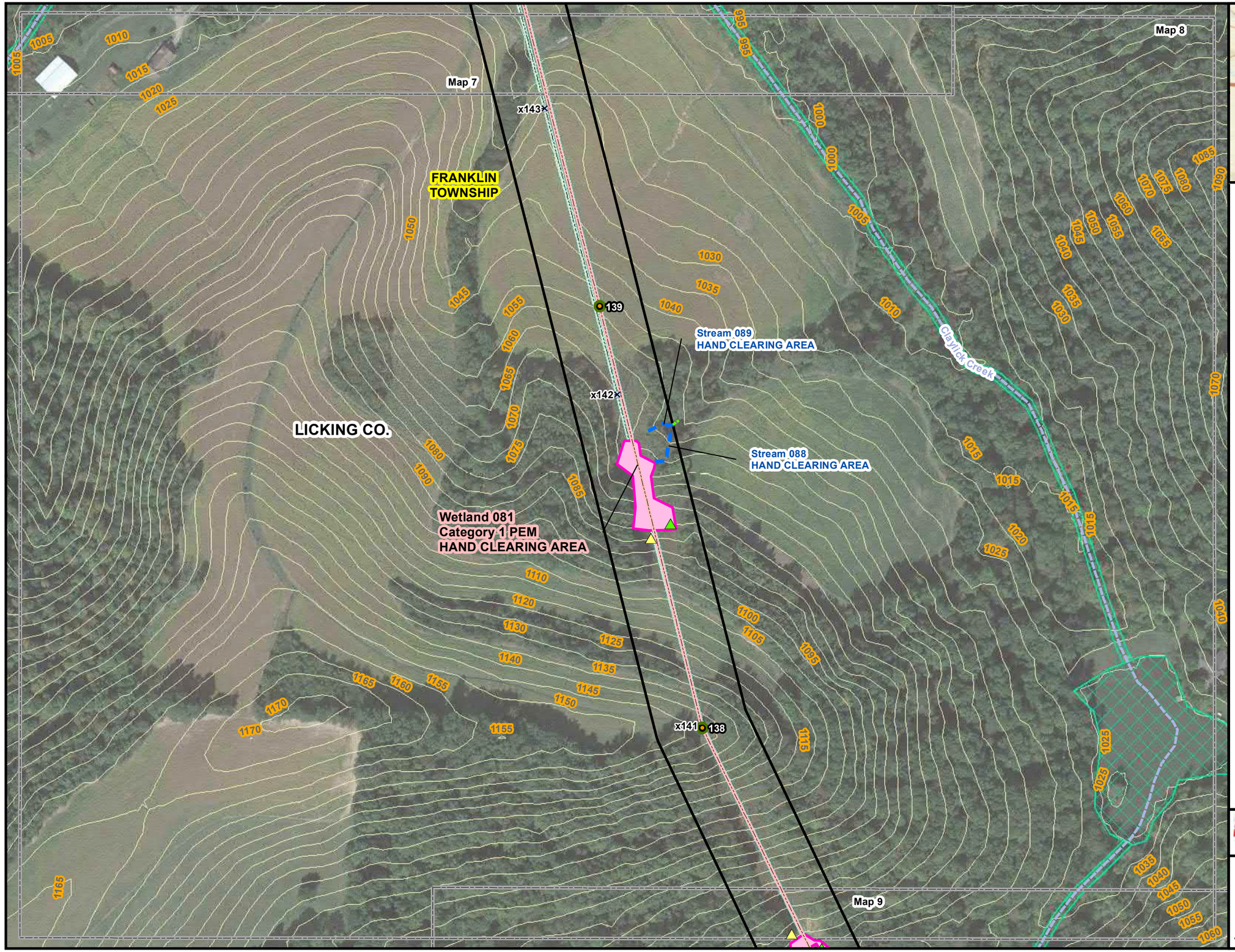
AEP OHIO TRANSMISSION COMPANY

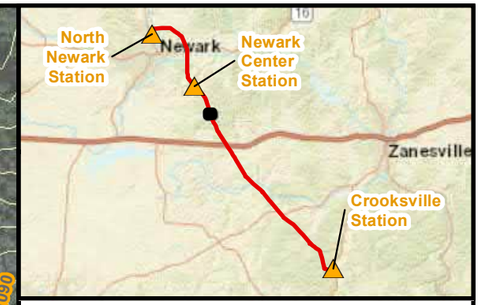
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3G
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Ephemeral Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

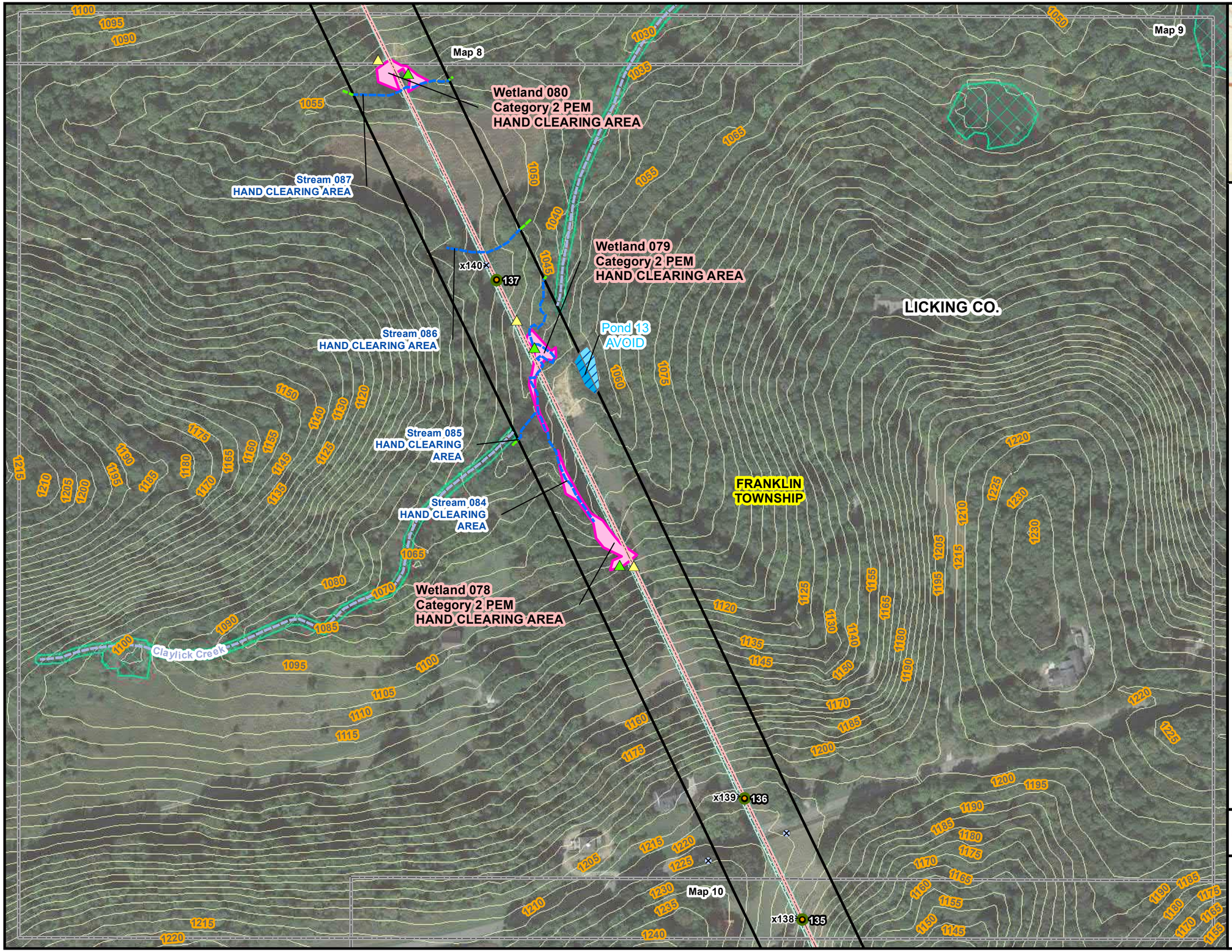
AEP OHIO TRANSMISSION COMPANY

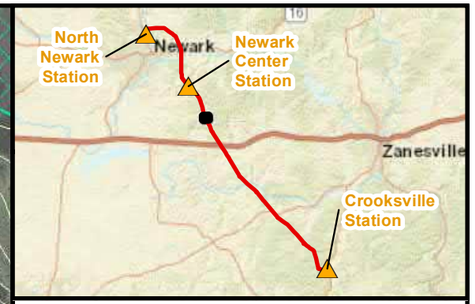
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3H
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

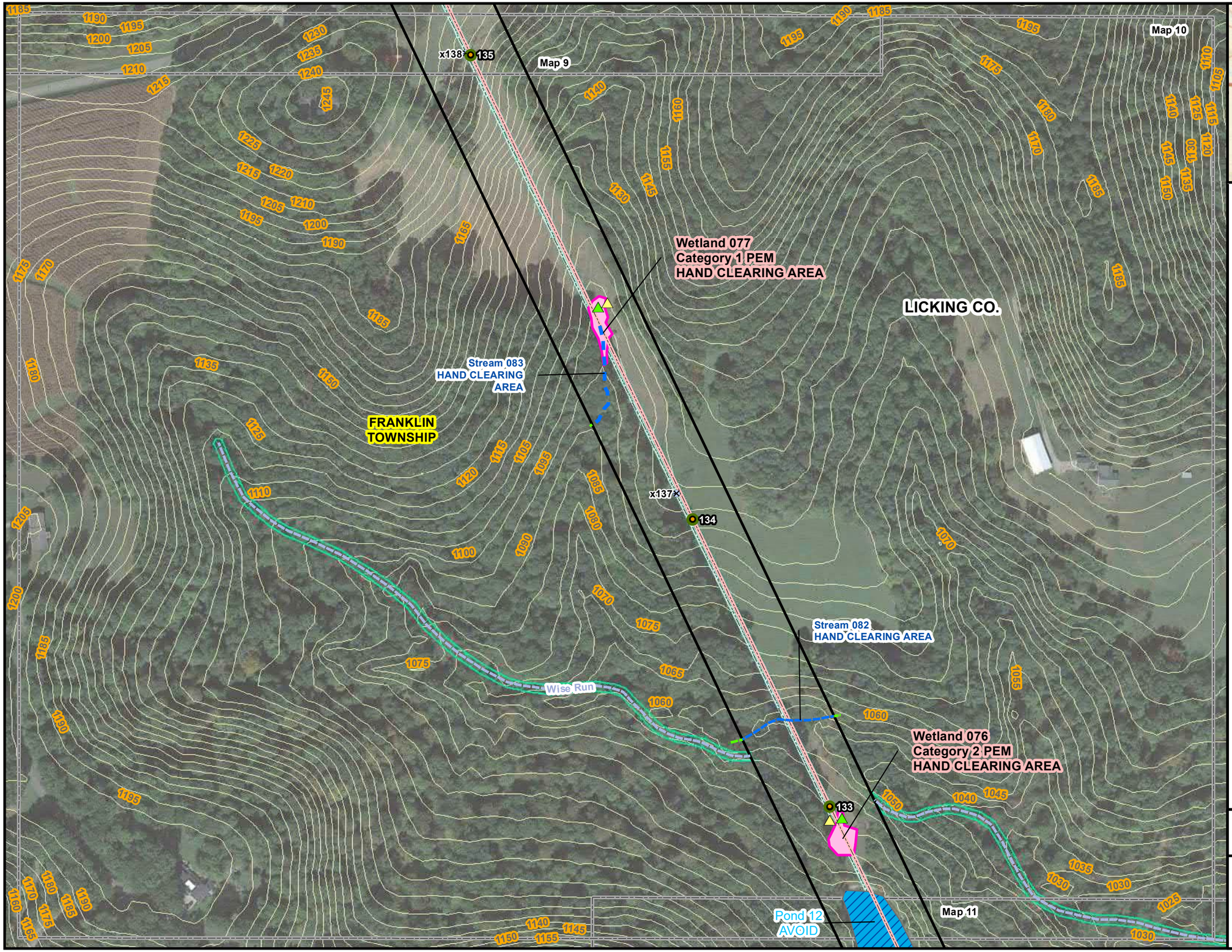
AEP OHIO TRANSMISSION COMPANY

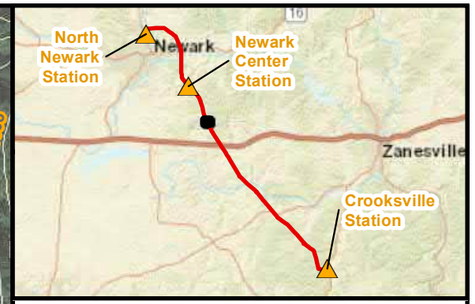
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3I
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

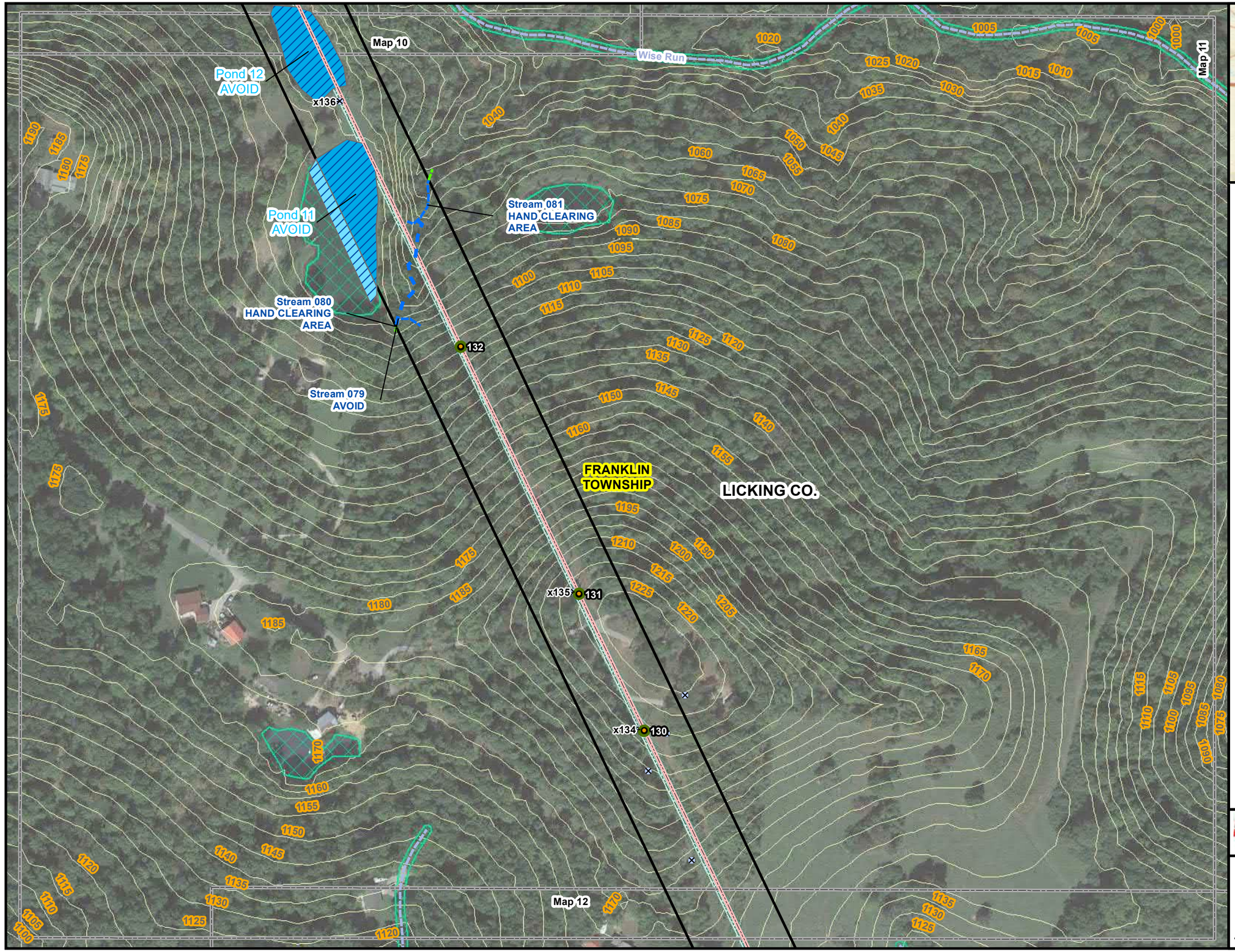
AEP OHIO TRANSMISSION COMPANY

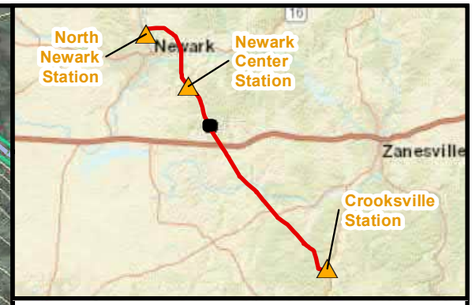
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3J
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

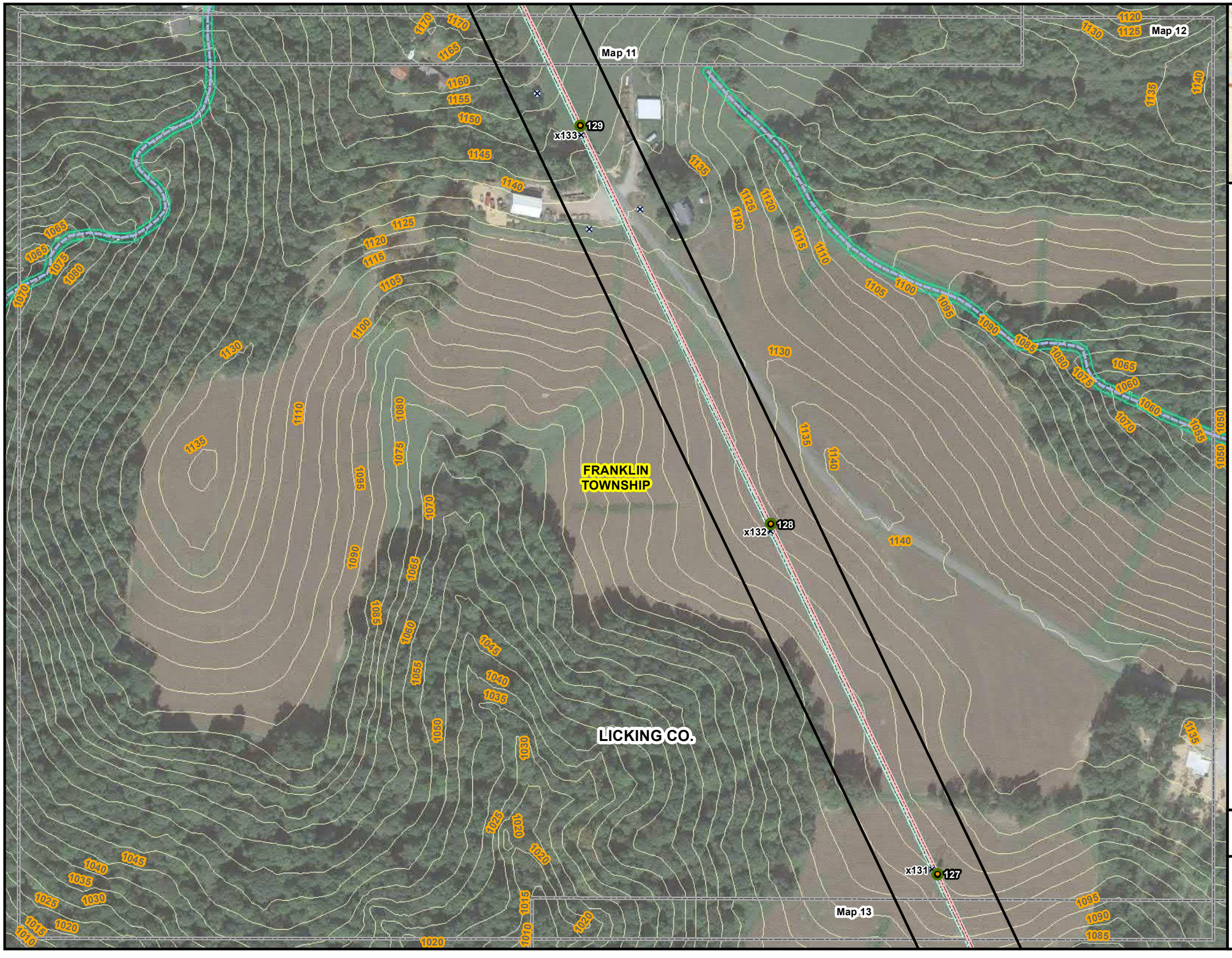
AEP OHIO TRANSMISSION COMPANY

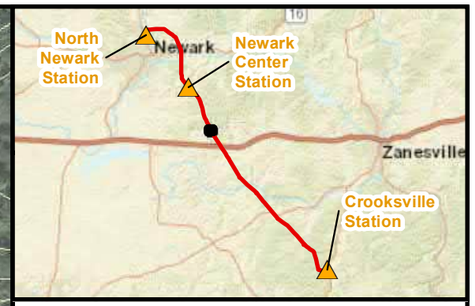
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3K
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- 5 ft Contour
- Intermittent Stream (NHD)
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3L
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Map 12

Map 13

Map 14

Stream 078
HAND CLEARING
AREA

FRANKLIN
TOWNSHIP

LICKING CO.

