

**AMERICAN TRANSMISSION SYSTEMS,  
INCORPORATED  
A FIRSTENERGY COMPANY**

**LETTER OF NOTIFICATION**

**KNOX-NOTTINGHAM 138 kV TRANSMISSION LINE  
REBUILD PROJECT  
KILGORE (POLO ROAD)-NEW STACY BUC SEGMENT**

**OPSB CASE NO.: 22-0285-EL-BLN**

**April 8, 2022**

**American Transmission Systems, Incorporated  
76 South Main Street  
Akron, Ohio 44308**

**LETTER OF NOTIFICATION  
KNOX-NOTTINGHAM 138 kV TRANSMISSION LINE  
REBUILD PROJECT - KILGORE (POLO ROAD)-NEW STACY BUC SEGMENT**

The following information is being provided in accordance with Ohio Administrative Code (OAC) Chapter 4906-6 for the application and review of Accelerated Certificate Applications. Based upon the requirements found in Appendix A to OAC Rule 4906-1-01, this Project qualifies for submittal to the Ohio Power Siting Board (“Board”) as a Letter of Notification application.

**4906-6-05: ACCELERATED APPLICATION REQUIREMENTS**

**4906-6-05(B)(1): Name and Reference Number**

Name of Project: Knox-Nottingham 138 kV Transmission Line Rebuild Project-- Kilgore (Polo Road)-New Stacy BUC Segment (“Project”).

(Reference Number: 2031-2)

**4906-6-05 (B)(1): Brief Description of the Project**

In this Project, American Transmission Systems, Incorporated (“ATSI”), a FirstEnergy company, proposes to rebuild and reconductor the approximate 9-mile Kilgore (Polo Road) to New Stacy BUC segment of the approximately 44-mile Knox-Nottingham 138 kV Transmission Line (“Kilgore (Polo Road)-New Stacy BUC Segment” or “Project”).

The Kilgore (Polo Road)-New Stacy BUC Segment extends from existing Structure No. 2788 (new Structure No. 332), the point of interconnection with American Electric Power (“AEP”) in Carroll County, to existing Structure No. 2732B (new Structure No. 276), the point of interconnection with Buckeye Power in Harrison County. The Project will traverse Perry Township in Carroll County and Rumley and Archer Townships in Harrison County, Ohio. The Project will be comprised of the following:

1. The Project will rebuild the existing wood pole H-frame structures, along the existing centerline, by using a combination of steel structures on concrete foundations or direct embed steel structures.
2. The existing conductor, 477 kmil 24/7 ACSR, will be replaced with 795 kmil 26/7 ACSR.

The general location of the Project is shown in Exhibit 1, a partial copy of the United States Geologic Survey, Jewett and Scio Quad Maps. Exhibit 2 is a partial copy of ESRI aerial imagery. A general layout of the project is shown in Exhibit 3.

In April 2021, representatives of ATSI met with technical and legal Staff of the Ohio Power Siting Board (“OPSB Staff”) to discuss ATSI’s 64-mile Holloway-Knox Project, which is divided into two sections: the 44-mile Knox-Nottingham and the 20-mile Holloway-Nottingham #1 and #2. The two sections are in turn divided into the multiple segments. As noted below in section 4906-6-05(B)(2), there were several logistical aspects of the rebuild project that contributed to a joint decision between ATSI and OPSB Staff that the Project would be framed in accordance with each segment. Due to restrictions on construction, outage schedules, and the need to minimize service disruptions, the improvements required to fix deteriorating facility conditions cannot be completed in a single project and must be broken into segments. As such, there will be four segments in addition to this Project, as follows:

- Knox to Washington Segment (Approved and certificated by the OPSB in Case No. 21-0667-EL-BLN)
- Washington to Kilgore (Polo Road) Segment
- New Stacy BUC to Nottingham Segment
- Holloway-Nottingham #1 and #2 Segment

#### **4906-6-05 (B)(1): Letter of Notification Requirement**

The Project meets the requirements for a Letter of Notification because the Project is within the types of projects defined by Item (2)(b) of the Application Requirement Matrix

for Electric Power Transmission Lines, Appendix A of OAC Rule 4906-1-01. This item states:

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

*(b) More than two miles.*

The proposed Project is within the requirements of Item (2)(b) as it involves replacing structures and conductor for a distance greater than two miles.