BOWLING GREEN
TOWNSHIP

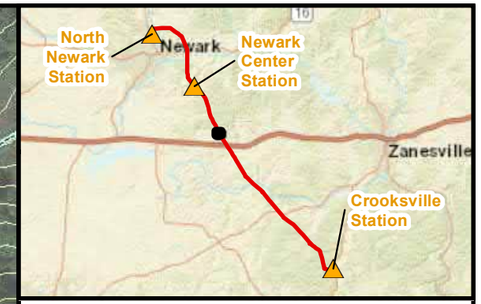
HOPEWELL
TOWNSHIP

x130 126

125

x129

x128 124



- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Ephemeral Stream
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

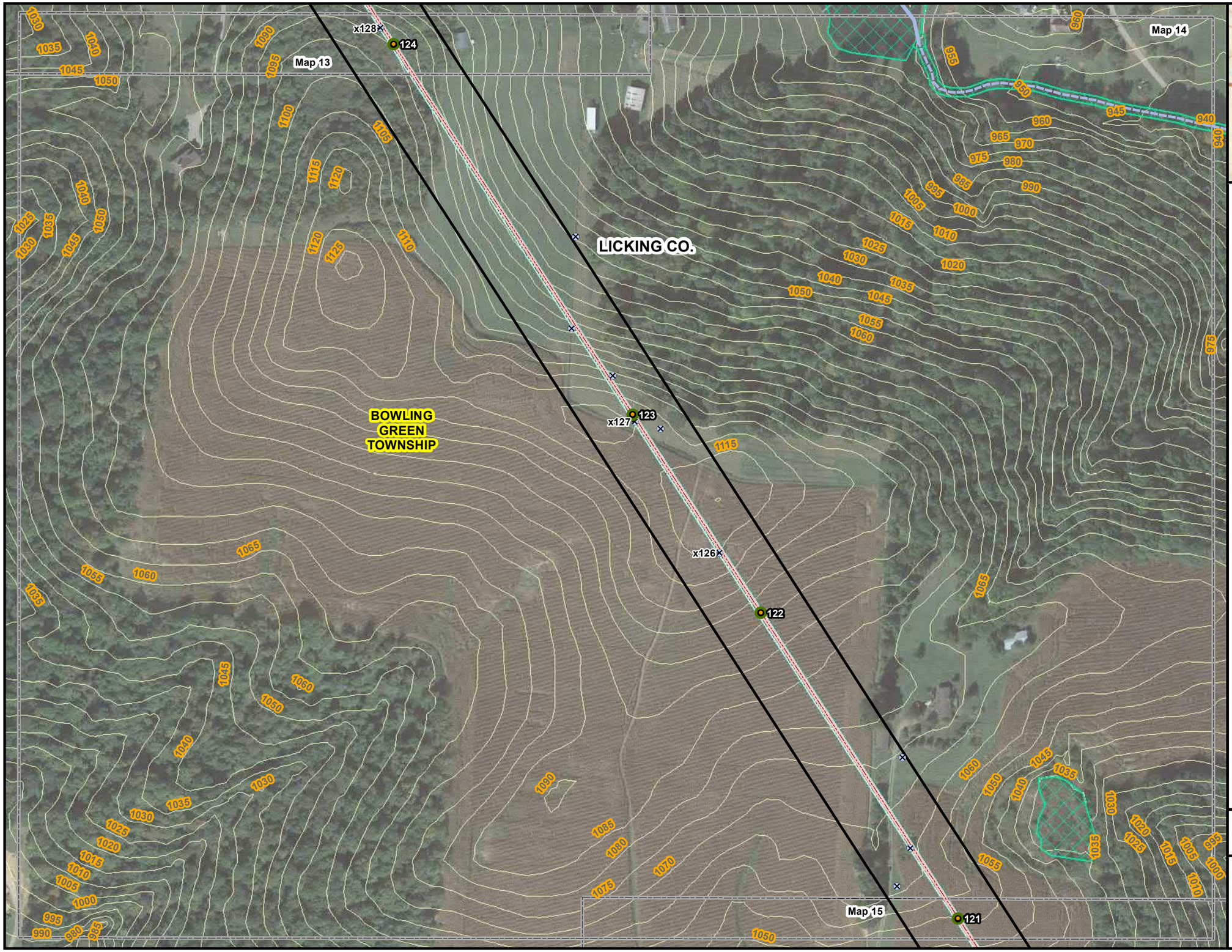
AEP OHIO TRANSMISSION COMPANY

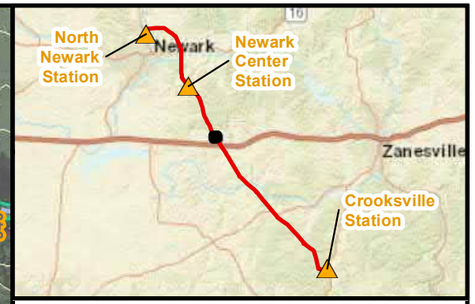
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3M
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

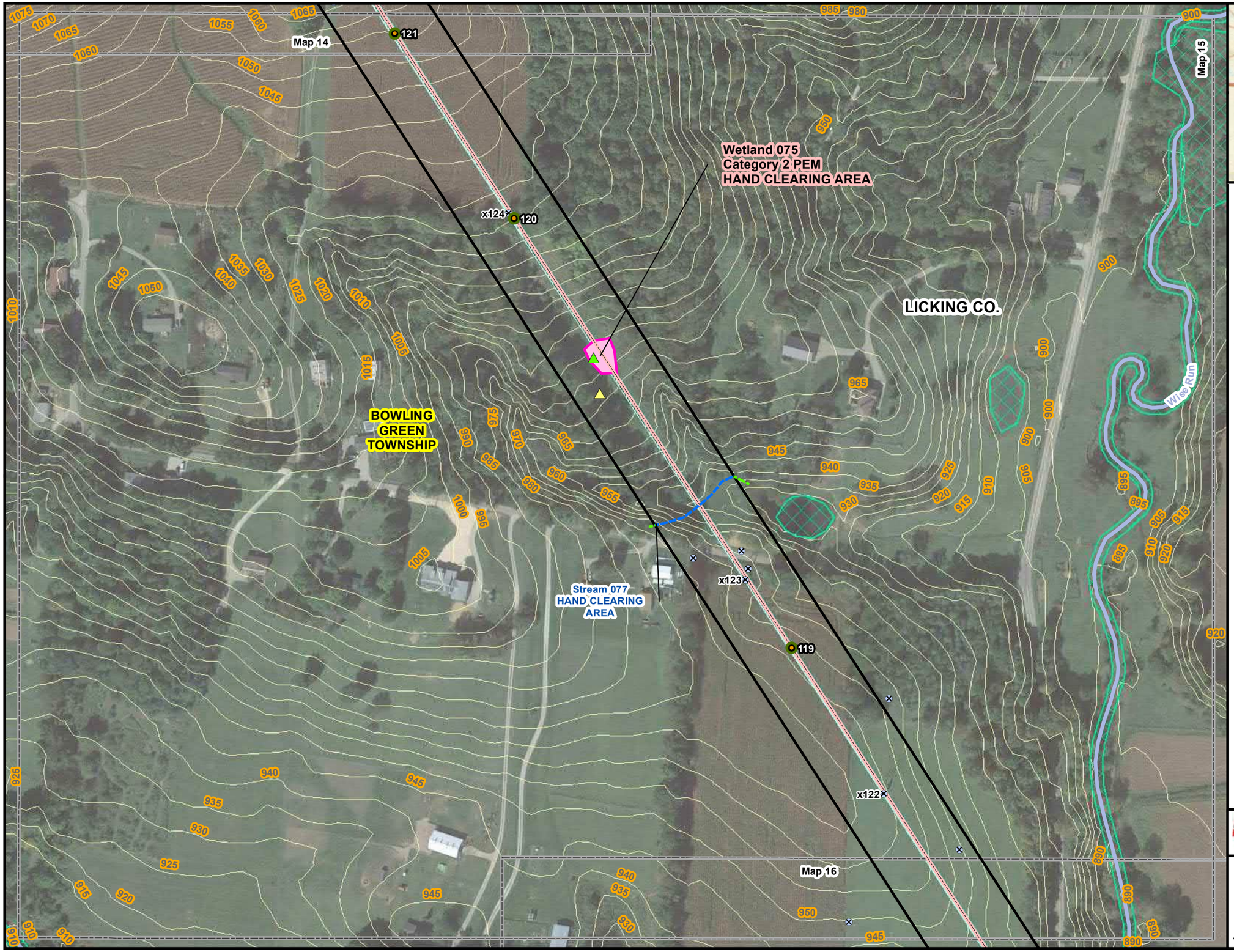
AEP OHIO TRANSMISSION COMPANY

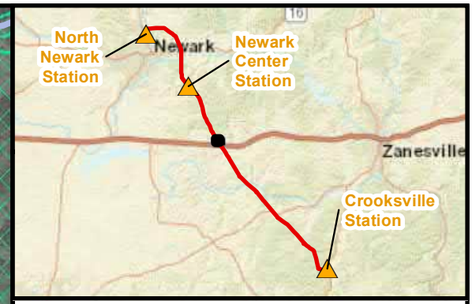
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3N
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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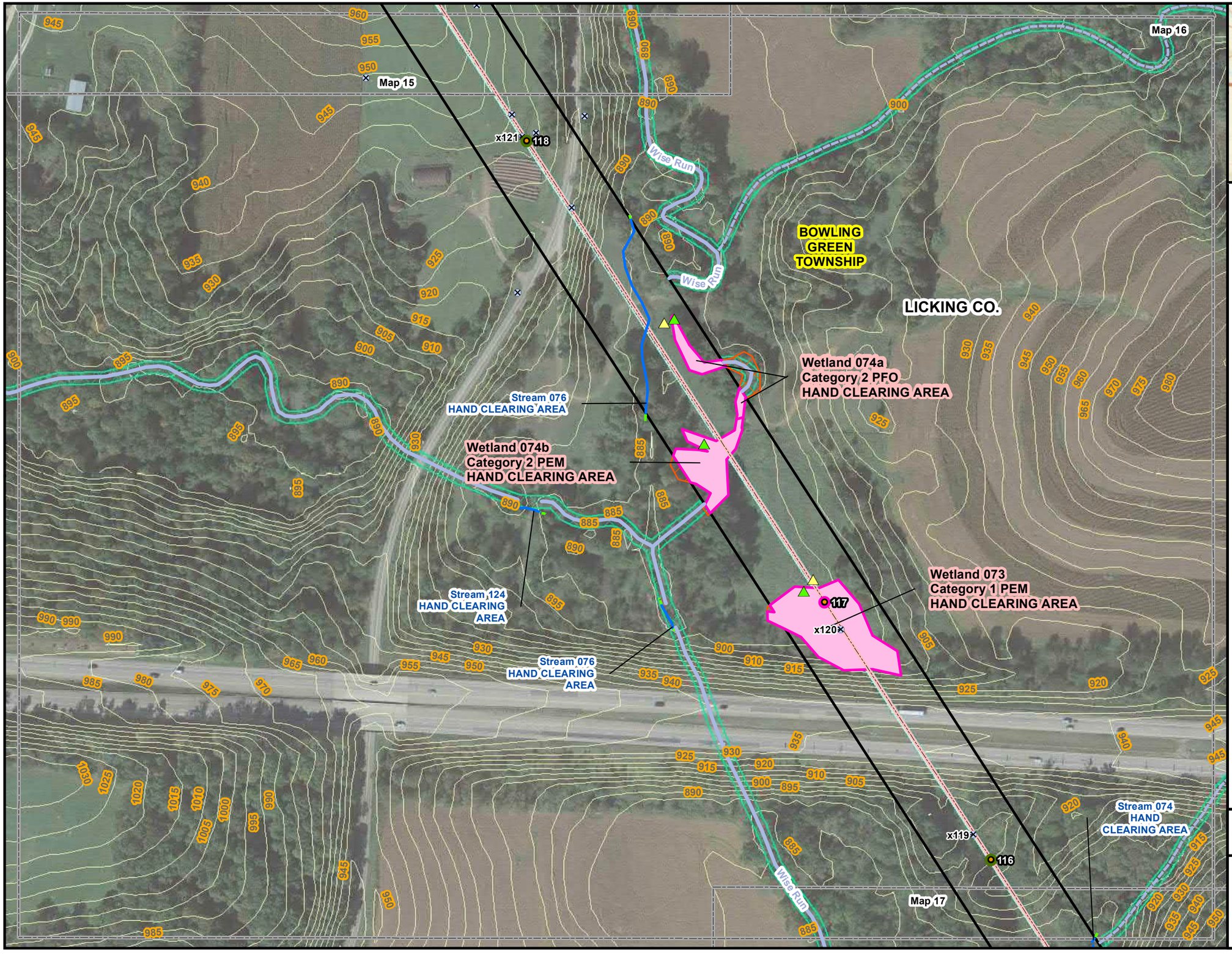
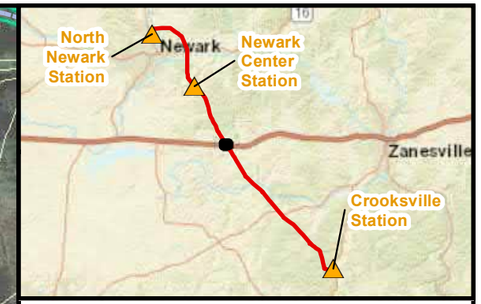
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3O
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Concrete Base Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

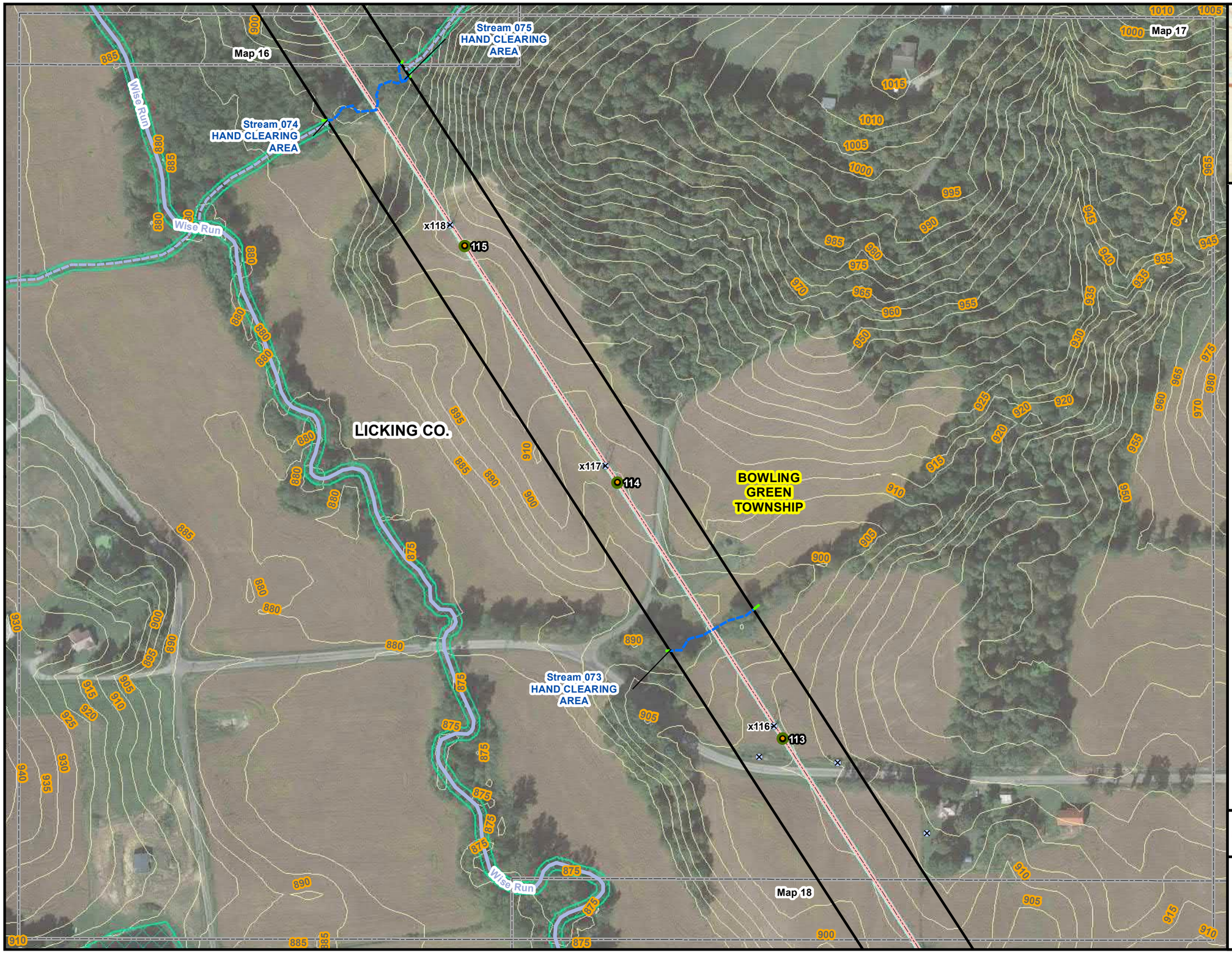
AEP OHIO TRANSMISSION COMPANY

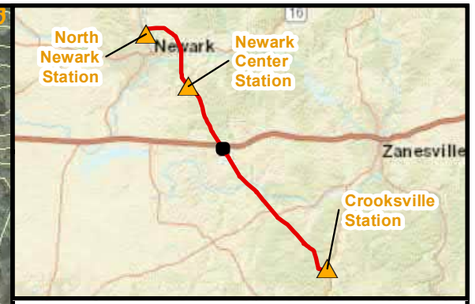
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3P
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

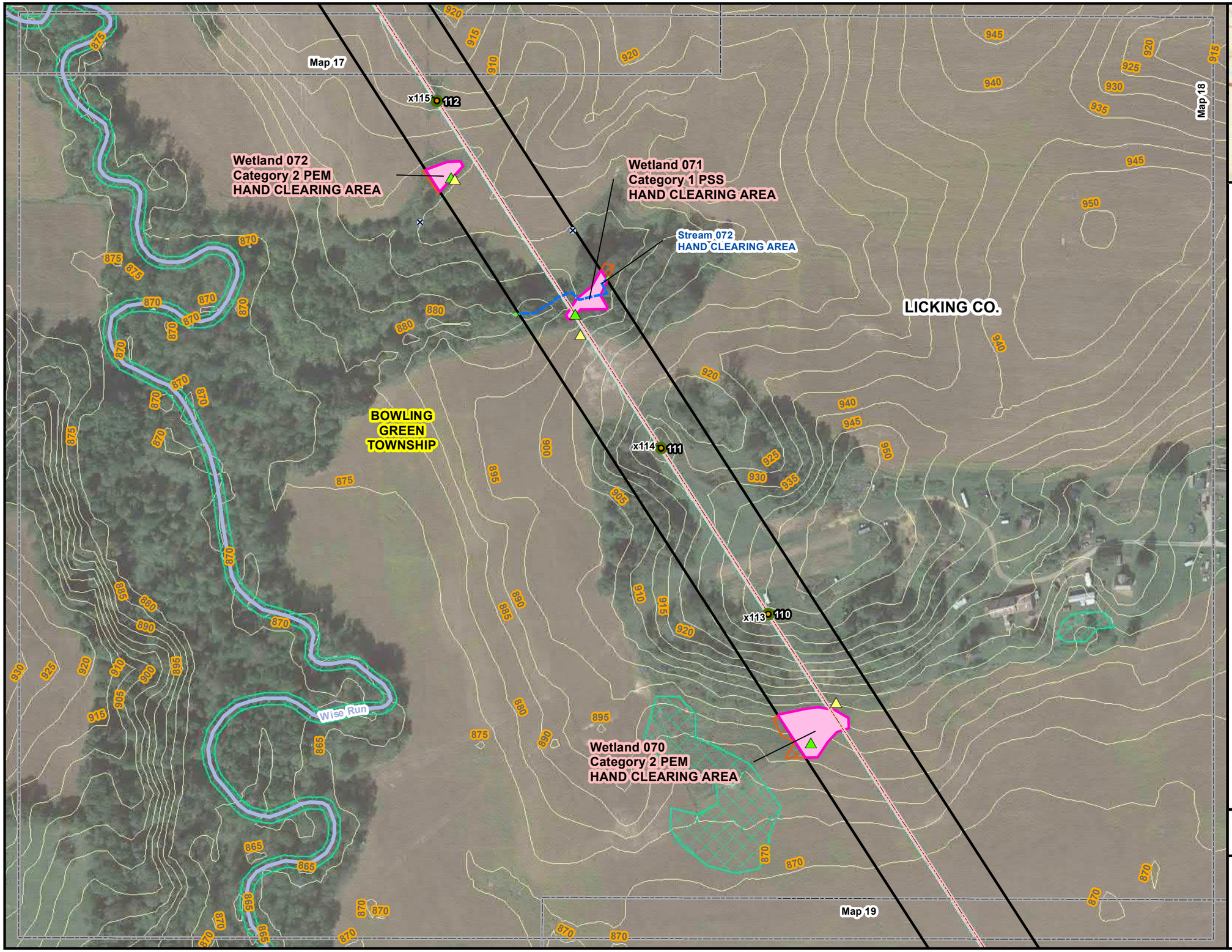
AEP OHIO TRANSMISSION COMPANY

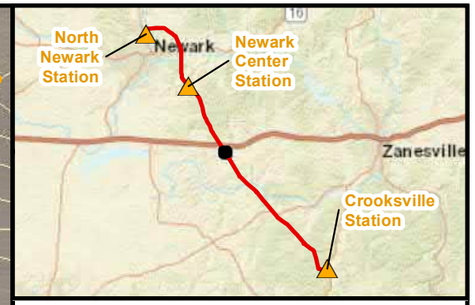
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3Q
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

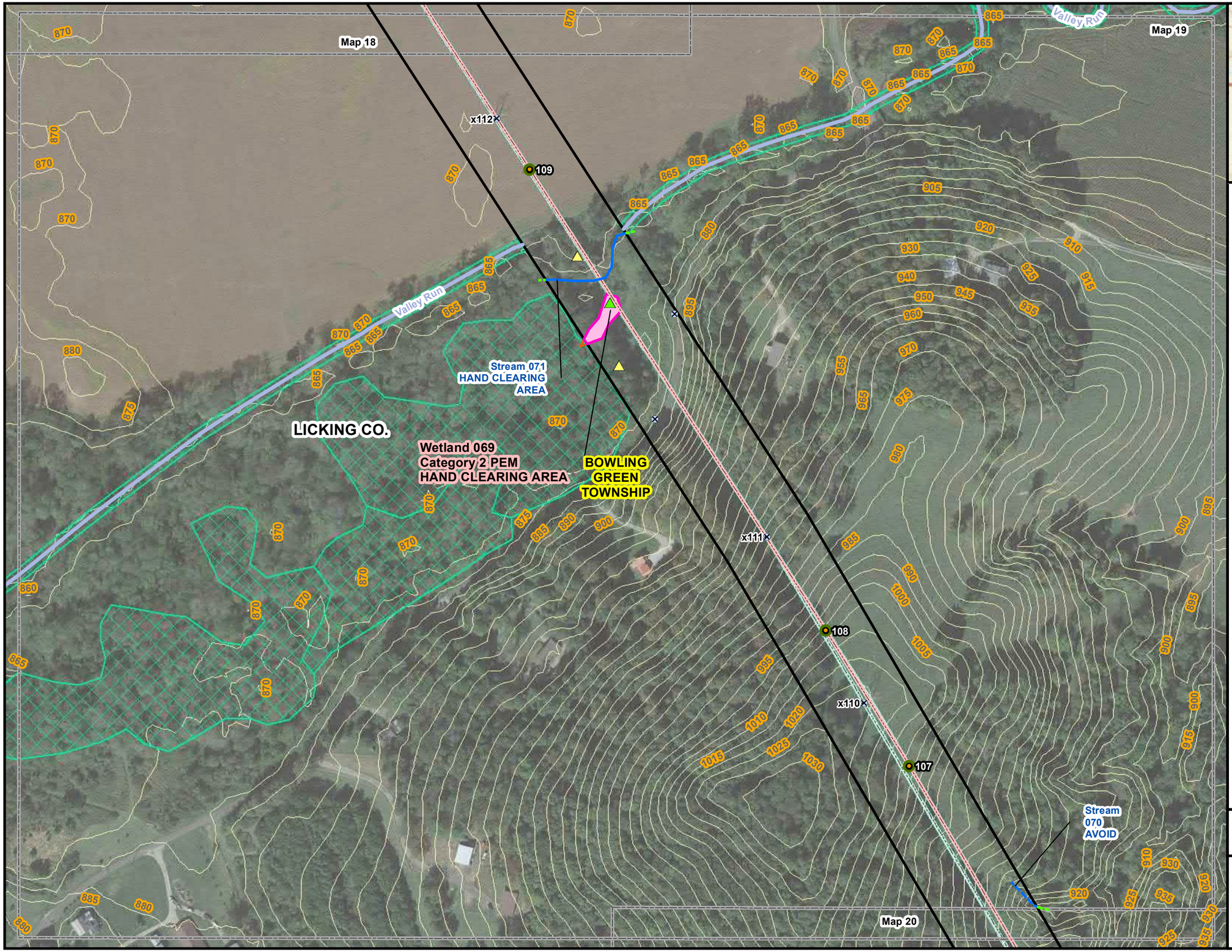
AEP OHIO TRANSMISSION COMPANY

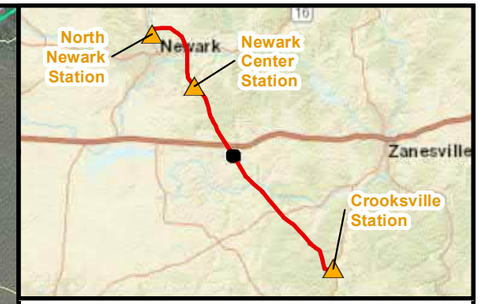
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3R
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

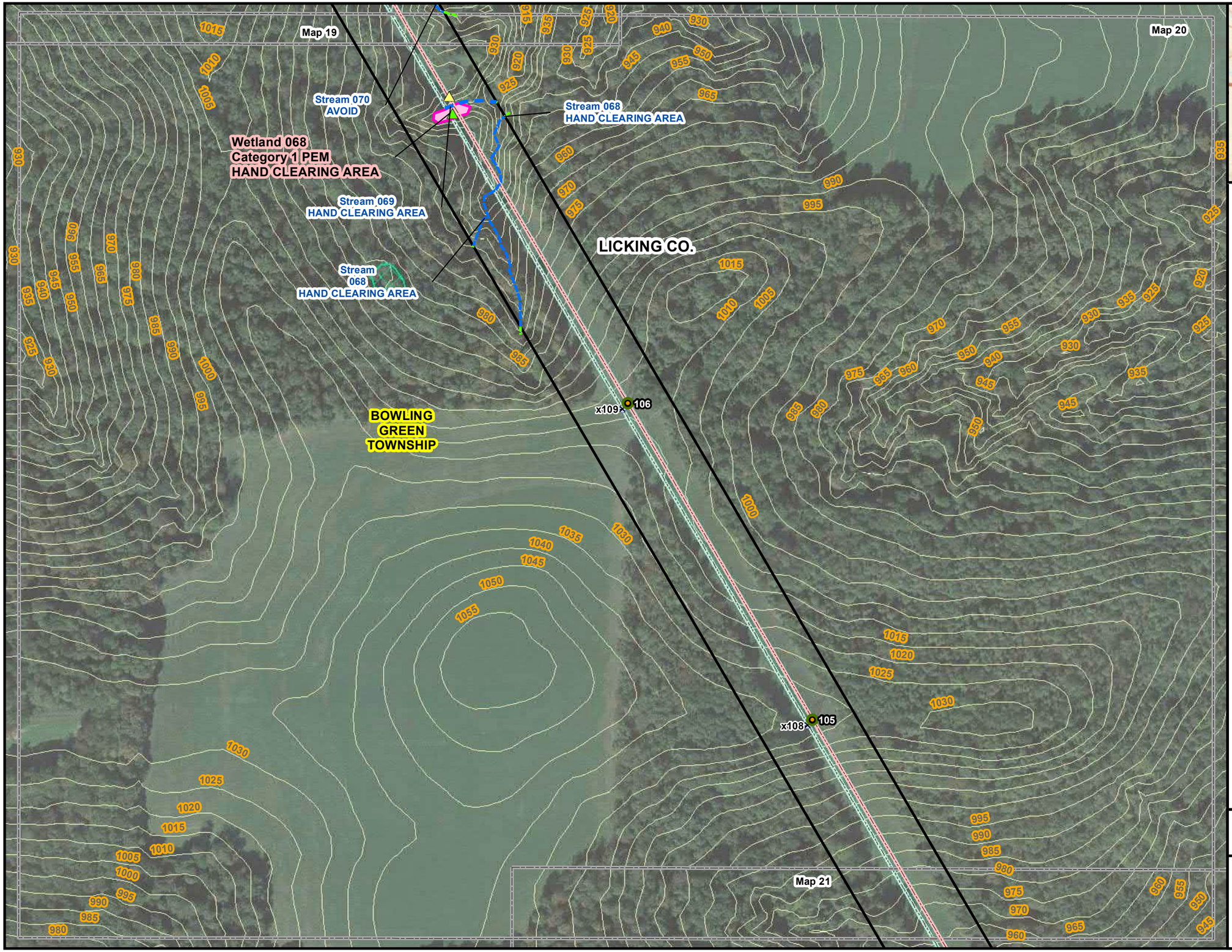
AEP OHIO TRANSMISSION COMPANY

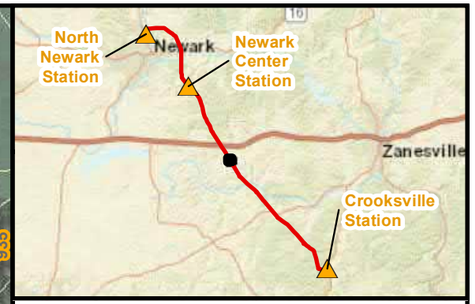
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3S
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

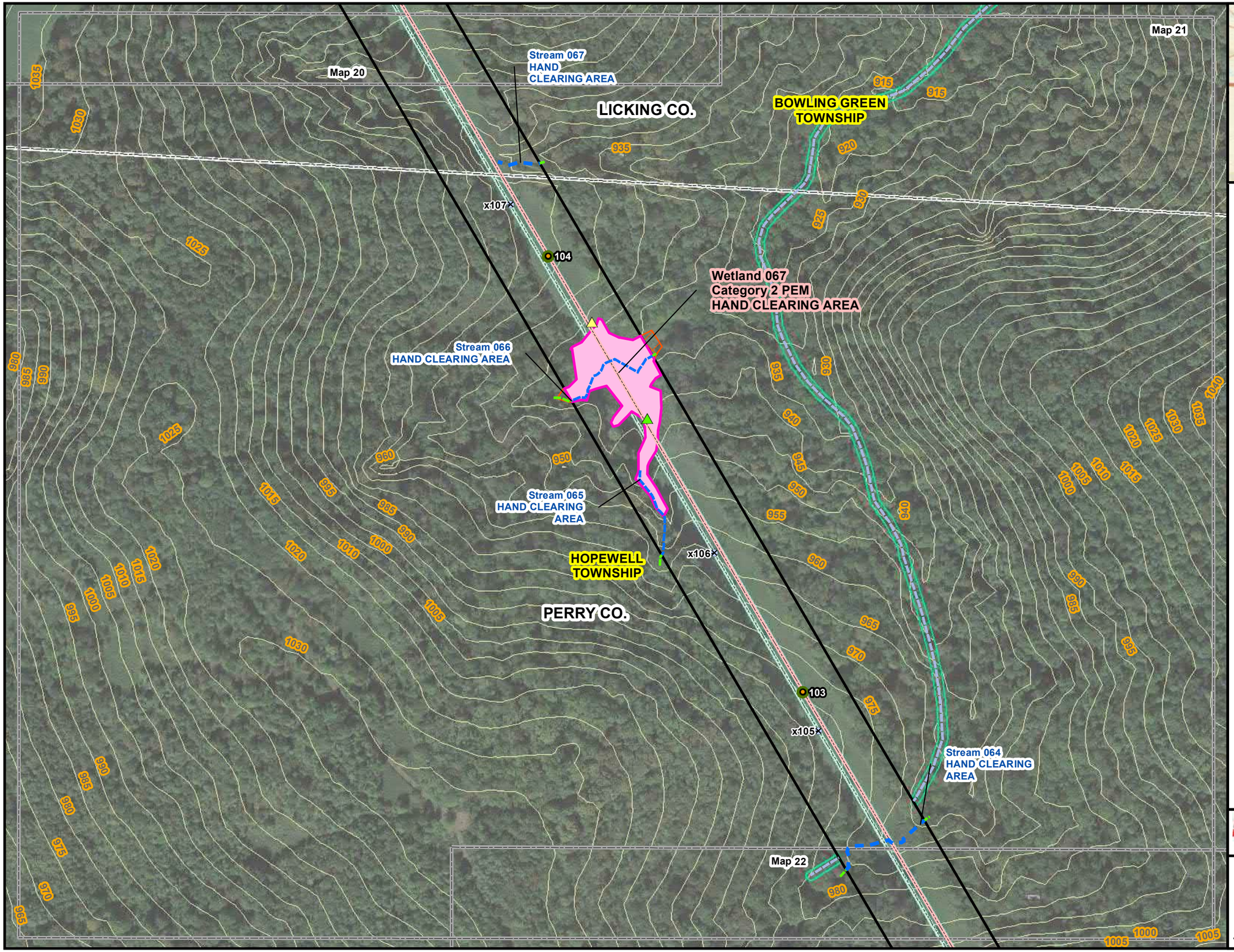
AEP OHIO TRANSMISSION COMPANY

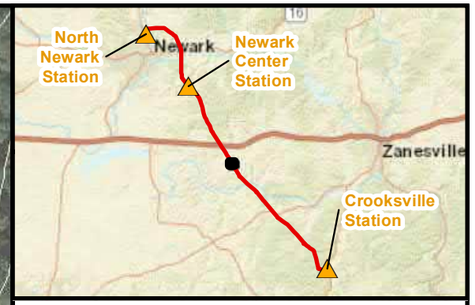
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3T
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

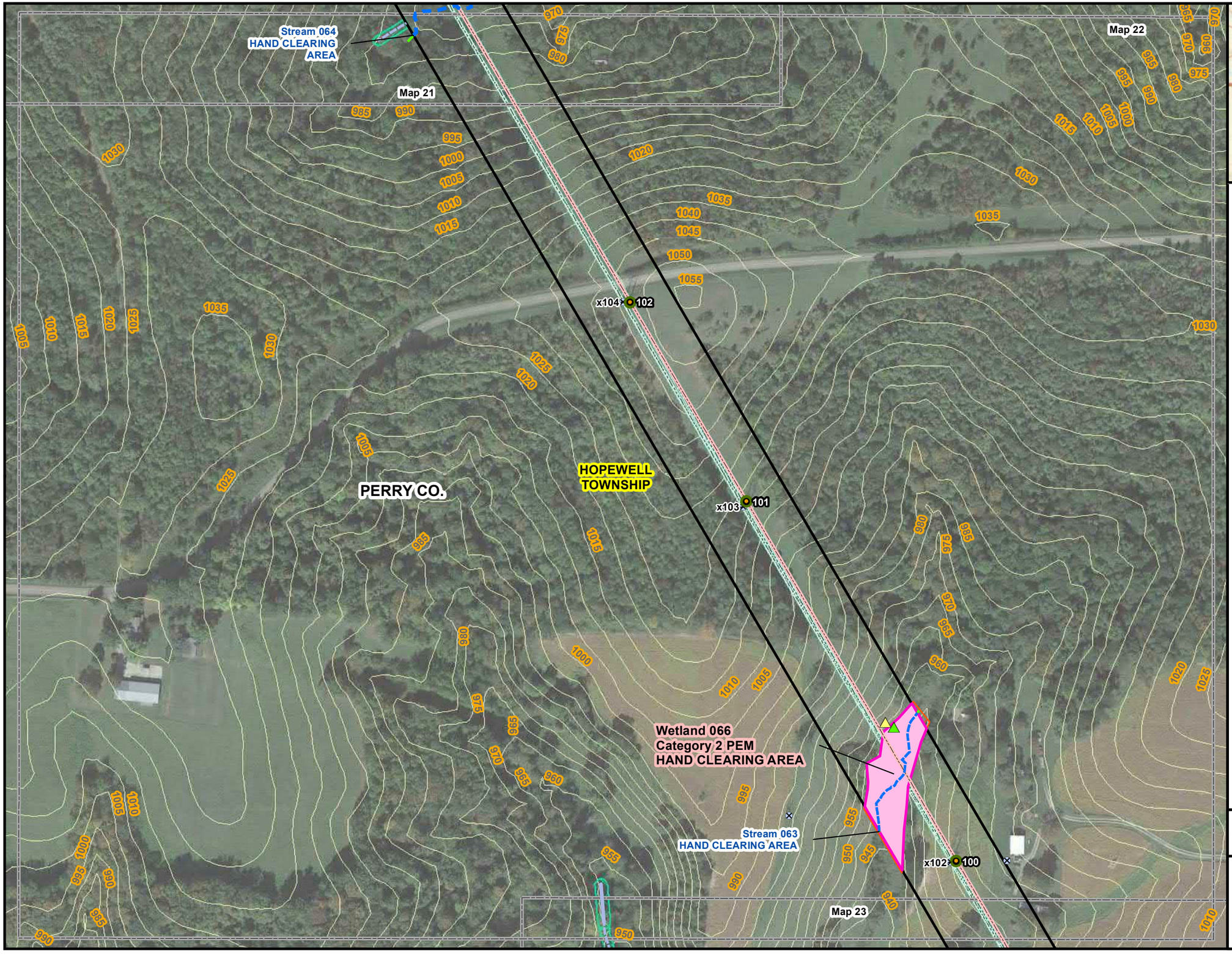
AEP OHIO TRANSMISSION COMPANY

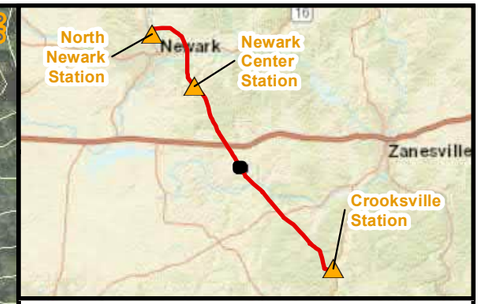
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3U
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

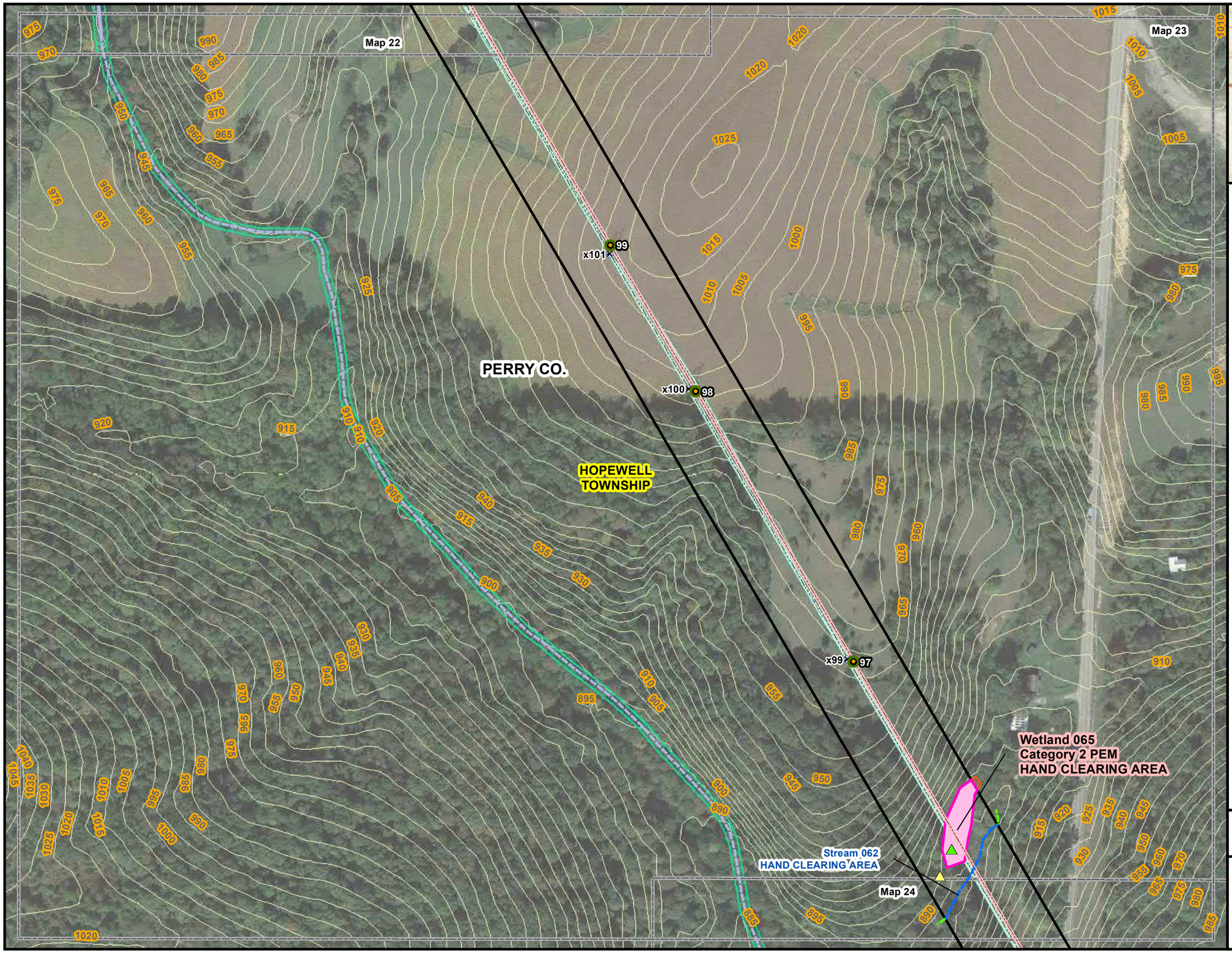
AEP OHIO TRANSMISSION COMPANY

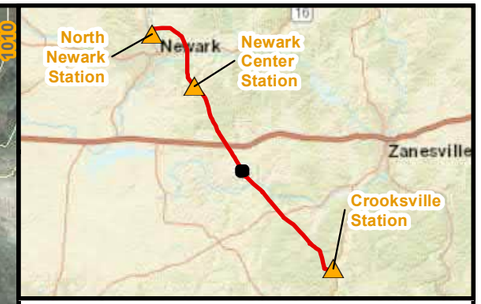
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3V
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

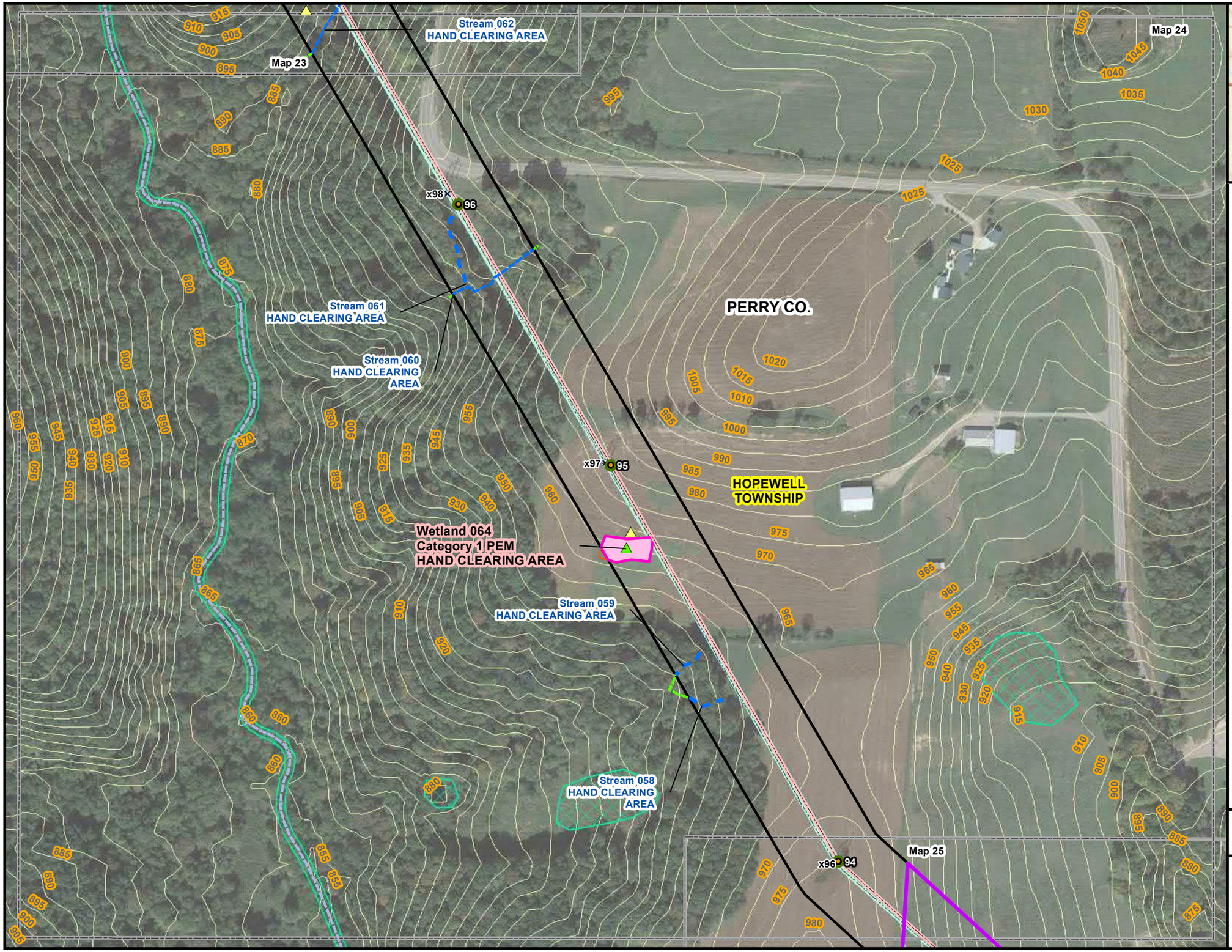
AEP OHIO TRANSMISSION COMPANY

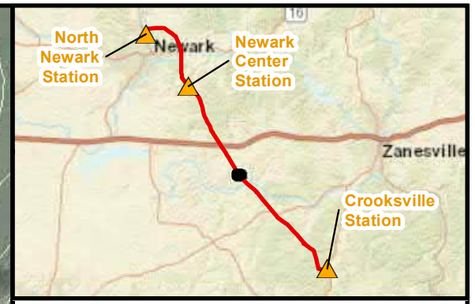
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3W
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