#### **4906-6-05 (B)(2): Need for the Project**

ATSI needs to rebuild all 64 miles of the Holloway to Knox 138 kV Transmission Line in light of deteriorating facility conditions and the growing amount of maintenance required to maintain the line as-is. The primary benefit of the Project is to enhance system reliability through protection from unplanned outages, and to augment ATSI's operating flexibility as well as system resiliency by replacing deteriorating wood poles and by updating the existing conductor and shield wires. In turn, replacement of these facilities supports future load growth in the area for new and existing customers. Routine line inspections have shown an ever-increasing number of active conditions that require repair, leading to an overall worsened line condition. The most recent transmission line inspection conducted by a third-party contractor in April 2020, found that 39 of 57 structures (approximately 68%) of the Kilgore (Polo Road) – New Stacy BUC Segment were defective and were rejected. Table 1 summarizes the results of that inspection.<sup>1</sup>

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<sup>1</sup> Similar structural problems are present along the entire Holloway-Knox 138 kV Transmission Line. However, the improvements required to fix these deteriorating facility conditions cannot be completed in a single project and must be broken into segments, designed to accommodate construction sequencing, outage schedules, and the need to minimize service disruptions.



**Table 1– Pole Inspection Summary**

<b>Defect Type</b>	<b>Defect Count</b>
<b>Woodpecker Holes</b>	<b>29</b>
<b>Repaired Woodpecker Holes</b>	<b>8</b>
<b>Decay</b>	<b>1</b>
<b>Failed Sound Test</b>	<b>1</b>

Wood poles are considered rejected when defects render a pole unsafe, unreliable, or non-compliant with current code, including the rejection of wood poles when the pole strength has been reduced to 2/3<sup>rd</sup> of the original design strength. This is in line with the National Electrical Safety Code (“NESC”) Table 261-1, note 2, which states: “wood and reinforced structures shall be replaced or rehabilitated when deterioration reduces the structure strength to 2/3 of that required when installed...”

The primary reasons for structure rejection on this Project is damage caused by woodpeckers, which is a major concern for all wood poles. The damage results in varying amounts of structural degradation depending where on the structure the damage takes place. The standard maintenance procedures include filling the holes and wrapping the pole in a metal mesh to prevent further damage; however, woodpeckers typically return to either a different location on the same pole or go to a different pole and the problem continues. If woodpecker damage occurs near a critical point on the structure such as the x-brace or crossarm attachment points, the pole must be replaced. Ultimately, woodpeckers may return to cause the same type of damage. The proposed upgrade to steel structures eliminates this maintenance problem.

As part of this Project, ATSI proposes to upgrade the conductor to its standard of 795 kcmil 26/7 ACSR, which will allow for future load growth and generator connections, if any occur, while adding sufficient margins to the transmission system. The new proposed

conductors meet FirstEnergy's current standard. Upgrading to the current standard will improve reliability and performance.

Lastly, the shield wires will be replaced with one 7#8 Alumoweld shield wire and OPGW in the second position. Since 2016, it has been a FirstEnergy practice to include OPGW in one of the static wire positions for any transmission line rebuild project. This enables the modernization of grid protection and control communication between substations.

The need for the entire Holloway-Knox project was first presented at the August 31, 2018 Subregional Regional Transmission Expansion Plan (SRRTEP) Committee Western meeting. A month later, on September 28, 2018, the proposed solution was presented and was assigned PJM supplemental RTEP number s1718. Since that time, the scope of the overall project changed and was re-presented at the September 11, 2020 SRRTEP Committee Western meeting and assigned RTEP number s2389. The PJM SSRTEP-Western presentation slide from the 2020 meeting is included as Exhibit 4 and provides additional details of the project drivers.

#### **4906-6-05 (B)(3): Location of the Project Relative to Existing or Proposed Lines**

The location of the Project relative to existing or proposed lines is shown in the ATSI Transmission Network Map, included as part of the confidential portion of the FirstEnergy Corp. 2021 Long-Term Forecast Report. This map was submitted to the PUCO in Case No. 21-0504-EL-FOR under Rule 4901:5-5:04 (C)(2)(b) of the Ohio Administrative Code. The map is incorporated by reference only. This map shows ATSI's 345 kV and 138 kV transmission lines and transmission substations including the Knox-Nottingham 138 kV Transmission Line. The Project is included on page 39 of the Long-Term Forecast Report and is a part of the larger Holloway-Nottingham-Knox 138 kV Line Rebuild Project. The general location and layout of the project area is shown in Exhibits 1 and 2.