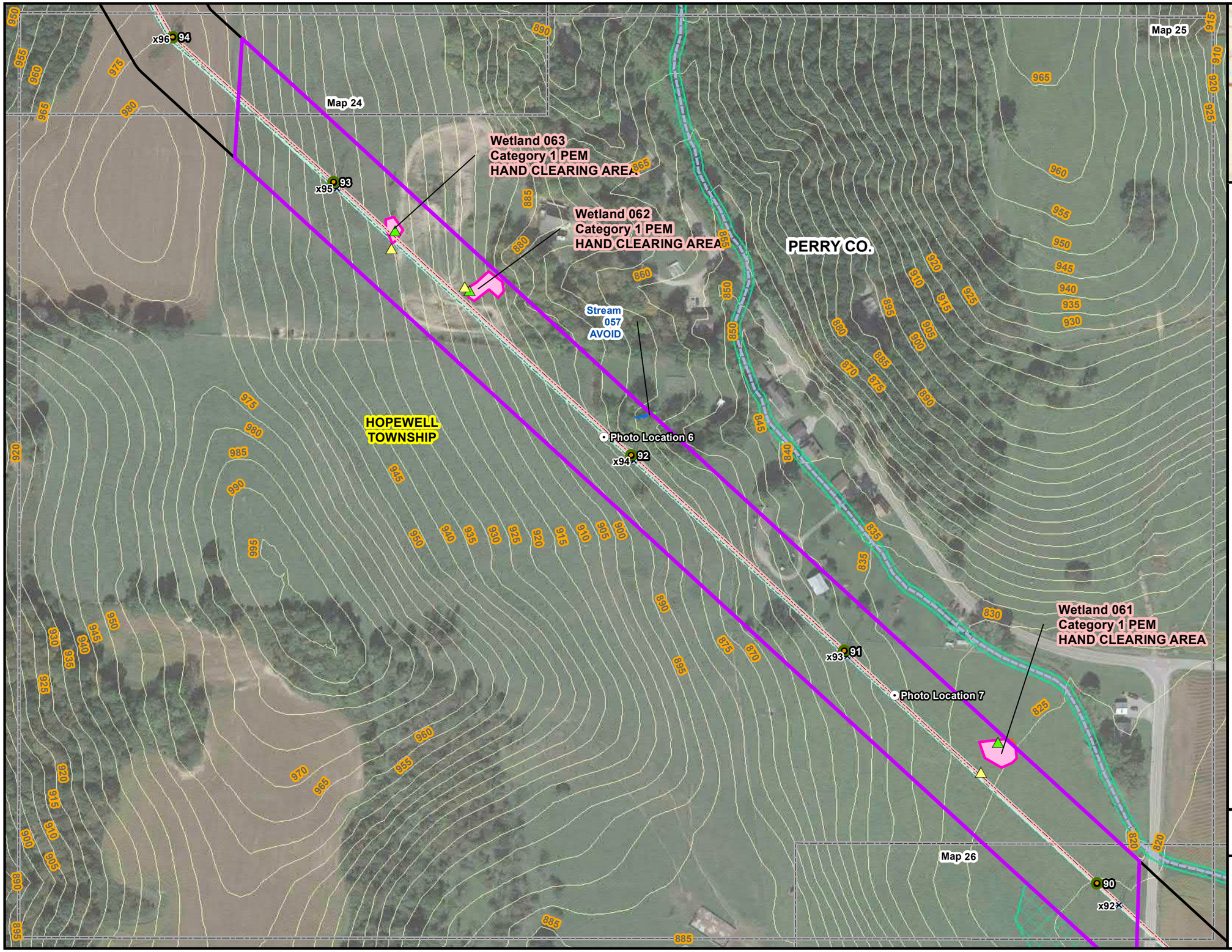
AEP OHIO TRANSMISSION COMPANY

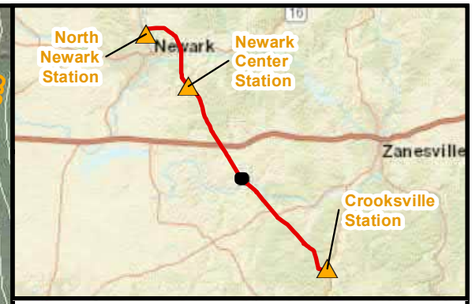
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3X
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Photographic Location
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

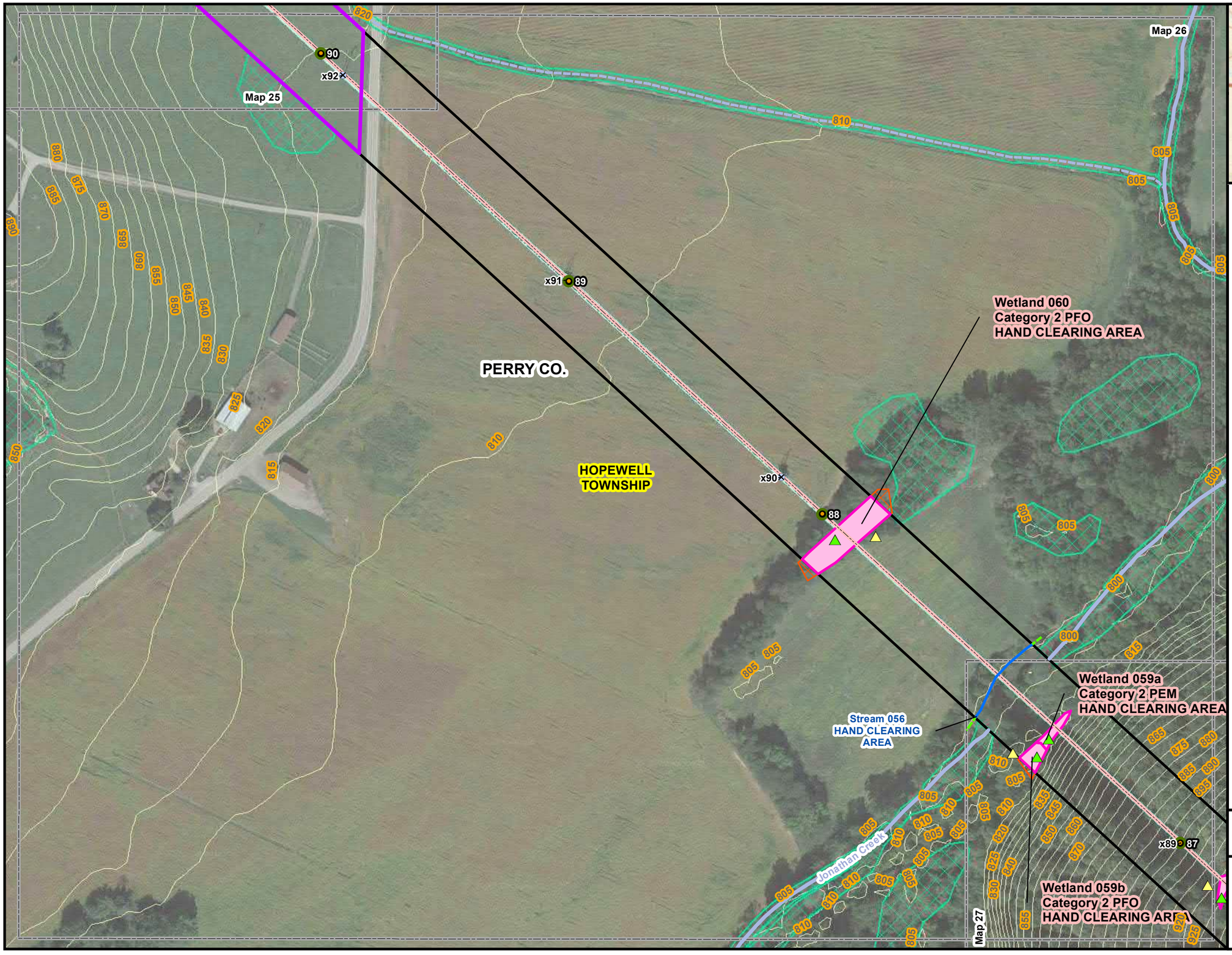
AEP OHIO TRANSMISSION COMPANY

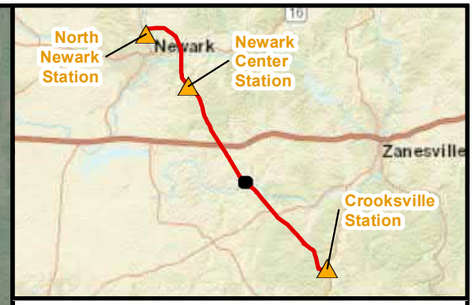
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3Y
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

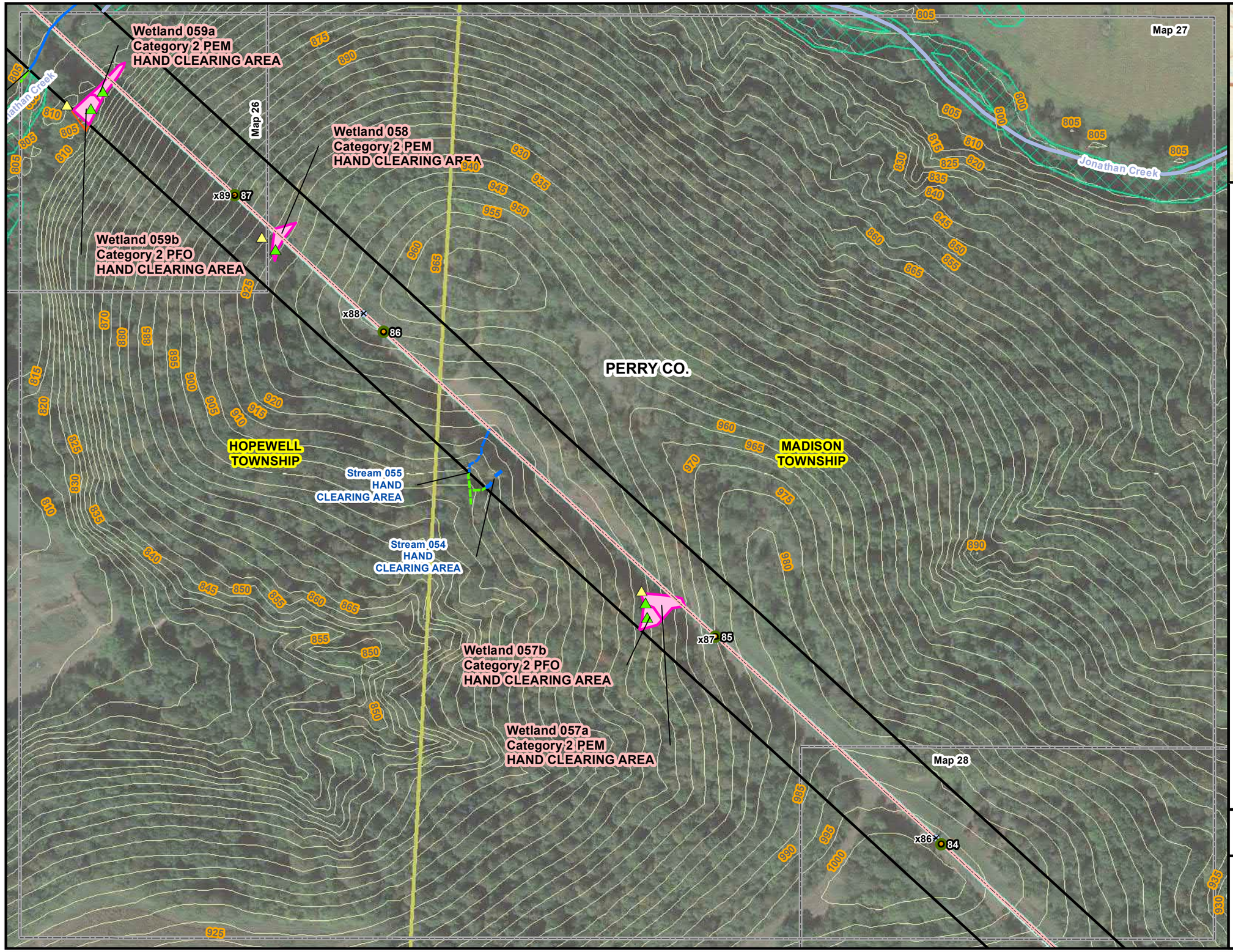
AEP OHIO TRANSMISSION COMPANY

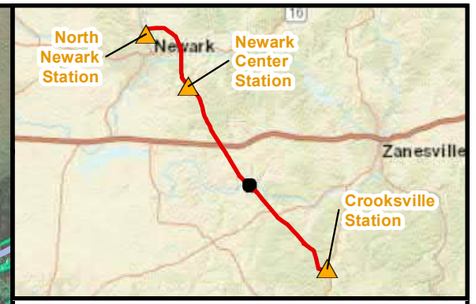
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3Z
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

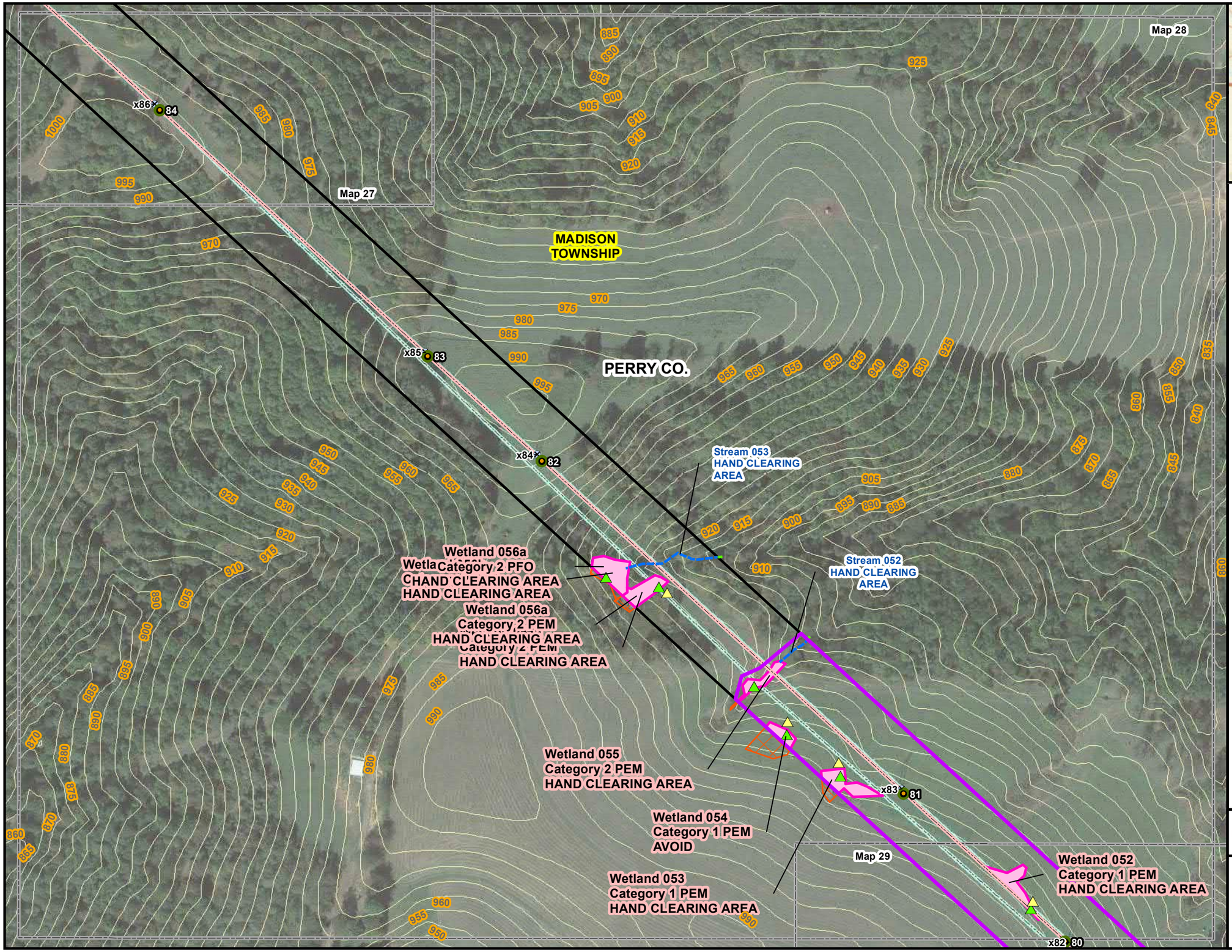
AEP OHIO TRANSMISSION COMPANY

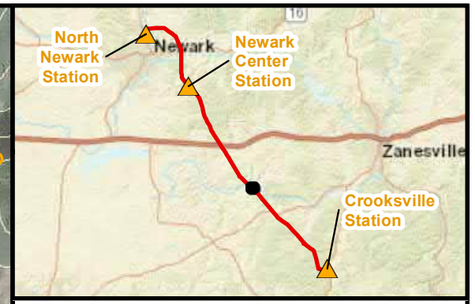
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AA
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Delineated Intermittent Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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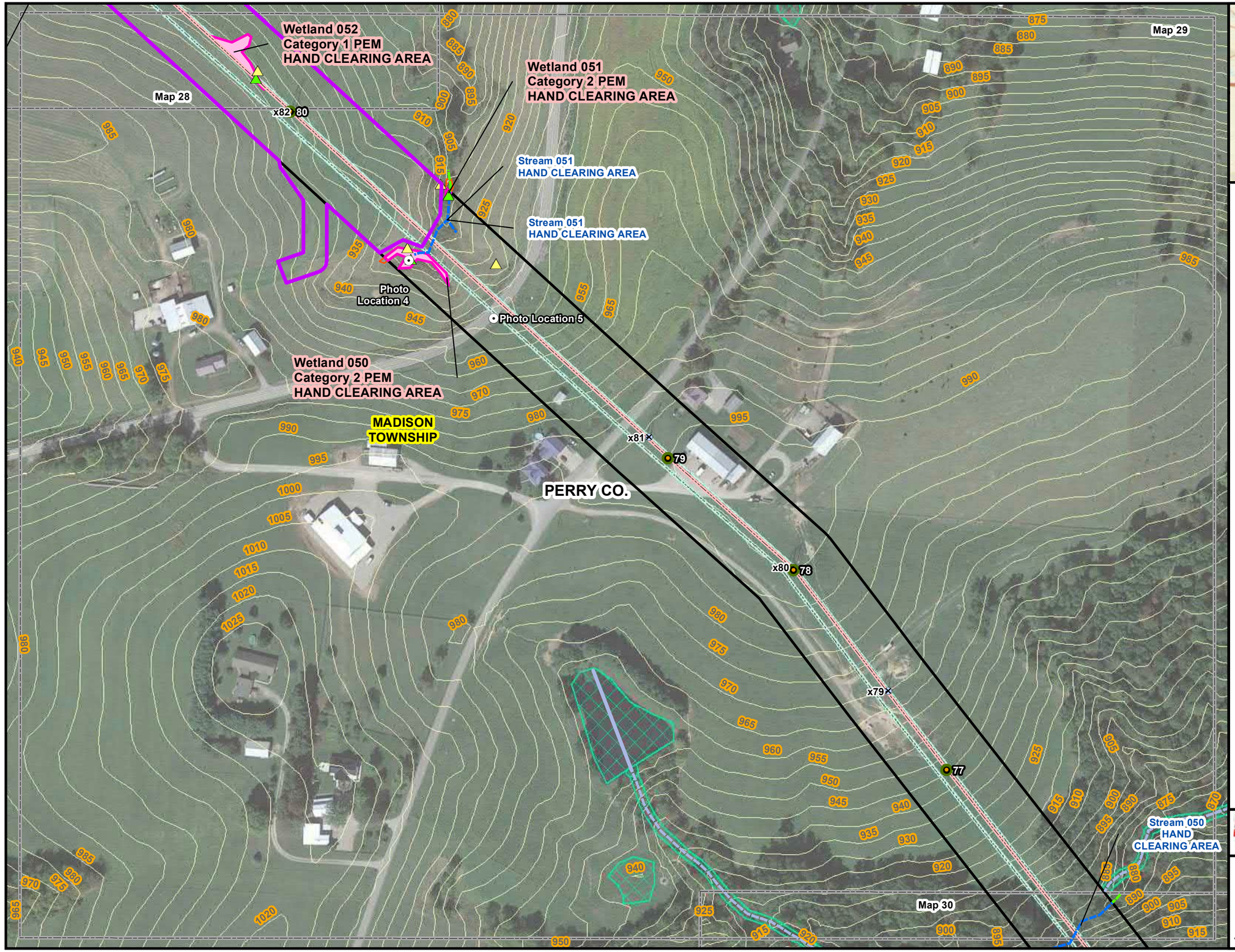
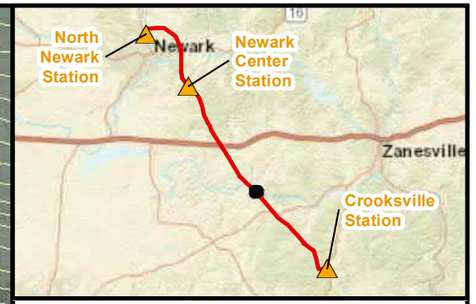
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AB
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Photographic Location
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AC
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

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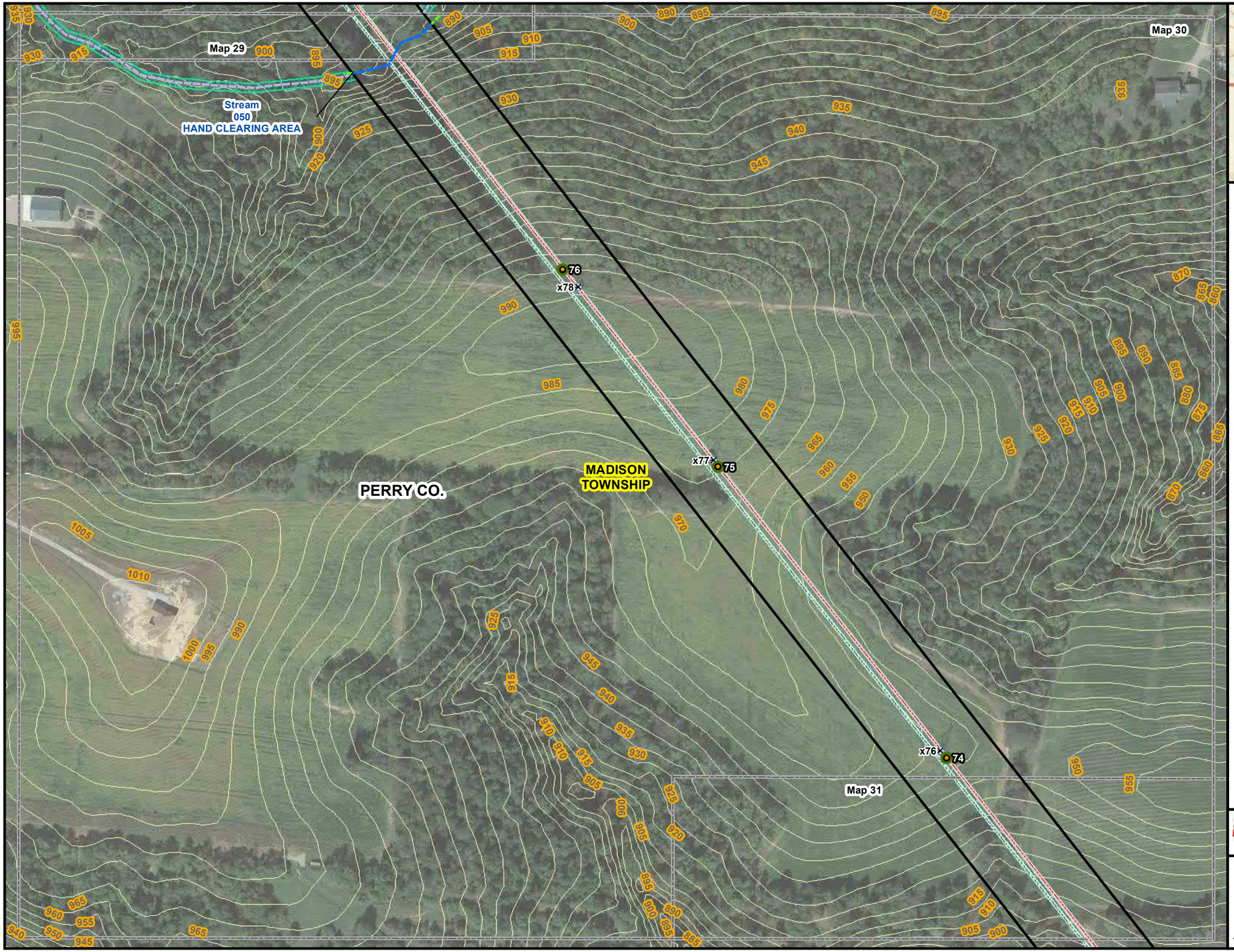
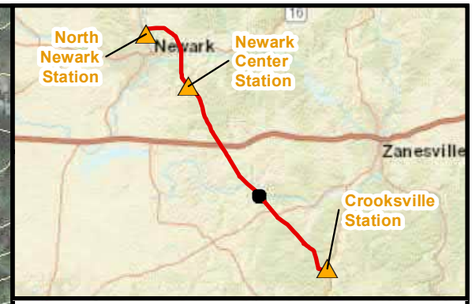




- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

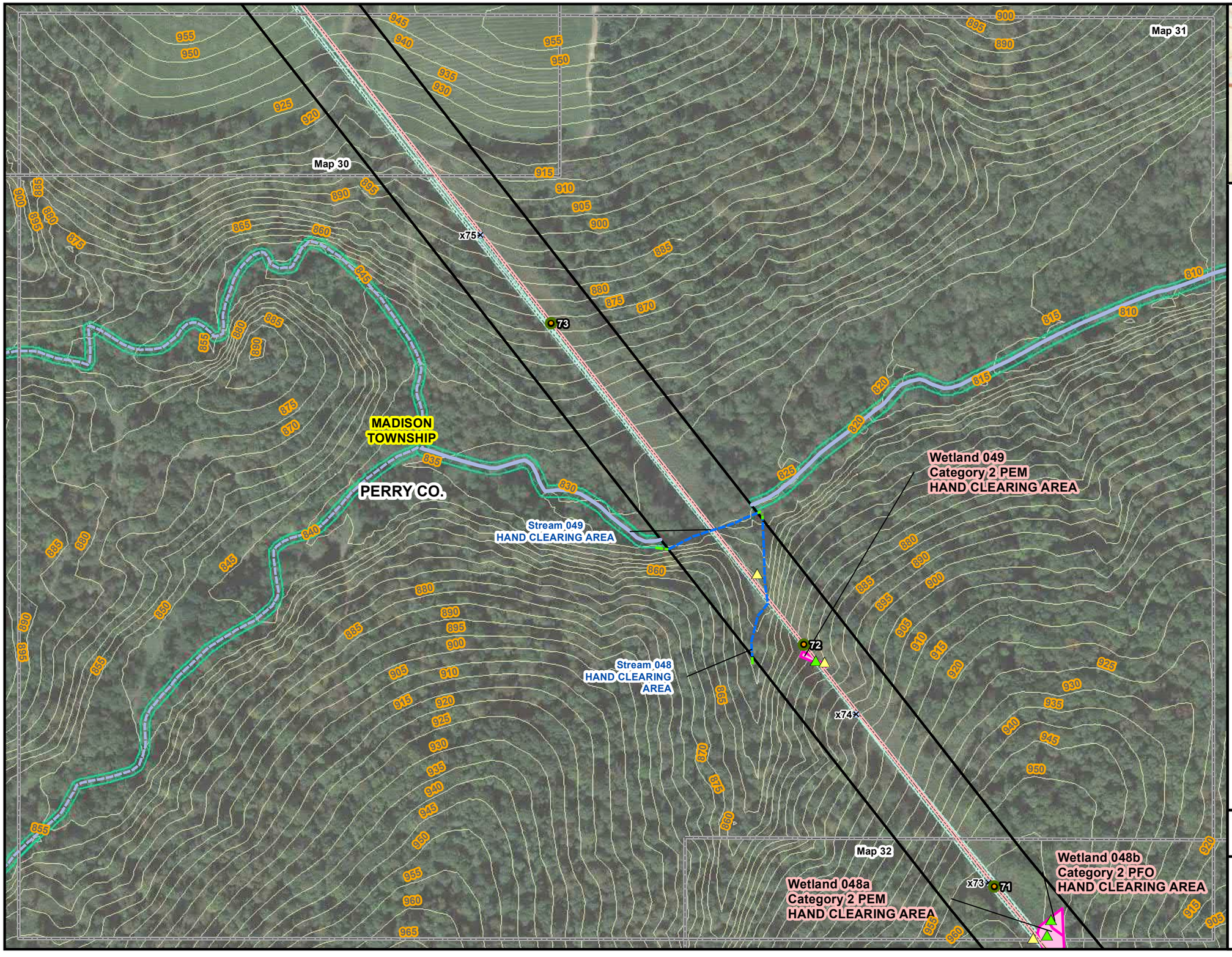
AEP OHIO TRANSMISSION COMPANY

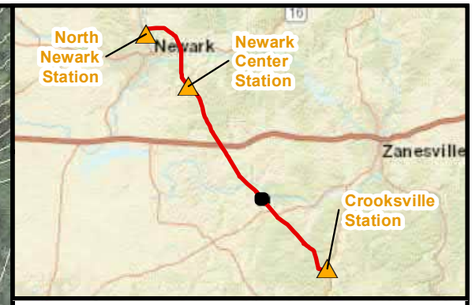
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AD
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AE
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Wetland 048a
Category 2 PEM
HAND CLEARING AREA

Wetland 048b
Category 2 PFO
HAND CLEARING AREA

Map 31

Map 32

MADISON TOWNSHIP

PERRY CO.

Wetland 047
Category 2 PEM
HAND CLEARING AREA

Stream 047
HAND CLEARING AREA

Stream 046
HAND CLEARING AREA

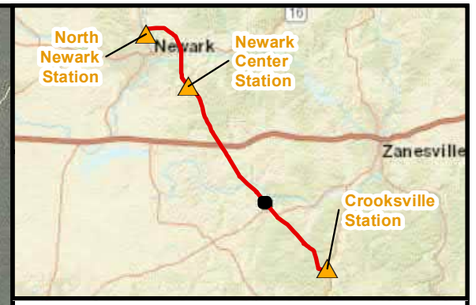
Wetland 046
Category 1 PEM
HAND CLEARING AREA

Stream 046
HAND CLEARING AREA

Map 33

Turkey Run

x73 71
x72 70
x71 69
x70 68



- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

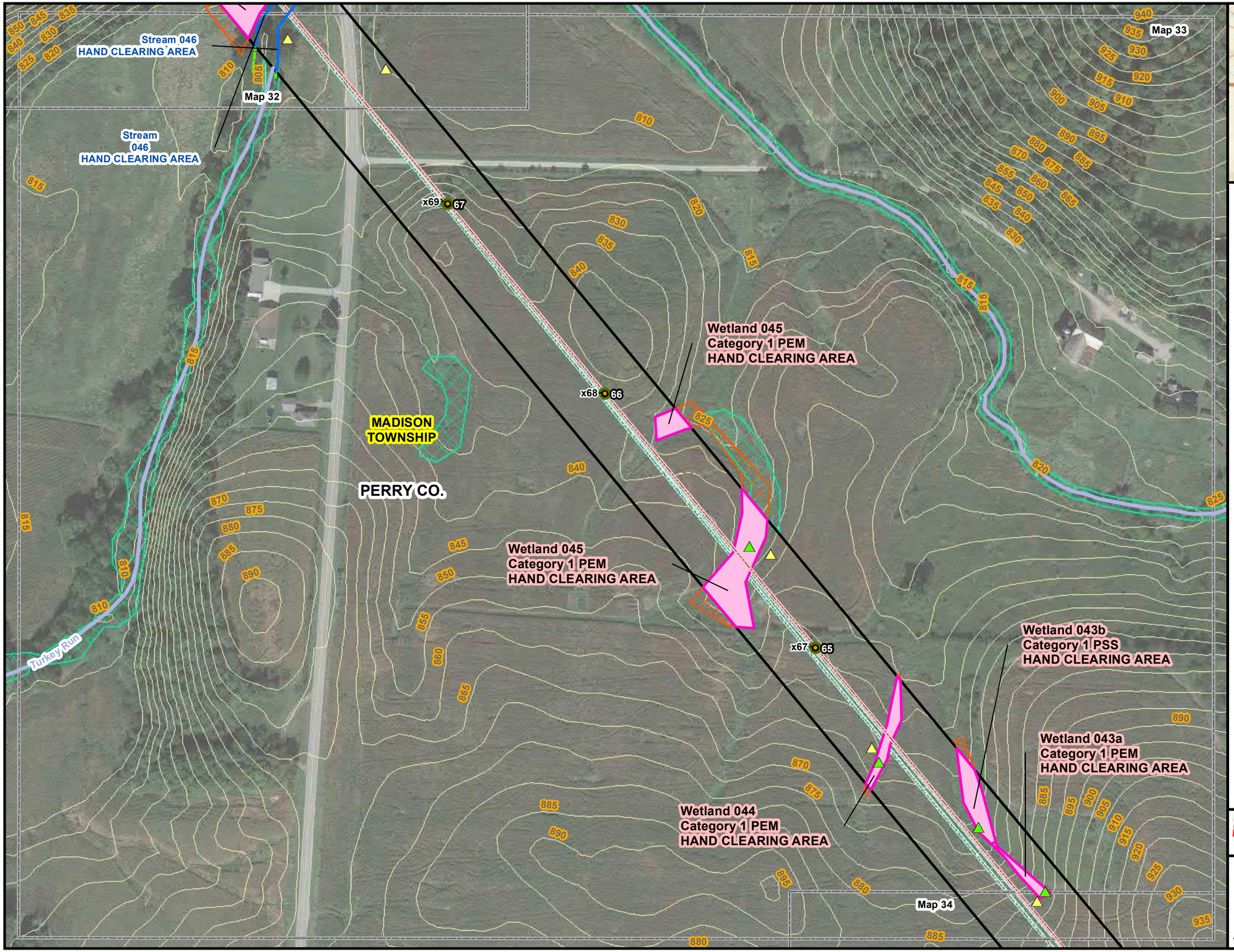
AEP OHIO TRANSMISSION COMPANY

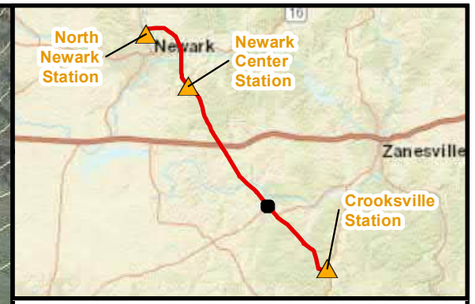
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AF
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

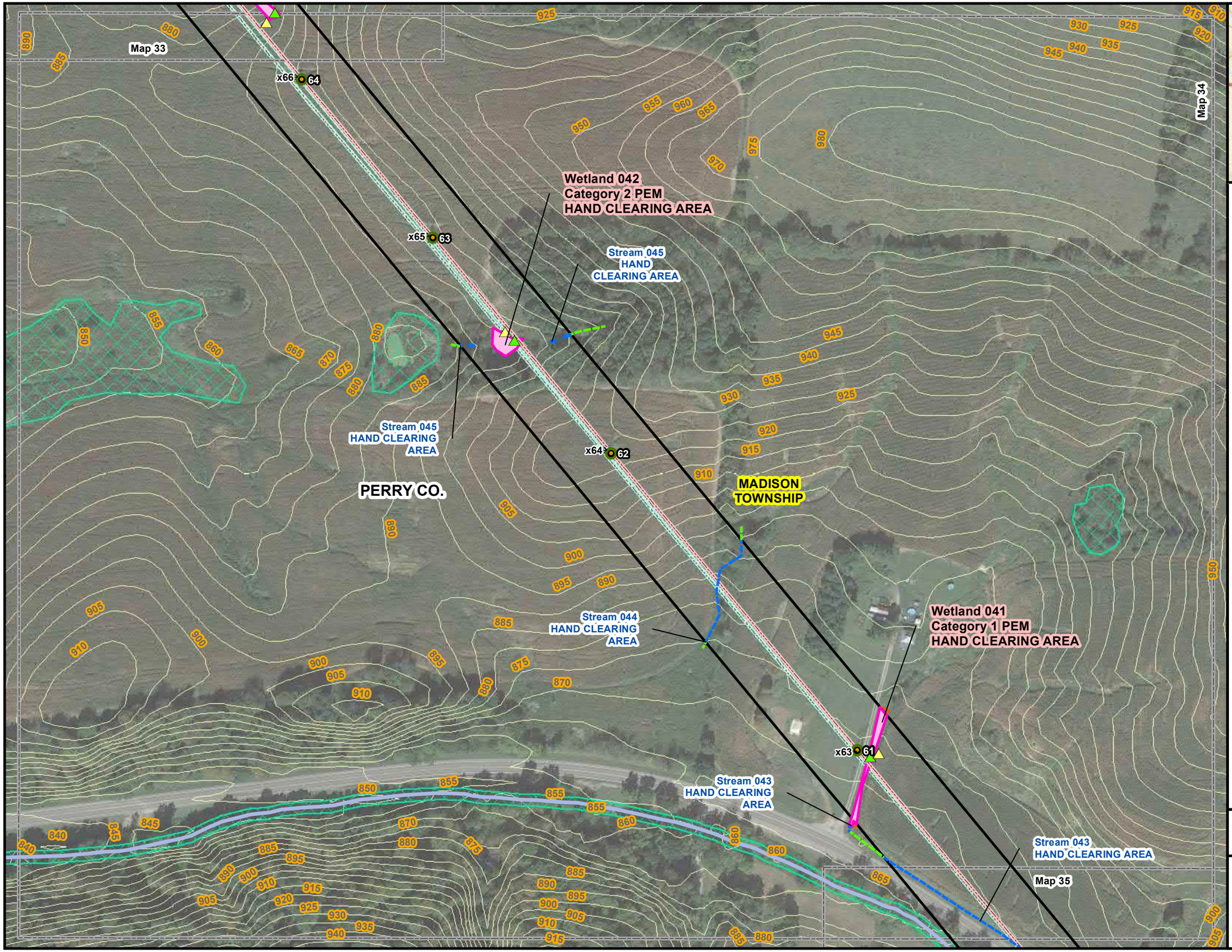
AEP OHIO TRANSMISSION COMPANY

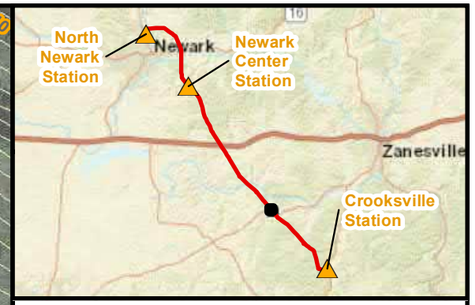
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AG
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

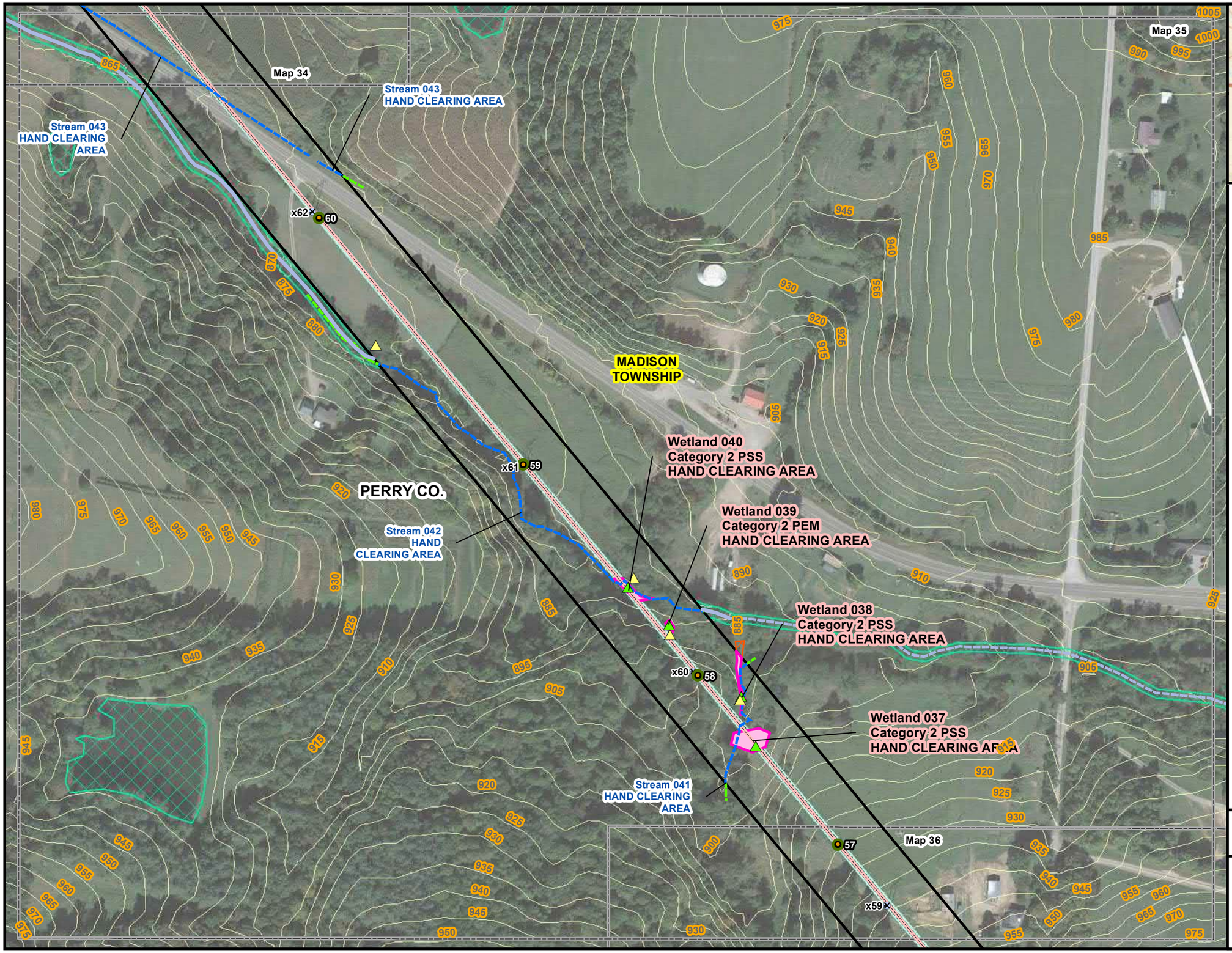
AEP OHIO TRANSMISSION COMPANY

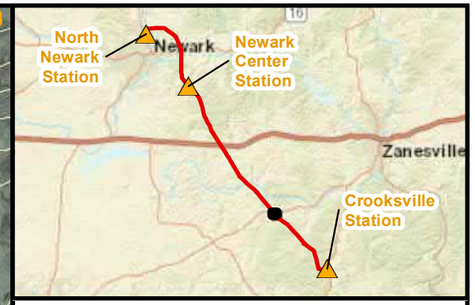
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AH
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

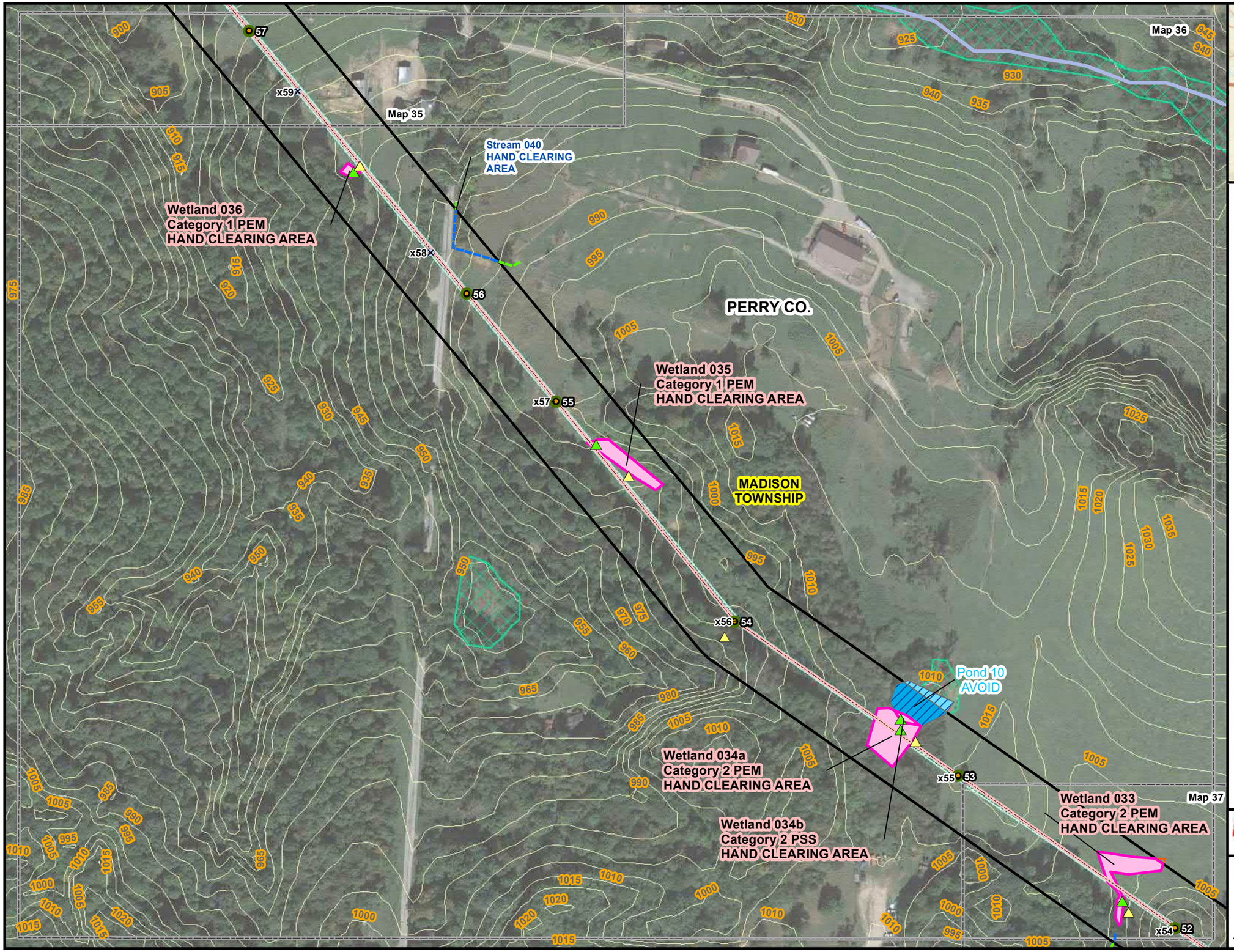
AEP OHIO TRANSMISSION COMPANY

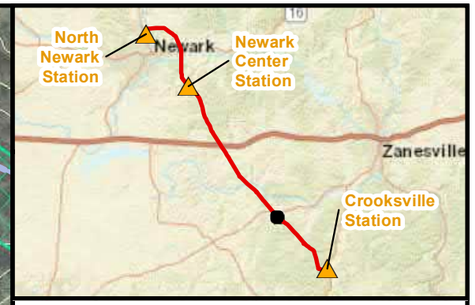
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AI
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
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AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AJ
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Wetland 033
Category 2 PEM
HAND CLEARING AREA

Stream 038
HAND
CLEARING AREA

Wetland 032a
Category 2 PEM
HAND CLEARING AREA

Wetland 032b
Category 2 PSS
HAND CLEARING AREA

Map 36

Map 37

PERRY CO.