#### **4906-6-05 (B)(4): Alternatives Considered**

Due to the physical condition of the existing transmission line and nature of the Project, there were only two alternatives considered; replace only the identified failed structures or full rebuild.

#### **Alternative 1:**

Replace 39 failed wood H-frame structures with wood H-frame structures and re-use the existing conductor and shield wire. Includes construction of approximately 6.39 miles of access roads and restoration after replacement.

#### **Alternative 2**

Rebuild 9.0 miles of the transmission line consisting of replacing all existing wood pole structures with steel monopoles, replacing conductor with 795 kcmil 26/7 ACSR and replacing the shield wire with 7/8# Alumoweld shield wire and OPGW. Includes construction of approximately 6.82 miles of access roads and restoration after project completion.

Several factors were considered by ATSI in opting to rebuild the entire line rather than continuing to maintain the deteriorating facilities. These factors include:

#### **Existing Wood Pole Condition**

As described in Section 4906-6-05 (B)(2), approximately 68% of the wood poles have physical damage and/or signs of deterioration. This percentage will only increase over time, resulting in multiple returns, increased impact and greater costs. Replacing all the poles with steel eliminates damage caused by woodpeckers, reduces maintenance and extends the life of the facilities.

#### **Conductor Replacement and Upgrade**

ATSI proposes to replace and upgrade the conductor to its current standard of 795 kcmil 26/7 ACSR as part of the proposed Project. As stated above, this would not be completed under the Alternative 1 scenario. Not only does it upgrade the conductor to current standards, it increases the line rating to 275 MVA (Summer Normal). The upgrade will

improve reliability and performance as well as support future load growth in the area. Lastly, by replacing the conductor as part of this Project, it eliminates the need for a complete reconductor project in the coming years as the conductor is aging along with the rest of the facilities.

### **Communications**

Although outside the scope of this application, this Project will also facilitate ATSI's replacing the existing shield wire with one 7#8 Alumoweld shield wire and one Optical Ground Wire ("OPGW"). With the addition of OPGW in the proposed Project, ATSI is able to modernize grid protection and control communications between substations. Since the installation method is identical to traditional shield wire, the cost per mile of adding OPGW is negligible compared to the return on the investment from a reliability and communication perspective. If pole replacement is done under a maintenance approach, OPGW would not be installed, and a separate alternative fiber route may be required to meet communication enhancement needs.

### **Land Use and Sensitive Areas**

As referenced in Section 4906-6-05 (B)(10), the land use in the area of the Project is primarily rural residential, agricultural, and mining. Disruption to landowners and/or operators are minimized in the proposed Project as opposed to the multiple number of access times that would be necessary under the maintenance alternative. In cases where crops are planted, multiple access increases the potential for crop damage and payment for the loss.

The United States Fish and Wildlife Service ("USFWS") and the Ohio Department of Natural Resources ("ODNR") identified the state and federally listed species that may potentially be affected by the Project. Seasonal restrictions along with avoidance and minimization measures were identified to reduce impacts to these species.

Overall, land use impacts, including but not limited to crop and other environmental features, increase with multiple mobilizations as compared to a single construction project as proposed. These impacts along with the installation of barriers or matting and

adhering to seasonal restrictions lead to increase costs and complicate construction sequencing and outage coordination.

### **Safe and Reliable Service**

ATSI has a duty to provide safe and reliable service to its customers and the condition of the Kilgore (Polo Road) – New Stacy BUC Segment presents a significant risk to ATSI's ability to meet this obligation. The Knox-Nottingham 138 kV Transmission Line serves multiple delivery points, including Buckeye Power's New Stacy Substation and AEP's Kilgore (Polo Road) Substation. Should the Knox-Nottingham Transmission 138 kV Line fail, customers served from the New Stacy and Kilgore (Polo Road) Substations would be out of service.

The best approach is to completely rebuild the Kilgore (Polo Road) – New Stacy BUC Segment of the Knox-Nottingham 138 kV Transmission Line. ATSI believes that the rebuild project is the most cost effective, least impactful, and effective approach to ensure its ability to continue to provide safe and reliable service to its customers.

### **4906-6-05 (B)(5): Public Information Program**

ATSI's manager of External Affairs will advise local officials of features and the status of the proposed Project as necessary. ATSI will maintain a copy of this Letter of Notification, along with other Project information, on FirstEnergy's website:

[https://www.firstenergycorp.com/about/transmission\\_projects/ohio.html](https://www.firstenergycorp.com/about/transmission_projects/ohio.html).