Stream 039
HAND CLEARING
AREA

Wetland 031
Category 2 PFO
AVOID

Wetland 032a
Category 2 PEM
HAND CLEARING AREA

MADISON
TOWNSHIP

Stream 036
HAND CLEARING
AREA

Wetland 029
Category 2 PSS
HAND CLEARING AREA

Stream 037
HAND CLEARING AREA

Wetland 030
Category 2 PFO
AVOID

Stream 035
HAND CLEARING
AREA

Wetland 028
Category 2 PFO
HAND CLEARING AREA

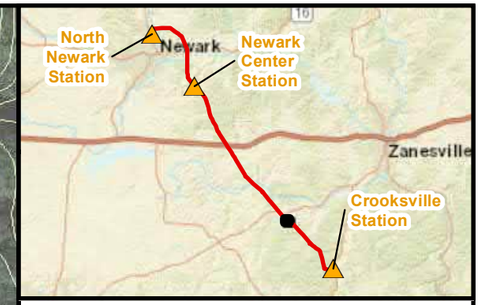
Map 38

Stream 034
HAND CLEARING AREA

Wetland 027b
Category 2 PFO
HAND CLEARING AREA

Wetland 027a
Category 2 PEM
HAND CLEARING AREA

55 x55 52 x54 51 x53 50 x52 49 x51 48 x50



- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AK
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Stream 034
HAND CLEARING AREA

Map 37

Map 38

MUSKINGUM CO.

Stream 033a
HAND CLEARING
AREA

Stream
033b
AVOID

Wetland 112
Category 2 PEM
HAND CLEARING AREA

MADISON
TOWNSHIP

NEWTON
TOWNSHIP

Wetland 026
Category 2 PEM
HAND CLEARING AREA

Stream 032
HAND CLEARING
AREA

Stream 031
HAND CLEARING AREA

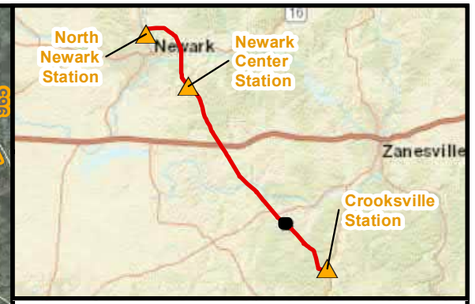
PERRY CO.

Map 39

Stream 030
HAND CLEARING
AREA

Wetland 025
Category 2 PEM
HAND CLEARING AREA

x50 48
x49 47
x48 46
x47 45
x46 44



- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Existing Pipeline
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

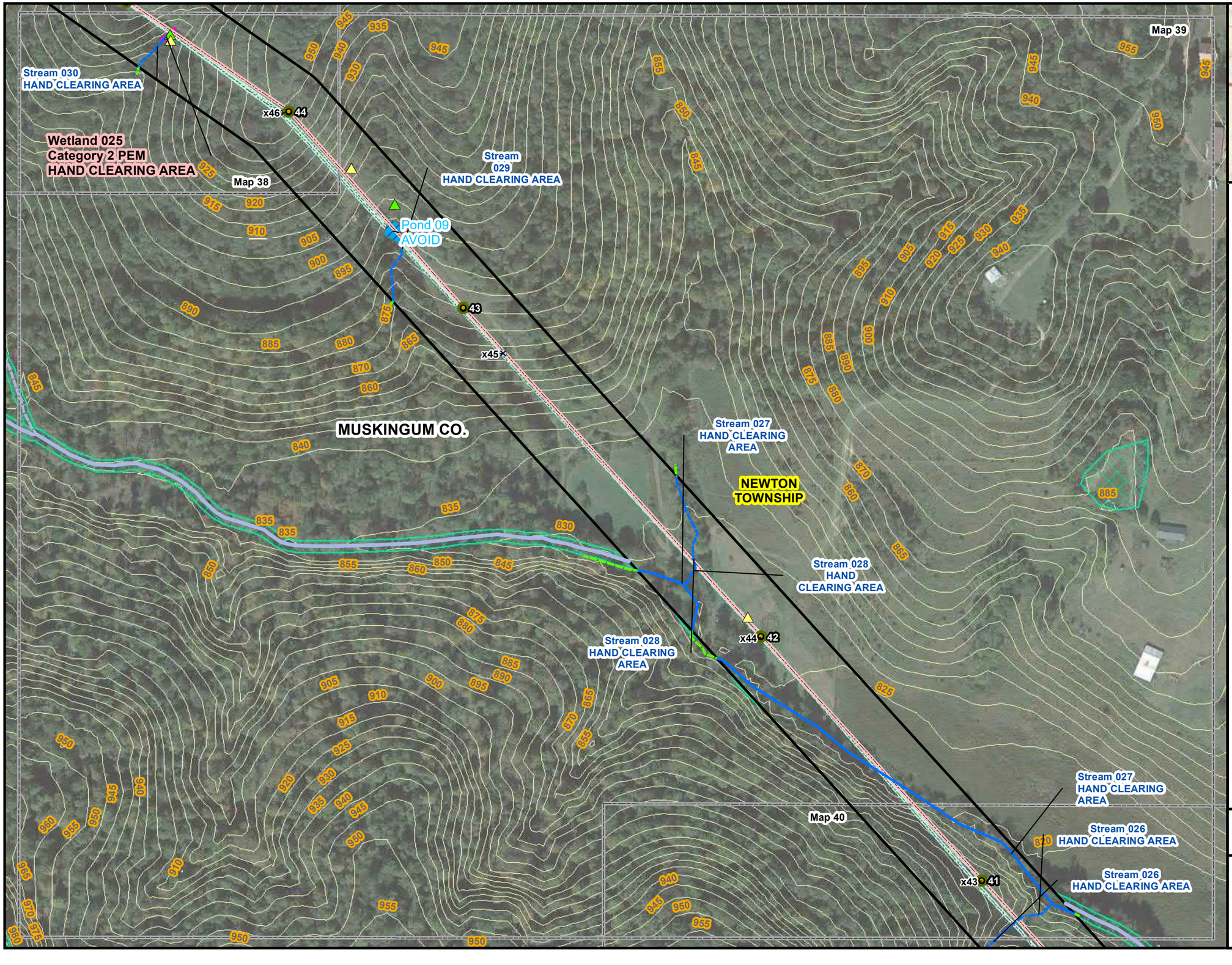
AEP OHIO TRANSMISSION COMPANY

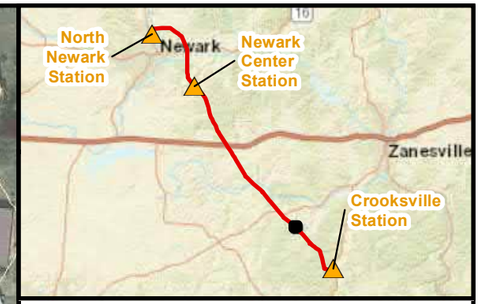
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AL
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

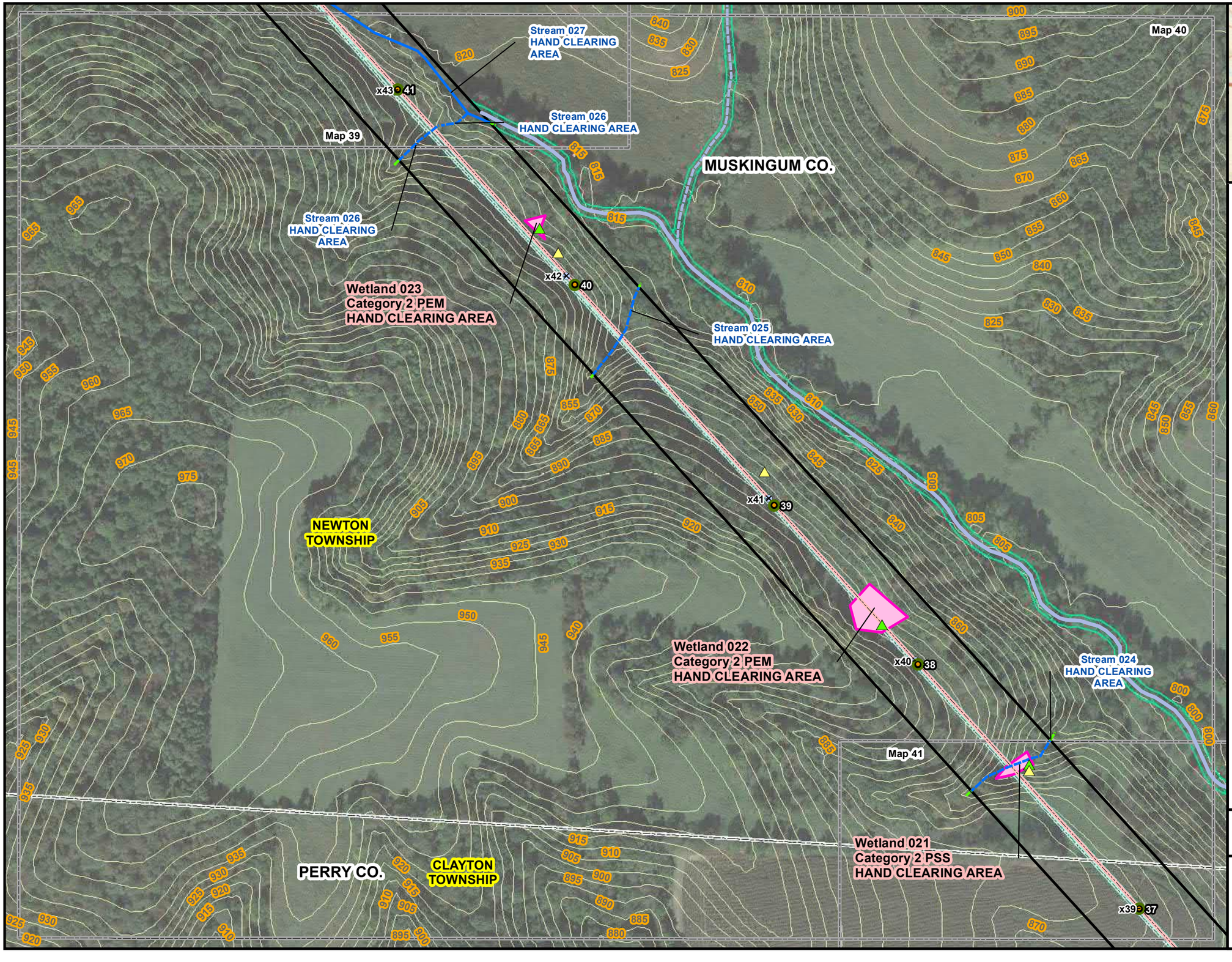
AEP OHIO TRANSMISSION COMPANY

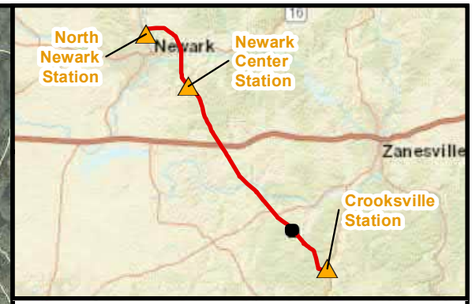
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AM
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

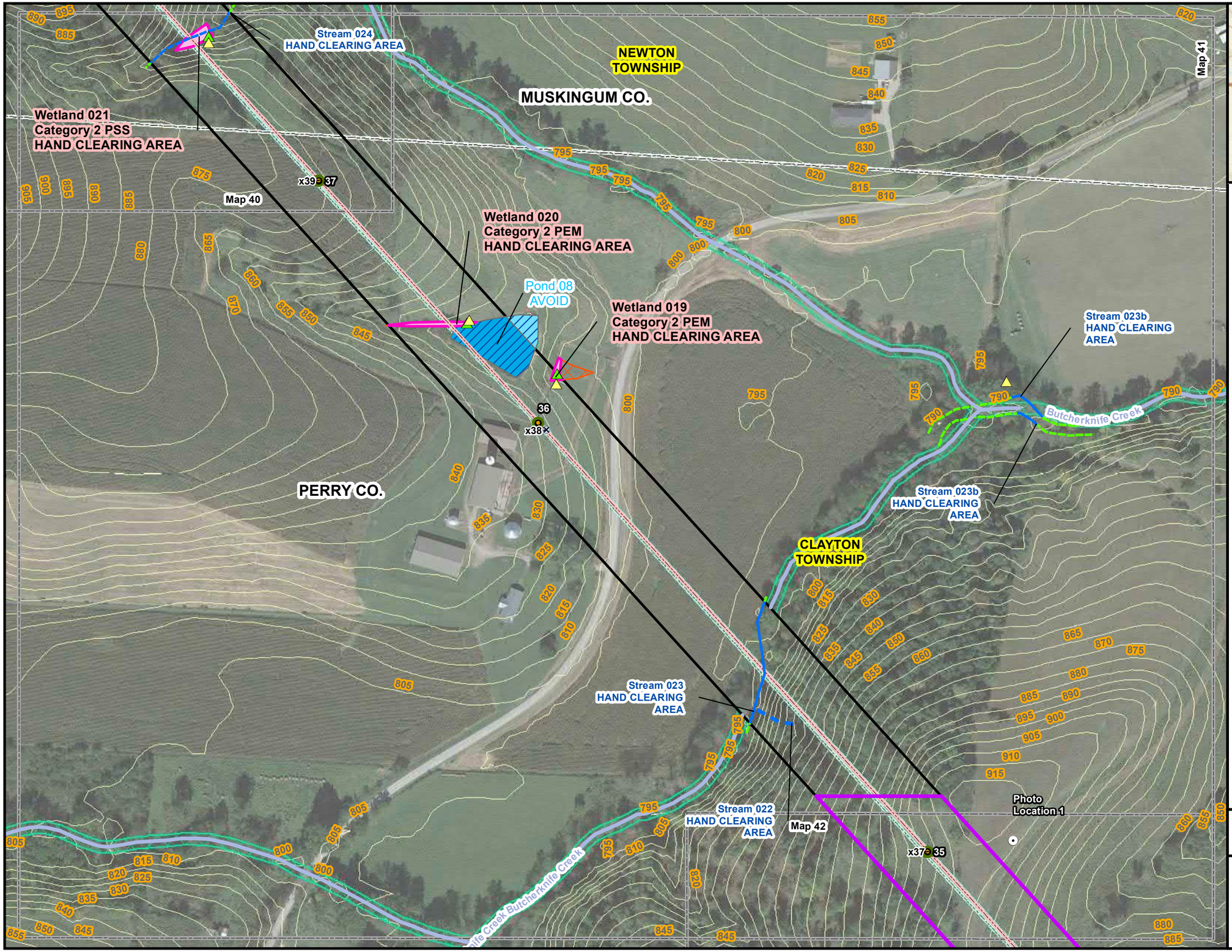
AEP OHIO TRANSMISSION COMPANY

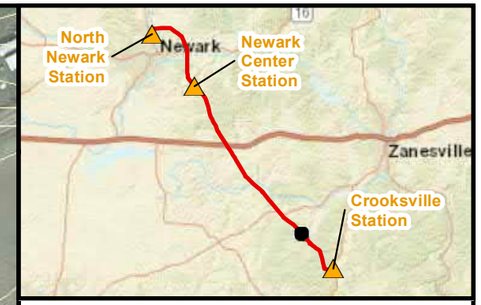
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AN
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Photographic Location
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Intermittent Stream
- Delineated Ephemeral Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

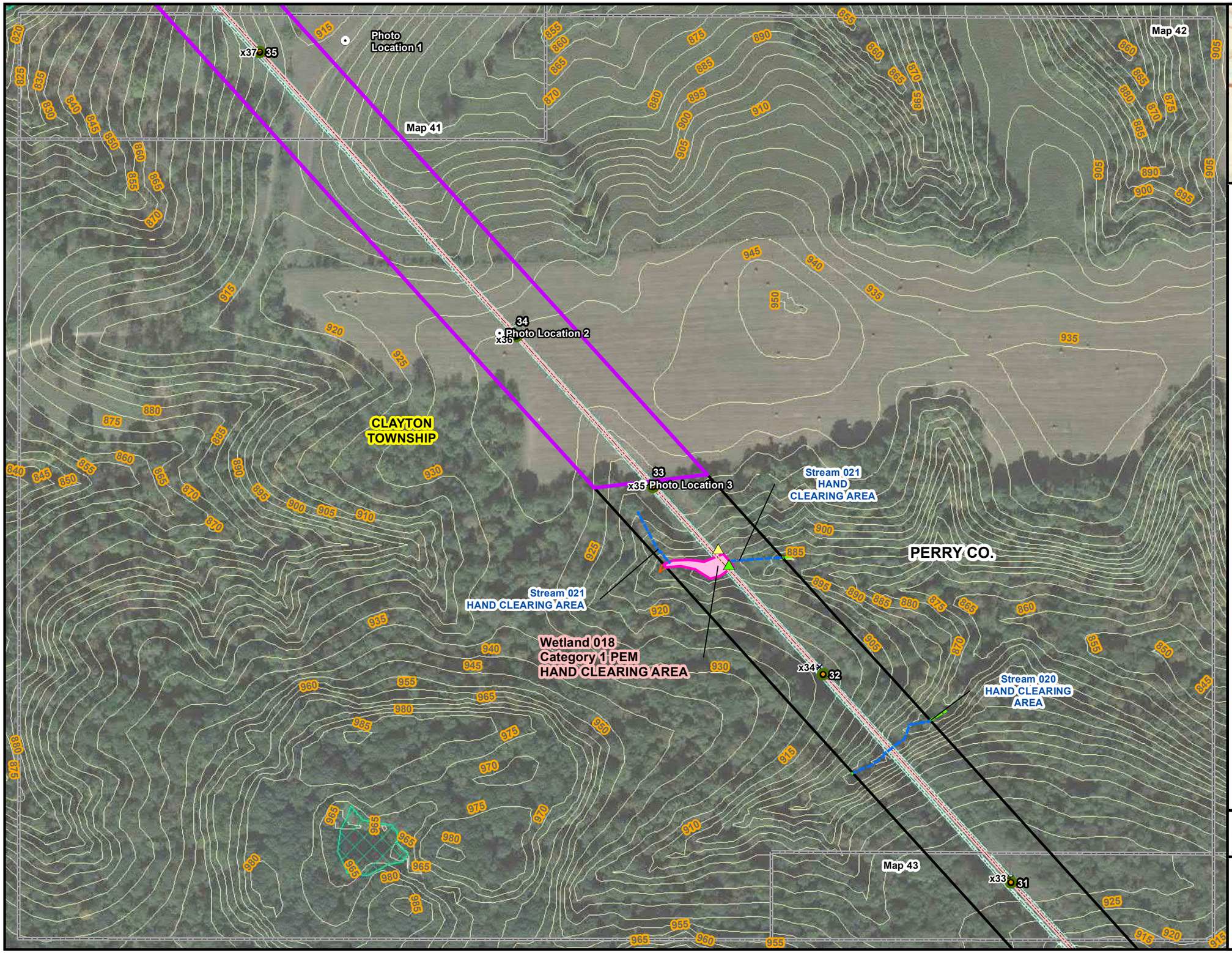
AEP OHIO TRANSMISSION COMPANY

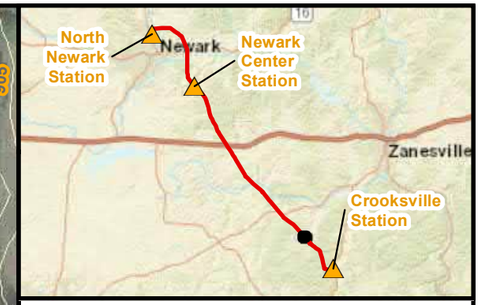
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AO
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Photographic Location
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Delineated Intermittent Stream
- Potential Northern Harrier Habitat Area
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
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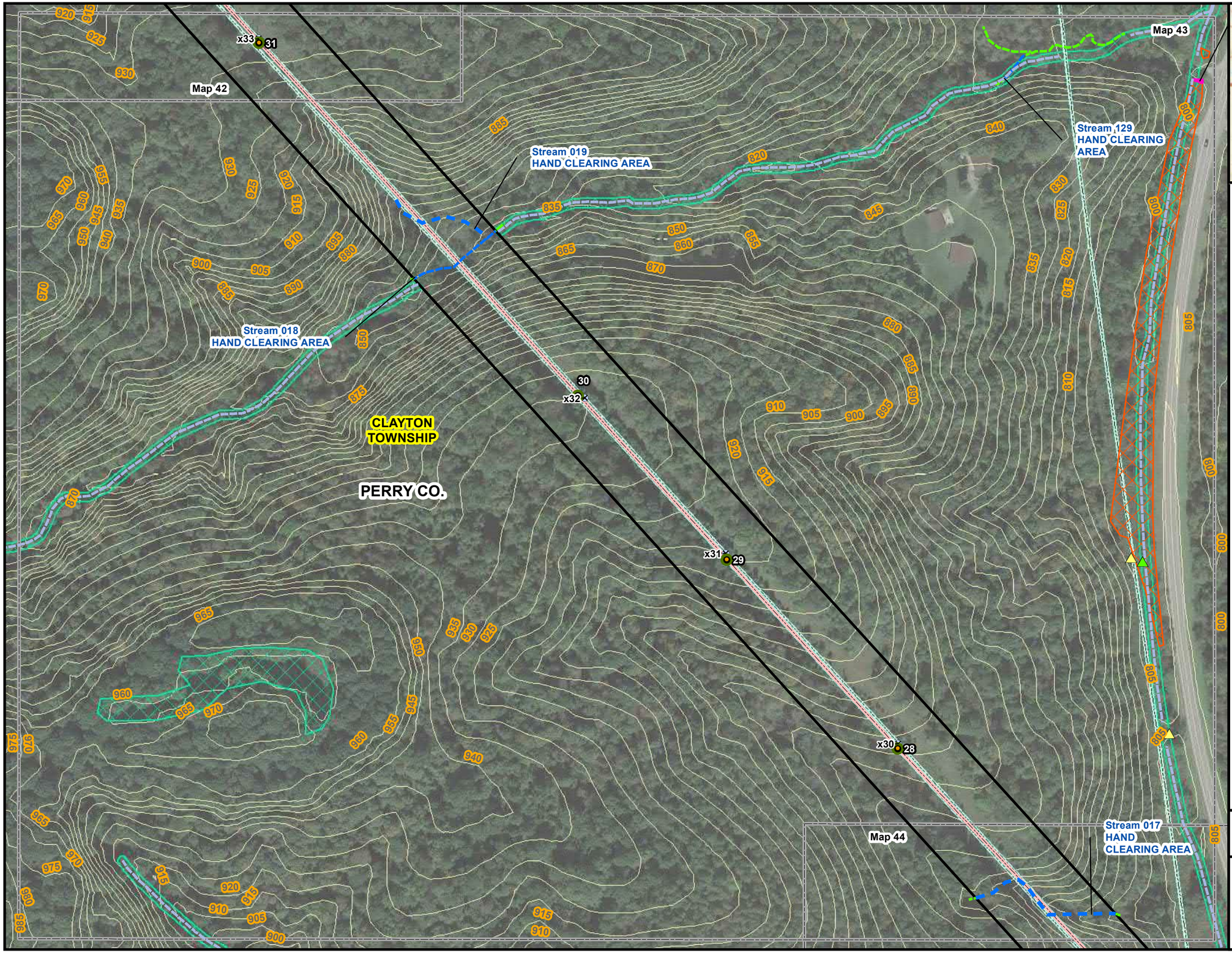
AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AP
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM



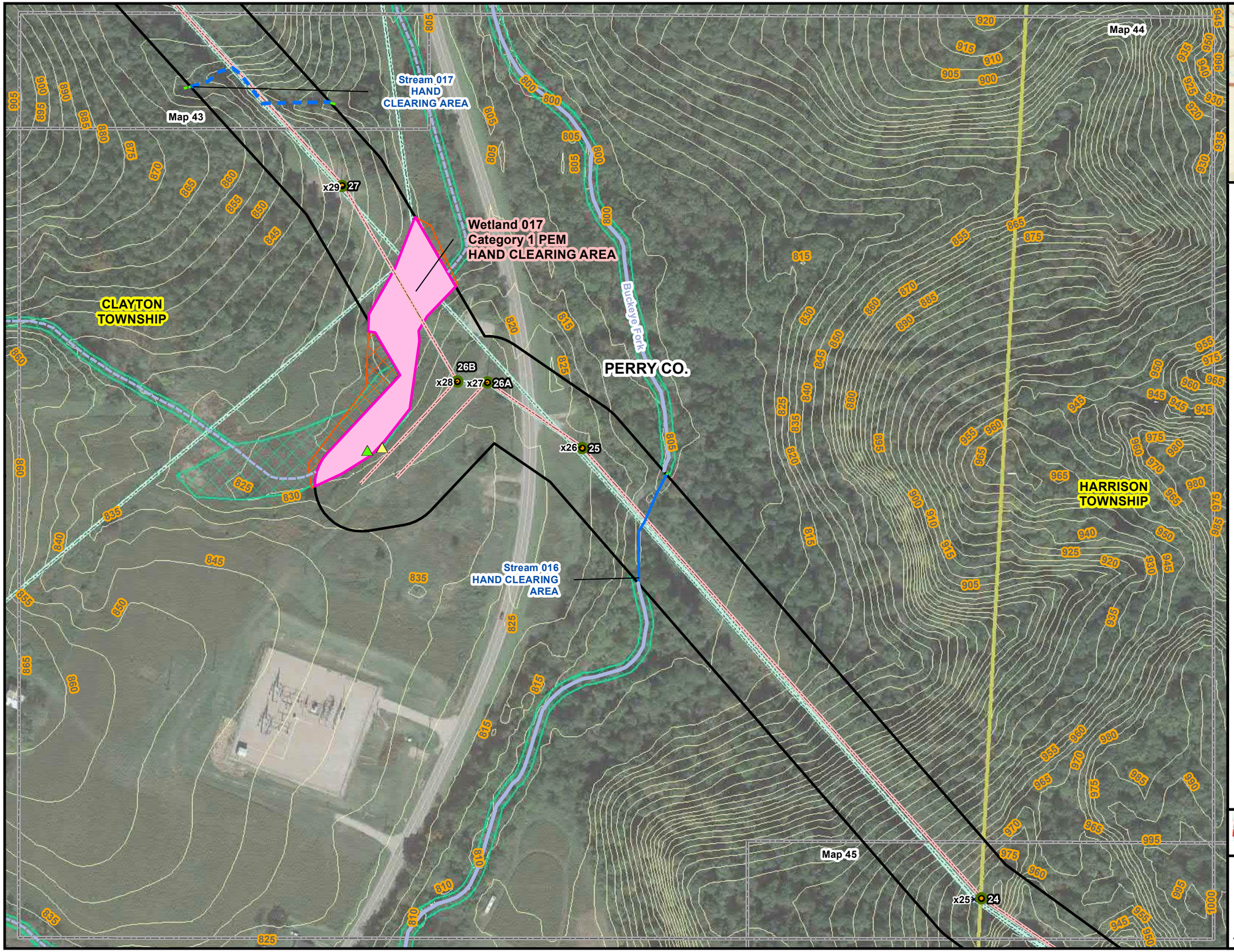
AEP OHIO TRANSMISSION COMPANY

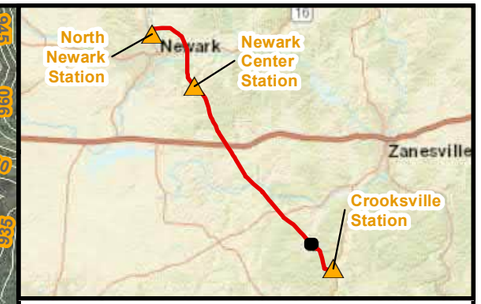
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AQ
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
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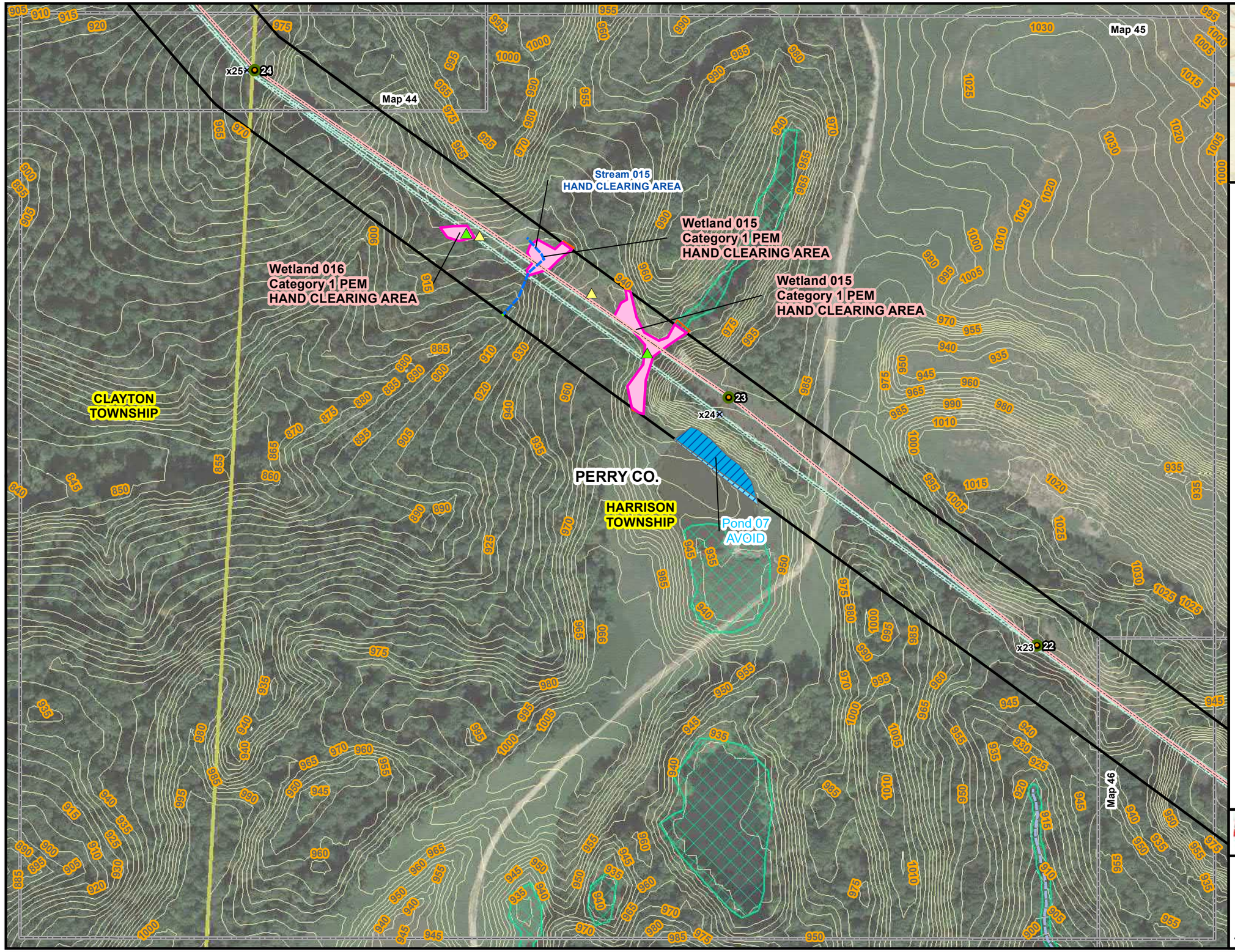
AEP OHIO TRANSMISSION COMPANY

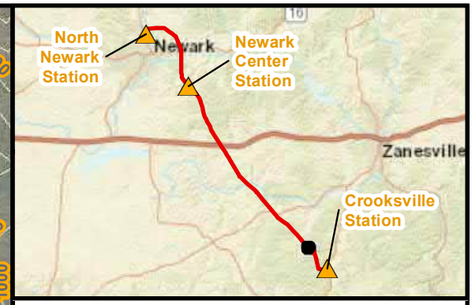
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AR
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

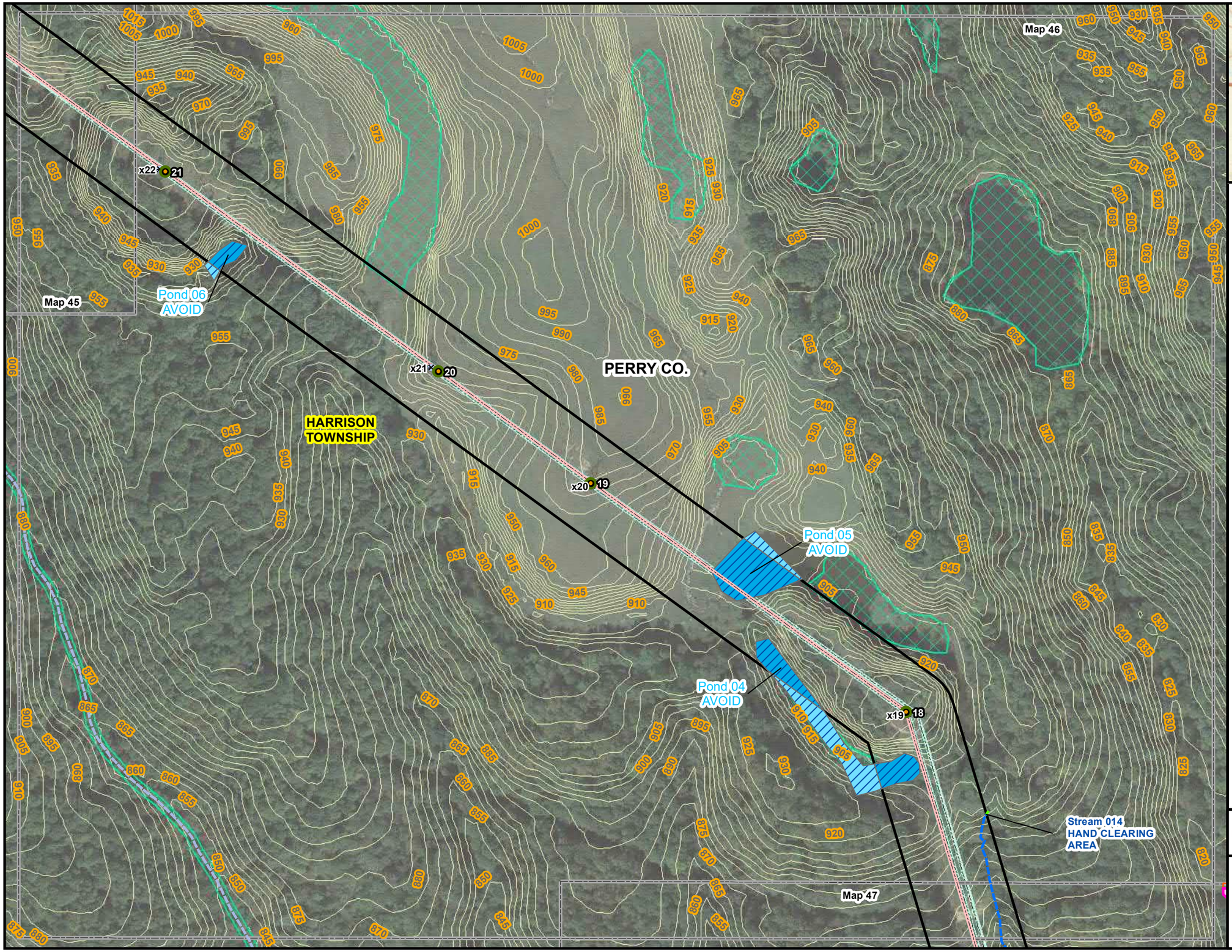
AEP OHIO TRANSMISSION COMPANY

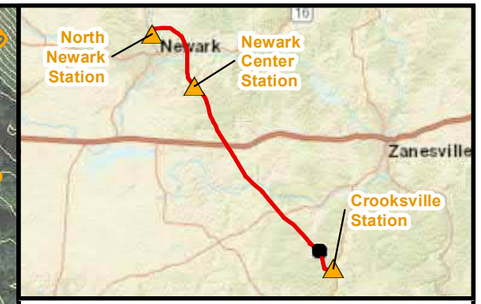
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AS
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AT
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Stream 014
HAND CLEARING AREA

Wetland 111b
Category 2 PEM
HAND CLEARING AREA

Stream 127
HAND CLEARING
AREA

Map 46

Map 47

Wetland 014
Category 2 PSS
HAND CLEARING AREA

Wetland 111a
Category 2 PFO
HAND CLEARING AREA

Stream 013
HAND CLEARING
AREA

Wetland 111b
Category 2 PEM
HAND CLEARING AREA

HARRISON
TOWNSHIP

Stream 012
HAND CLEARING AREA

Pond 03
AVOID

Wetland 013
Category 1 PSS
HAND CLEARING AREA

Pond 02
AVOID

PERRY CO.

Stream 011
HAND CLEARING
AREA

Map 48

North
Newark
Station

Newark

Newark
Center
Station

Zanesville

Crooksville
Station

- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Intermittent Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
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AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AU
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Wetland 012
Category 1 PSS
HAND CLEARING AREA

Wetland 012
Category 1 PSS
HAND CLEARING AREA

Stream 010
HAND CLEARING
AREA

Stream 009
HAND CLEARING AREA

Map 47

Map 48

Map 49

PERRY CO.

HARRISON
TOWNSHIP

15
x16

x15
14

North
Newark
Station

Newark

Newark
Center
Station

Zanesville

Crooksville
Station

- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Existing Pipeline
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Ephemeral Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400
Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

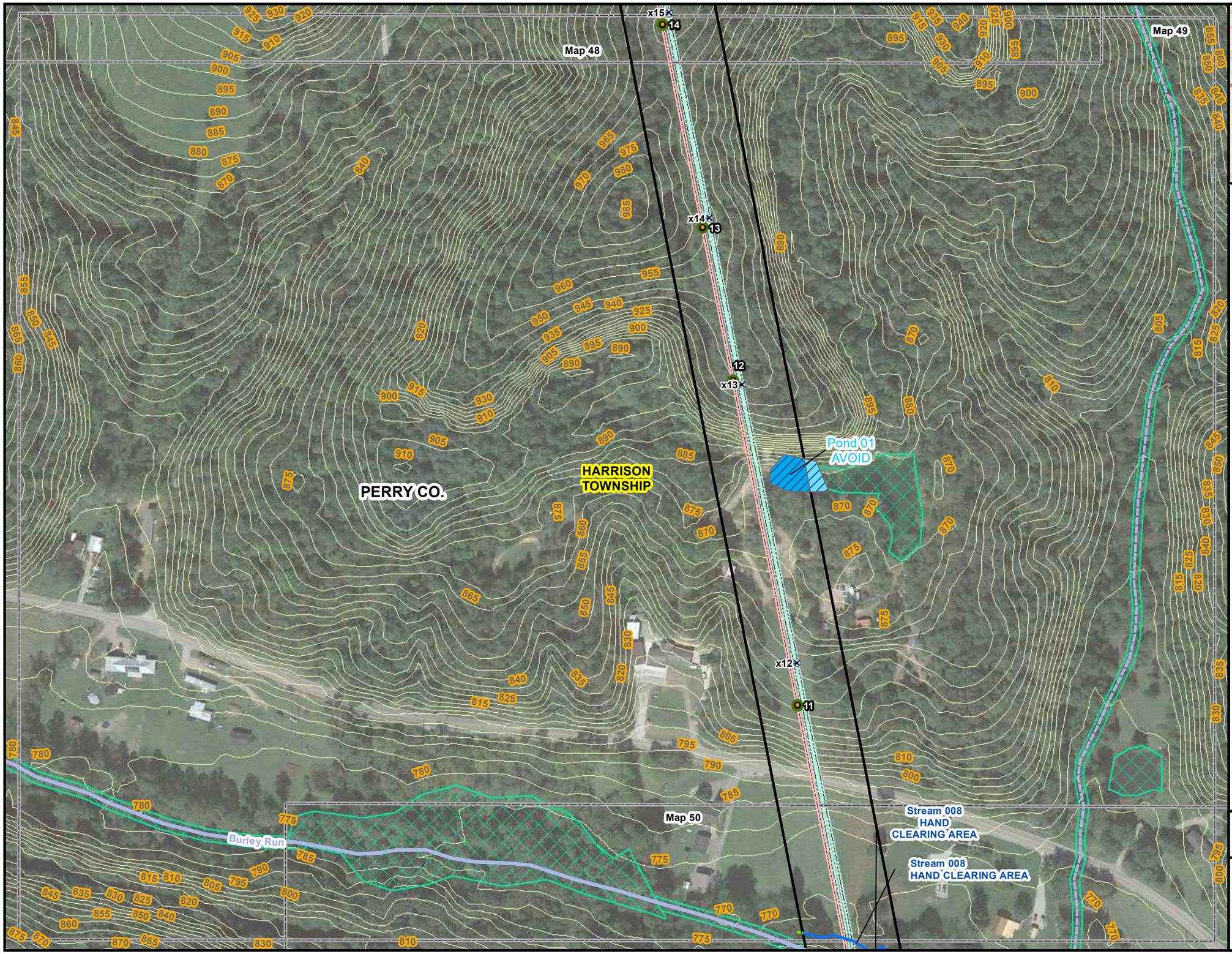
AEP OHIO TRANSMISSION COMPANY

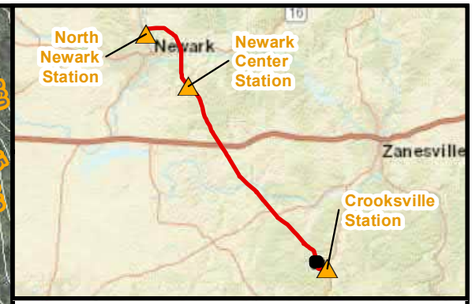
Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3AV
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AW
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

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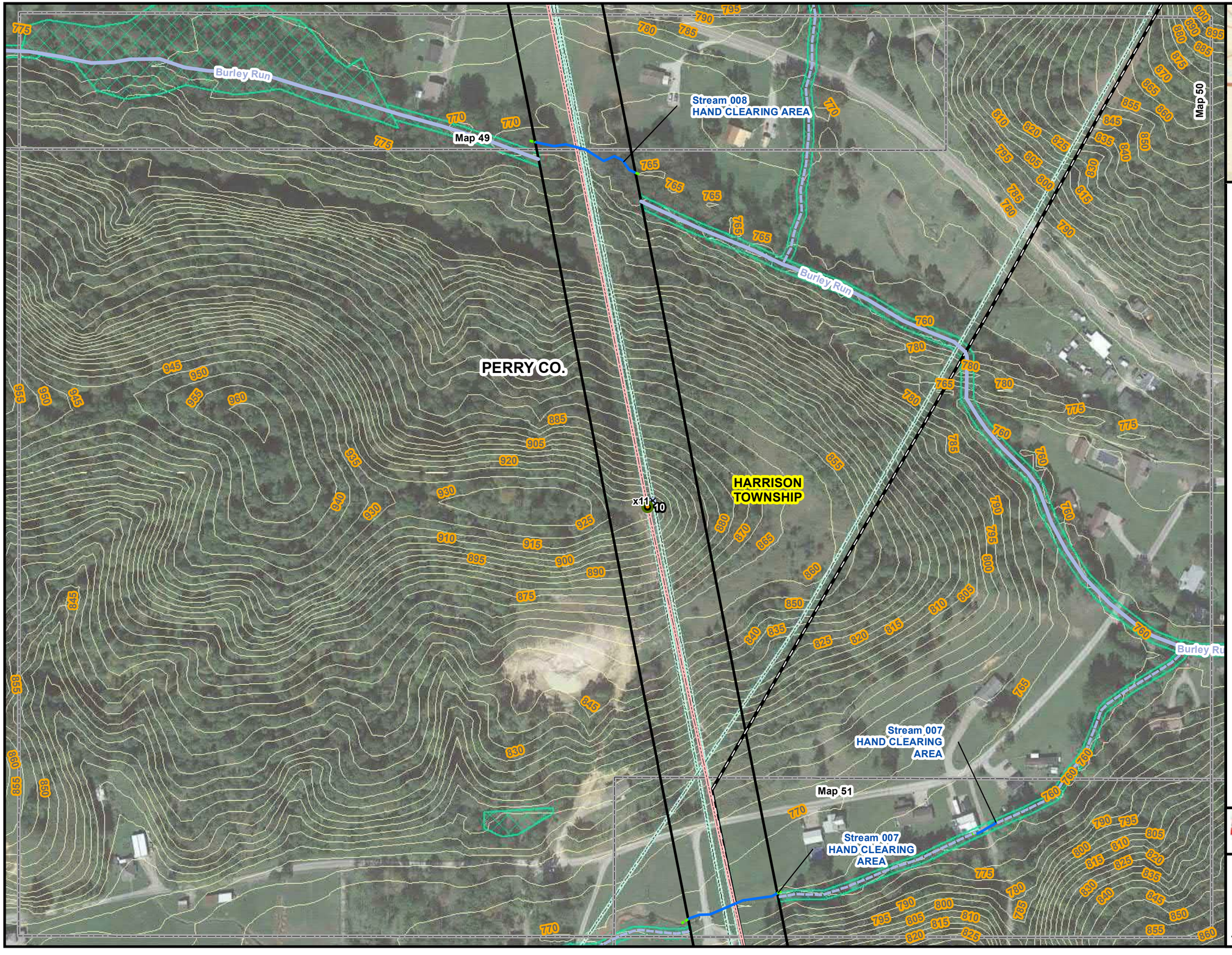
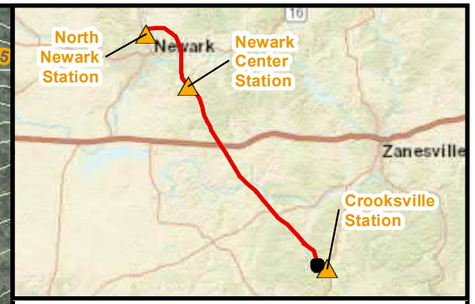




- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- Existing Pipeline
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