ATSI will publish notice of the Project in the Carroll County Messenger and the Harrison News Herald within 7 days of filing this Letter of Notification application. The notice will comply with OAC 4906-6-08(A)(1)-(6). In addition to the public notice, ATSI will mail letters in accordance with OAC 4906-6-08(B) explaining the Project to affected landowners and tenants and informing them of the Project's anticipated construction and restoration activities sequencing, including the start date and overall time frame.

During all phases of this Project, the public may contact ATSI through the transmission projects hotline at 1-888-311-4737 or via email at:  
[transmissionprojects@firstenergycorp.com](mailto:transmissionprojects@firstenergycorp.com).

**4906-6-05 (B)(6): Construction Schedule**

The construction schedule for this Project is expected to begin as early as September 2022 and is proposed to be completed/in-service by April 2023.

**4906-6-05 (B)(7): Area Map**

Exhibit 1 depicts the general location of the Project on a partial copy of the United States Geological Survey, Jewett and Scio Quad Maps. Exhibit 2 provides a partial copy of Bing aerial imagery of the Project area.

**4906-6-05 (B)(8): Property Owner List**

The Project is located on existing right-of-way. New temporary access rights may be required as part of the Project. Exhibit 5 contains a list of properties affected by the Project, specifying whether ATSI either has obtained or has not yet acquired the necessary easement/right-of-way/land rights.

**4906-6-05 (B)(9): TECHNICAL FEATURES OF THE PROJECT**

**4906-6-05 (B)(9)(a): Operating Characteristics**

The transmission line construction will have the following characteristics:

Voltage:	138 kV
Conductors:	795 kcmil 26/7 ACSR
Static Wire:	OPGW and 7#8 Alumoweld
Insulators:	Polymer and/or Porcelain
ROW Width:	150 feet (100-foot cleared corridor)
Land Requirements:	Access Rights
Structure Types:	Exhibit 6: 138 kV Single Circuit Steel Pole, Suspension (approximately 37 Structures)

Exhibit 7: 138 kV Single Circuit Steel Pole, Deadend (approximately 7 Structures)

Exhibit 8: 138 kV Single Circuit Steel Pole, Strain (approximately 5 Structures)

Exhibit 9: 138 kV Single Circuit Steel Pole, Angle (approximately 4 Structures)

Exhibit 10: 138 kV Single Circuit Steel Pole, Switch (approximately 2 Structures)

Exhibit 11: 138 kV Single Circuit Steel Pole, Tap (approximately 2 Structures)

**4906-6-05 (B)(9)(b): Electric and Magnetic Fields**

As there are occupied residences or institutions within 100 feet from the existing transmission line centerline, Electric and Magnetic Field (“EMF”) calculations are required by this code provision.

**4906-6-05 (B)(9)(b)(i): Calculated Electric and Magnetic Fields Strength Levels**

The Project is a 9.0 mile single circuit transmission line located on a 150-foot right-of-way that does not share the right-of-way with any other transmission lines.

Table 2 itemizes the line loading of the Project. The normal line loading represents FirstEnergy’s peak system load for the transmission lines. The emergency line loading represents the maximum line loading under contingency operation. The winter rating is based on the continuous maximum conductor rating (“MCR”) of the circuit for the single conductors per phase and an ambient temperature of zero degrees centigrade (32 °F), wind speed of 1.3 miles per hour, and a circuit design operating temperature of 100 °C (212 °F).

**Table 2: Transmission Line Loading**

<b>Line Name</b>	<b>Normal Loading Amps</b>	<b>Emergency Loading Amps</b>	<b>Winter Rating Amps</b>
Kilgore (Polo Road) – New Stacy BUC Segment of the Knox-Nottingham 138 kV Transmission Line	291	355	1320

Table 3 provides an approximation of the magnetic and electric fields strengths of the Project. The calculations provide an approximation of the electric and magnetic fields levels based on specific assumptions utilizing the EPRI EMF Workstation 2015 program software. This program software assumes the input transmission line configuration is located on flat terrain. Also, a balanced, three-phase circuit loading is assumed for the transmission circuit. The model utilizes the normal, emergency, and winter rating of the transmission line.

**Table 3: EMF Calculations for Knox-Washington 138 kV Transmission Line**

<b>Kilgore (Polo Road) – New Stacy BUC Segment, 150-foot ROW</b>		<b>Electric Field kV/m</b>	<b>Magnetic Field mG</b>
<b>Normal Loading</b>	Under Lowest Conductors	1.059	33.41
	At Right-of-Way Edges	0.188 / 0.235	6.54 / 7.25
<b>Emergency Loading</b>	Under Lowest Conductors	1.059	40.27
	At Right-of-Way Edges	0.188 / 0.235	8.39 / 9.1
<b>Winter Rating</b>	Under Lowest Conductors	1.059	149.73
	At Right-of-Way Edges	0.188 / 0.235	31.21 / 32.1

**4906-6-05 (B)(9)(b)(ii): Alternative Design Consideration for Electric and Magnetic Fields**

The strength of EMFs can potentially be reduced by installing the transmission line conductors in a compact configuration by selecting conductor phasing that reduces the field strengths. ATSI designs its facilities according to the requirements of the NESC.



The pole heights and configuration were chosen based on NESC specifications, engineering parameters, and cost. ATSI's typical practice, as proposed in this the new construction portions of this Project, is to install 138 kV transmission lines primarily on single circuit steel pole tangent structures supported on suspension insulators – this is a compact design that reduces EMF field strengths in comparison to other installations.

**4906-6-05 (B)(9)(c): Estimated Cost**

The estimated capital cost for the proposed Project is approximately \$21,457,000.

**4906-6-05 (B)(10): SOCIAL AND ECOLOGICAL IMPACTS**

**4906-6-05 (B)(10)(a): Land Uses**

The Project is located in Perry Township, Carroll County, and Rumley and Archer Townships, Harrison County, Ohio. The main land use around the Project is rural residential, agricultural, and mining land.

**4906-6-05 (B)(10)(b): Agricultural Land**

A list of all agricultural land and acreage including agricultural district land is provided in Exhibit 5.

**4906-6-05 (B)(10)(c): Archaeological or Cultural Resources**

On behalf of ATSI, Jacobs Engineering Group, Inc. (“Jacobs”) submitted a Section 106 Review (“Review”) for the entire Holloway-Knox 138kV Transmission Line in August 2020. The Review examined the records available through the Ohio Historic Preservation Office’s (“OHPO”) online mapping database within 1 mile of the transmission line. As currently designed, all the preliminary off ROW access roads are within the 1-mile study area. The results of the search are shown in Exhibit 12. The results are summarized below.

A review of the records available through the OHPO online mapping system identified 10 OHI-listed resources, 5 cemeteries, and 24 OAI-listed archaeological sites have been

inventoried within one mile of the Project area. Additionally, 9 previous archaeological investigations have been documented within one mile of the Project. There are no National Register of Historic Places (NRHP) resources within one mile of the Project. No OAI-listed archaeological sites are within the Project ROW. In addition, no cemeteries are in the Project ROW.

Four previous archaeological surveys intersect the Project ROW. All four previous archaeological investigations intersecting the Project ROW are associated with pipeline construction projects.

Based upon this review, the Project will not impact historic properties. Since the Project will rebuild an existing line, no increases to the line's visibility are anticipated. The results of the review are shown in Exhibit 13. Consequently, Jacobs recommends that no further archaeological investigations are necessary.

#### **4906-6-05 (B)(10)(d): Local, State and Federal Government Requirements**

Table 4 shows the list of government agency requirements and the application status at the time of filing.

**Table 4. List of Government Agency Requirements to be Secured Prior to Construction**

<b>Agency</b>	<b>Permit Requirement</b>	<b>Status</b>
Ohio Environmental Protection Agency (OEPA)	General NPDES Construction Storm Water Permit OHC000005	To be filed
Carroll and Harrison County Soil and Water Conservation District	Storm Water Pollution Prevention Plan (SWP3) – Review Application	To be filed
Carroll and Harrison Counties	Floodplain Development Review	To be filed
Ohio Department of Transportation; Carroll and Harrison County; Perry, Rumley, and Archer Townships	Driveway Entrance Permits (MR 505, Driveway Permit for Construction within the County Right-of-Way Limits)	To be filed
Ohio Department of Transportation; Carroll and	Roadway Occupancy Permits and Reviews (MR 505, Use of County	To be filed