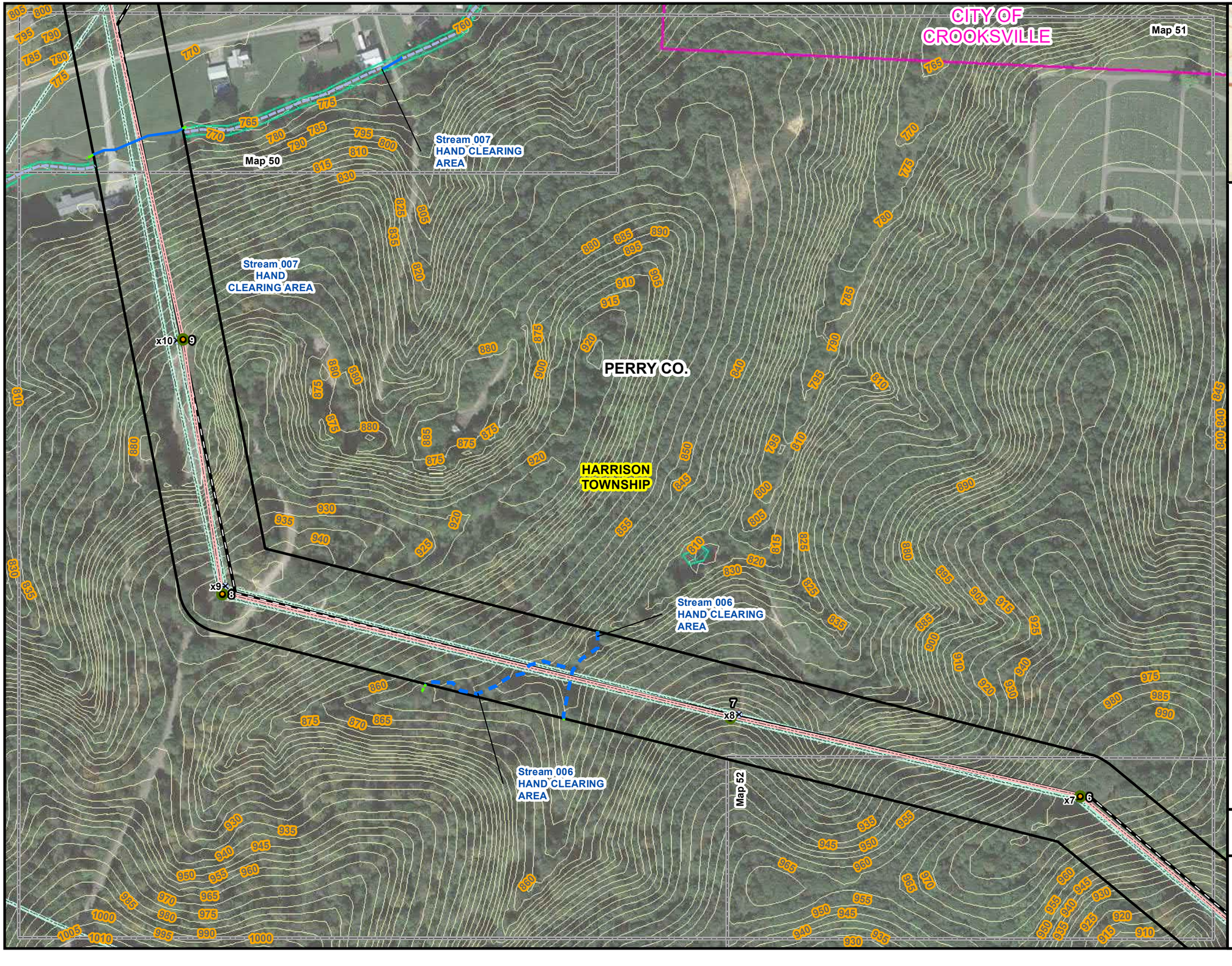
AEP OHIO TRANSMISSION COMPANY

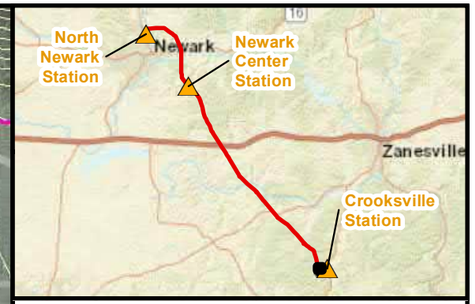
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AX
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Structure
- Proposed Direct Embed Structure
- Existing Transmission Line
- Proposed 138-kV Line
- Existing Pipeline
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Delineated Perennial Stream
- Delineated Ephemeral Stream
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

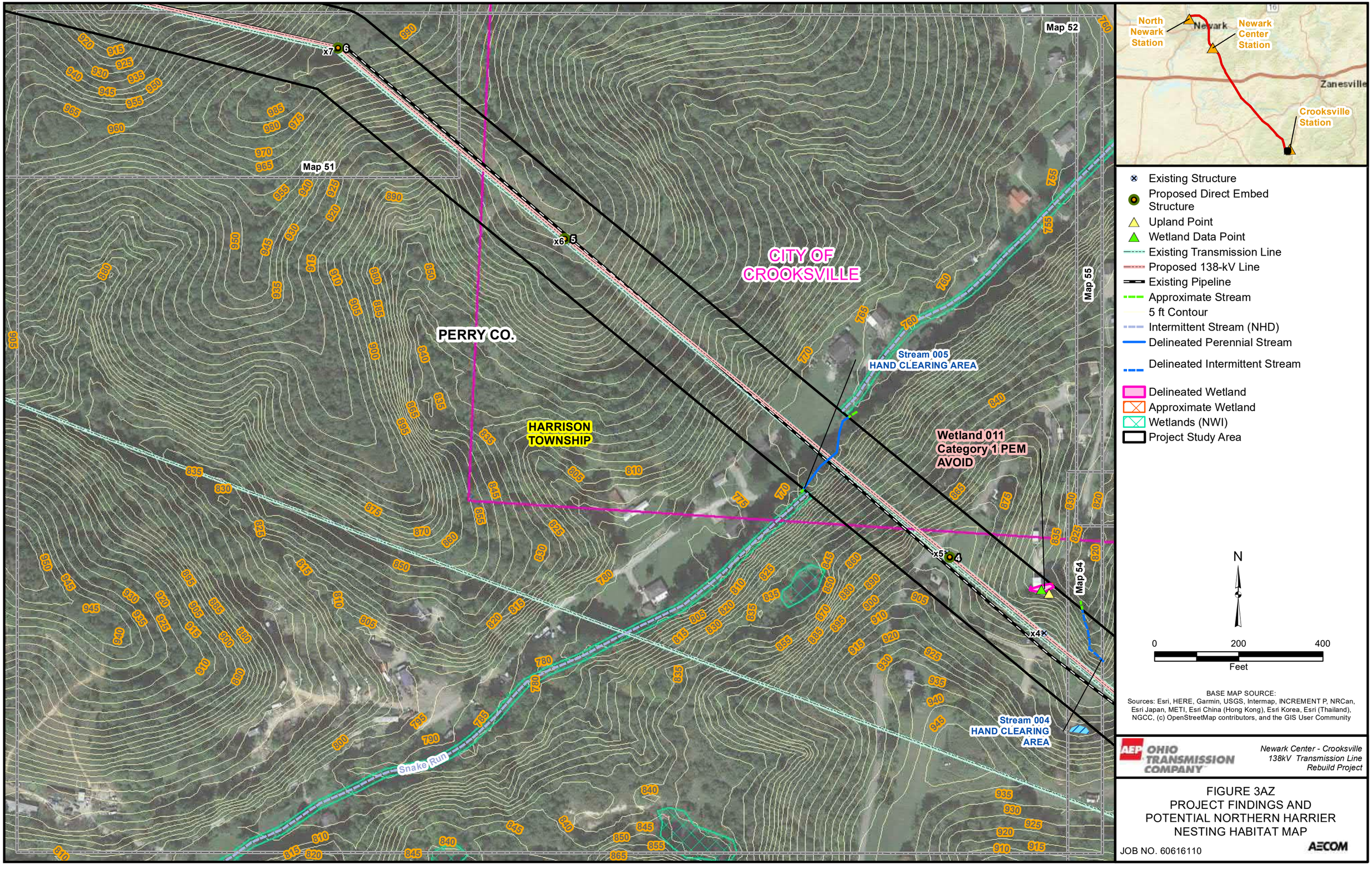
AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AY
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM



BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3AZ
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Wetland 009c
Category 2 PFO
HAND CLEARING AREA

Wetland 008
Category 1 PEM
HAND CLEARING AREA

Stream 001
HAND
CLEARING AREA

Wetland 007
Category 1 PFO
HAND CLEARING AREA

Wetland 006
Category 1 PSS
HAND CLEARING AREA

CITY OF
CROOKSVILLE

PERRY CO.

HARRISON
TOWNSHIP

CITY OF
CROOKSVILLE

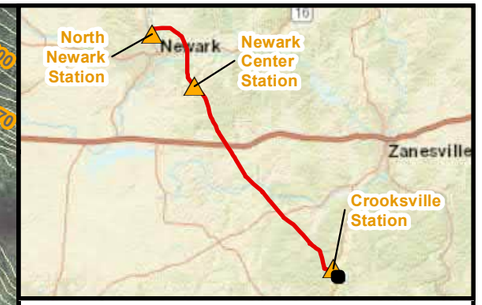
Moxahala Creek

Map 53

Map 54

x1

x64N



- Existing Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Existing Pipeline
- Approximate Stream
- 5 ft Contour
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
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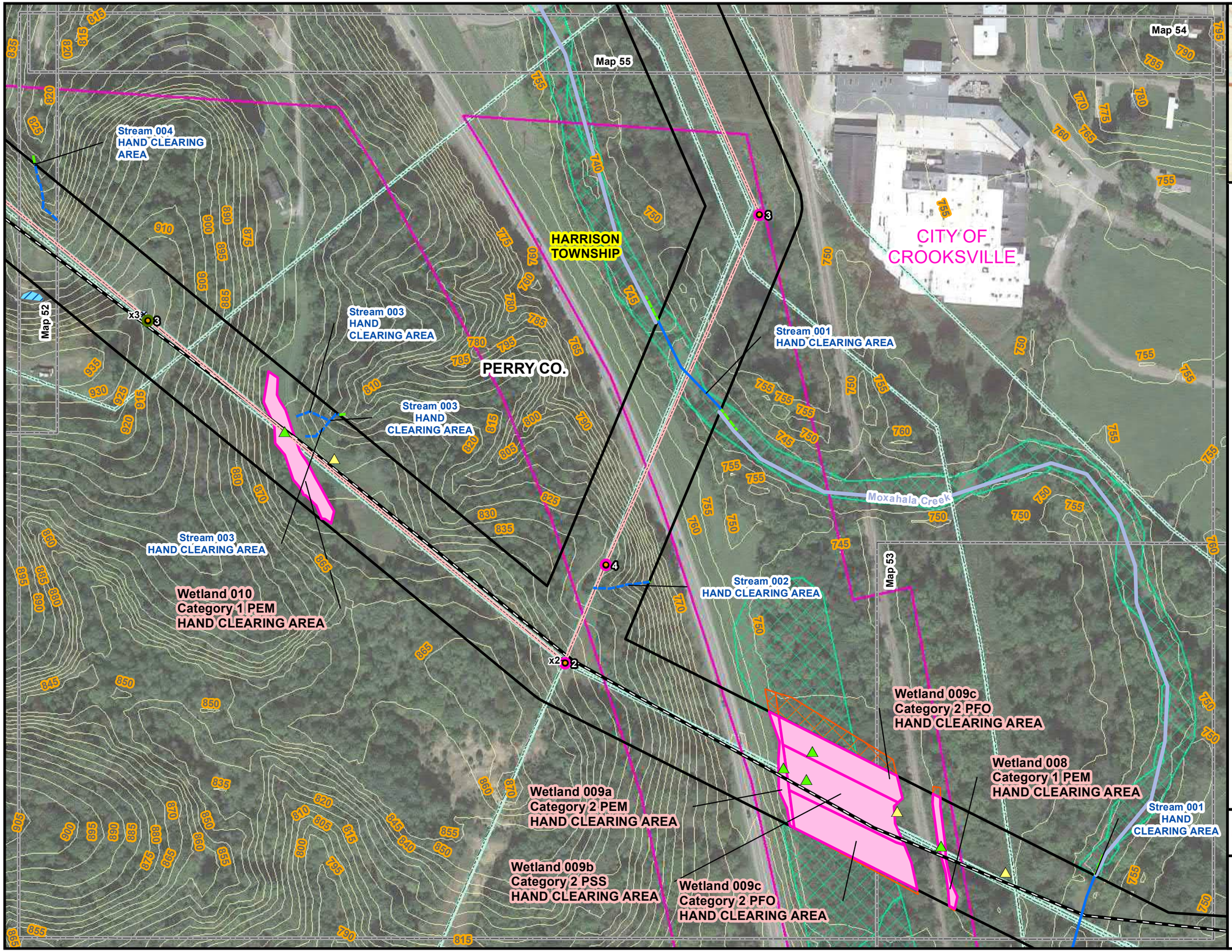
AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3BA
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM



BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

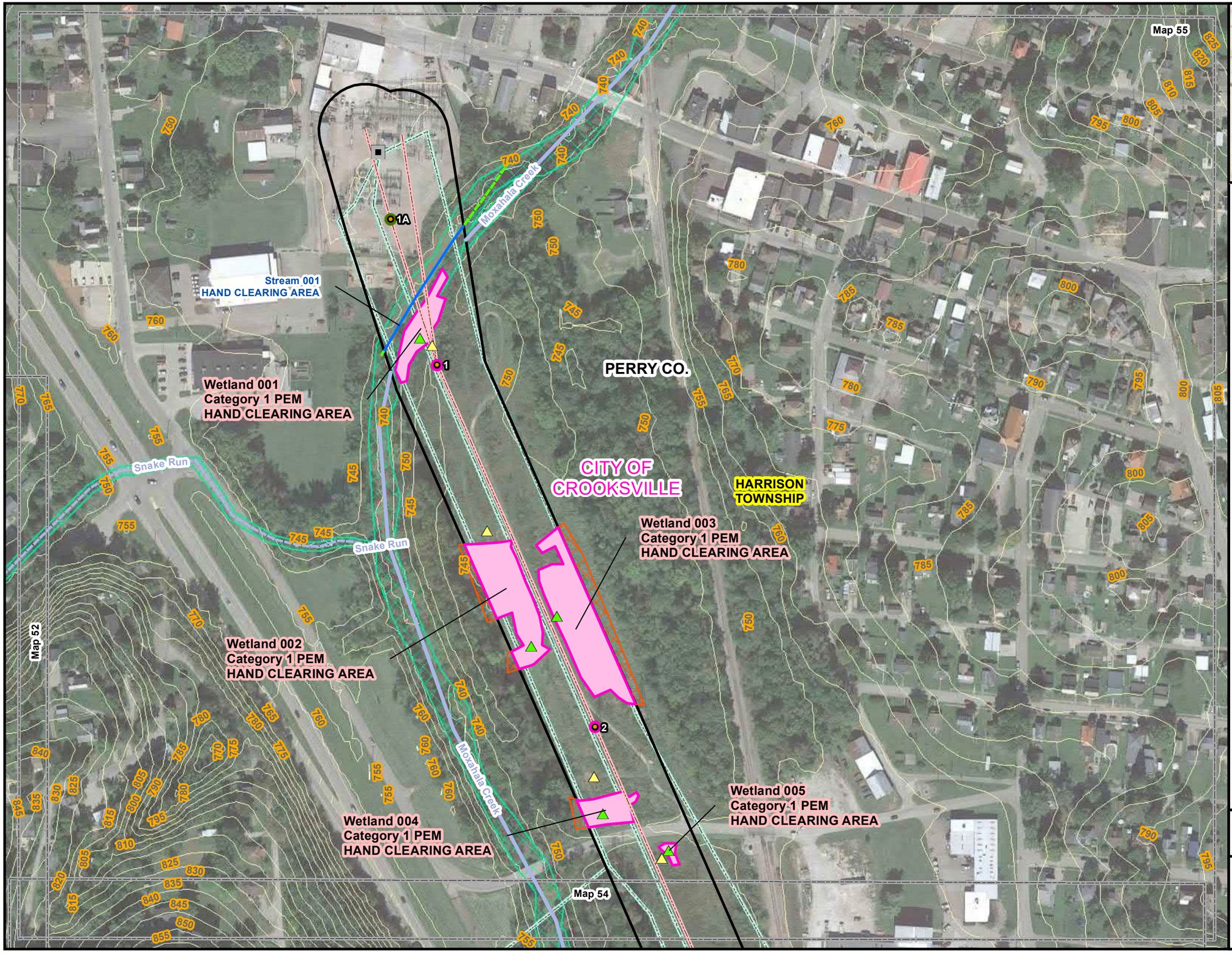
AEP OHIO TRANSMISSION COMPANY

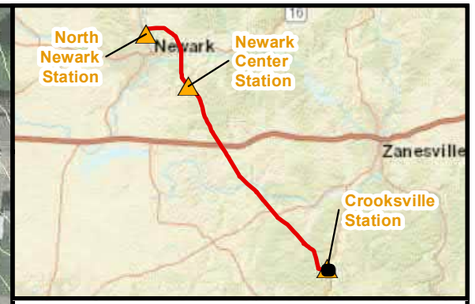
Newark Center - Crooksville 138kV Transmission Line Rebuild Project

FIGURE 3BB
PROJECT FINDINGS AND
POTENTIAL NORTHERN HARRIER
NESTING HABITAT MAP

JOB NO. 60616110

AECOM





- Existing Substation
- Proposed Concrete Base Structure
- Proposed Direct Embed Structure
- Upland Point
- Wetland Data Point
- Existing Transmission Line
- Proposed 138-kV Line
- Approximate Stream
- 5 ft Contour
- Intermittent Stream (NHD)
- Perennial Stream (NHD)
- Delineated Perennial Stream
- Delineated Wetland
- Approximate Wetland
- Wetlands (NWI)
- Project Study Area

N

0 200 400

Feet

BASE MAP SOURCE:
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

AEP OHIO TRANSMISSION COMPANY

Newark Center - Crooksville
138kV Transmission Line
Rebuild Project

FIGURE 3BC
PROJECT FINDINGS AND POTENTIAL NORTHERN HARRIER NESTING HABITAT MAP

JOB NO. 60616110

AECOM

Appendix A
Ohio Department of Natural Resources Coordination

Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR MARY MERTZ, DIRECTOR

Office of Real Estate
John Kessler, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6621
Fax: (614) 267-4764

November 20, 2019

Jason Tucker
AECOM
525 Vine Street
Cincinnati, Ohio 45202

Re: 19-862; Crooksville-North Newark 138 kV Transmission Line Rebuild Project

Project: The proposed project involves rebuilding approximately 31.6 miles of transmission line within an existing 100-foot right-of-way (ROW) from Crooksville, Ohio at the Crooksville Station heading northwest toward North Newark Station.

Location: The proposed project is located in Perry Township, Muskingum County, Ohio.

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

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

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

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

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

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

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

The project is within the range of the sheepnose (*Plethobasus cyphyus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the rabbitsfoot (*Quadrula cylindrica cylindrica*), a state endangered and federally threatened mussel, the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the long-solid (*Fusconaia maculata maculata*), a state endangered mussel, the sharp-ridged pocketbook (*Lampsilis ovata*), a state endangered mussel, the wartyback (*Quadrula nodulata*), a state endangered mussel, the black sandshell (*Ligumia recta*), a state threatened mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, and the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the northern madtom (*Noturus stigmosus*), a state endangered fish, the paddlefish (*Polyodon spathula*) a state threatened fish, the mountain madtom (*Noturus eleutherus*), a state threatened fish, and the channel darter (*Percina copelandi*), a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is also 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, and the type of habitat present at the project site, and within the vicinity of the project area, this project is not likely to impact this species.
The project is within the range of the northern harrier (*Circus cyaneus*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

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

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

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

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

ODNR appreciates the opportunity to provide these comments. Please contact Sarah Tebbe, Environmental Specialist, at (614) 265-6397 or Sarah.Tebbe@dnr.state.oh.us if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator (Acting)

Appendix B
Photographic Log

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 1	
Date: November 10, 2021	
Photo Orientation: Southeast	
Description: Potential habitat comprised of a field with a mosaic of emergent trees and forest. Photo taken from edge of the ROW near the forest edge, facing south. View of hayfield community (~65 acres).	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 2 **Date:** October 7, 2020 **Photo Orientation:** Northwest **Description:** Potential habitat comprised of a field with a mosaic of emergent trees and forest. Photo taken from within the ROW facing northwest. View of hayfield community (~65 acres).	

Photo Location 2 **Date:** October 7, 2020 **Photo Orientation:** South **Description:** Potential habitat comprised of a field with a mosaic of emergent trees and forest. Photo taken from within the ROW facing southeast to the forest edge. View of hayfield community (~65 acres).	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 2
Date: October 7, 2020
Photo Orientation: West
Description: Potential habitat comprised of a field with a mosaic of emergent trees and forest. Photo taken from within the ROW facing west to the closest forest edge. View of hayfield community (~65 acres).

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 3

Date:
October 7, 2020

Photo Orientation:
Northwest

Description:

Potential habitat comprised of a field with a mosaic of emergent trees and forest.

Photo taken from within the ROW at the forest edge facing northwest.

View of hayfield community (~65 acres).

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 4 **Date:** June 5, 2020 **Photo Orientation:** Northeast **Description:** Potential habitat comprised a hayfield bordered on the south and east by additional fields mixed with rural housing. Photo taken within ROW, facing northeast. View of hay field/pasture community(~36 acres).	

Photo Location 4 **Date:** June 5, 2020 **Photo Orientation:** East **Description:** Potential habitat comprised a hayfield bordered on the south and east by additional fields mixed with rural housing. Photo taken within ROW, facing east. View of hay field/pasture community (~36 acres).	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 4 **Date:** June 5, 2020 **Photo Orientation:** Southeast **Description:** Potential habitat comprised a hayfield bordered on the south and east by additional fields mixed with rural housing. Photo taken within ROW, facing southeast. View of hay field/pasture community (~36 acres).	

Photo Location 4 **Date:** June 5, 2020 **Photo Orientation:** West **Description:** Potential habitat comprised a hayfield bordered on the south and east by additional fields mixed with rural housing. Photo taken within ROW, facing west. View of hay field/pasture community (~36 acres).	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 5	
Date: June 5, 2020	
Photo Orientation: West	
Description: Potential habitat comprised a hayfield bordered on the south and east by additional fields mixed with rural housing. Photo taken within ROW on road, facing northeast into the potential habitat. View of hay field/pasture community (~36 acres).	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 6
Date: June 11, 2020
Photo Orientation: Northwest
Description: Potential habitat comprised of contiguous open fields with some human habitation. Photo taken within ROW, facing north. View of hayfield community.

Photo Location 7
Date: June 11, 2020
Photo Orientation: South
Description: Potential habitat comprised of contiguous open fields with some human habitation. Photo taken within ROW, facing southwest. View of hayfield community with human habitation in the background.

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
POTENTIAL NORTHERN HARRIER HABITAT

Client Name:	Site Location:	Project No.
AEP	Newark Center-Crooksville 138 kV Transmission Line Rebuild	60616110

Photo Location 8	
Date: June 4, 2020	
Photo Orientation: South	
Description: Potential habitat comprised of a mosaic of many fields each divided by a tree line and intermixed with human habitation. Photo taken within ROW, facing southeast. View of hay field/pasture community.	

Photo Location 9	
Date: June 4, 2020	
Photo Orientation: South	
Description: Potential habitat comprised of a mosaic of many fields each divided by a tree line and intermixed with human habitation. Photo taken within ROW, facing southeast. View of hay field/pasture community.	

Summary: Notice Construction Notice electronically filed by Hector Garcia-Santana on behalf of AEP Ohio Transmission Company, Inc..