Harrison County; Perry, Rumley, North, and Archer Townships	Right of Way Permit, Permit for User of County Highway ROW)	
Carroll and Harrison County; Perry, Rumley, North, and Archer Townships	Special Hauling Permit and Road Use Maintenance Agreement (RUMA)	To be filed
Columbus & Ohio River Railroad	Railroad Crossings Permits	To be filed

**4906-6-05 (B)(10)(e): Endangered, Threatened, and Rare Species Investigation**

Jacobs, on behalf of ATSI, submitted a request to the ODNR to conduct an Environmental Review of the entire Holloway-Knox 138kV Transmission Line. As part of the Environmental Review, the ODNR conducted a search of the ODNR Division of Wildlife's Natural Heritage Database to research the presence of any endangered, threatened, or rare species within one (1) mile of the Project area. The ODNR's response on June 1, 2020 stated that the Natural Heritage Database had two (2) state endangered species, two (2) state threatened species, one (1) state species of concern, and a mussel bed, within a one (1) mile radius of the Project area. The Division of Wildlife found that within range of the Project area, there is one (1) state and federally endangered species, one (1) state endangered and federal species of concern, three (3) state endangered species, and four (4) state threatened species. A copy of ODNR's response is included as Exhibit 14.

Jacobs also submitted a request to the USFWS for an Ecological Review on March 31, 2020 to research the presence of any endangered, threatened, or rare species within one (1) mile of the entire Holloway-Knox 138kV Transmission Line. A copy of USFWS's Ecological Review response is included as Exhibit 15. The USFW's response on April 13, 2020 indicated the federal and state endangered Indiana bat (*Myotis sodalis*) and the federally threatened northern long-eared bat (*Myotis septentrionalis*) are within the range of the Project. A list of all endangered, threatened, and rare species, as identified by ODNR and USFWS, is provided in Table 5.

**Table 5. List of Endangered, Threatened, and Rare Species**

Common Name	Scientific Name	Federal Listed Status	State Listed Status	Affected Habitat
Mammals				
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered	Trees and forests
Northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	Threatened	Trees and forests
Birds				
American bittern	<i>Botaurus lentiginosus</i>	NA	Endangered	Bogs, meadows, and swamps
Least bittern	<i>Ixobrychus exilis</i>	NA	Threatened	Dense emergent marshlands or wetlands
Upland sandpiper	<i>Bartramia longicauda</i>	NA	Endangered	Grasslands
Northern harrier	<i>Circus cyaneus</i>	NA	Endangered	Marshes and grasslands
Sharp-shinned hawk	<i>Accipiter striatus</i>	NA	Species of Concern	Forests and agricultural
Barn owl	<i>Tyto alba</i>	NA	Threatened	Forests and agricultural
Amphibians				
Eastern hellbender	<i>Cryptobranchus alleganiensis</i>	Species of Concern	Endangered	Streams
Mussels				
Threehorn wartyback	<i>Obliquaria reflexa</i>	NA	Threatened	Rivers
Fish				
Tippecanoe darter	<i>Etheostoma tippecanoe</i>	NA	Threatened	Rivers and streams
Channel darter	<i>Percina copelandi</i>	NA	Threatened	Lakes and rivers
Plants				
Drummond's aster	<i>Symphyotrichum drummondii</i>	NA	Threatened	Forest openings

The response from ODNR and USFWS indicated that the Project is within range of the federal and state endangered Indiana bat and the federal and state threatened Northern long-eared bat. Within the Project disturbance area, tree clearing will be conducted between October 1st and March 31st to avoid impacts to these species. Therefore, no adverse effects to these species are anticipated.

The response from ODNR indicated the Project is within the range of numerous aquatic species as referenced in Table 5. No impact to these species is expected because no in-stream work is proposed.

The response from ODNR indicated the Project is within range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Impacts to dry grasslands, including native grasslands, seeded grasslands, hayfields, and grazed and un-grazed pastures, should be avoided during the nesting period of April 15th to July 31st.

The response from ODNR indicated the Project is within range of the northern harrier (*Circus cyaneus*), a state endangered bird. Impacts to large marshes and grasslands should be avoided during the nesting period of May 15th to August 1st.

The response from ODNR indicated the Project is within range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Impacts to bogs and large wet meadows should be avoided during the nesting period of May 1st to July 31st.

The response from ODNR indicated the Project is within range of the Least bittern (*Ixobrychus exilis*), a state threatened bird. Impacts to inland marshes and dense emergent wetlands should be avoided during the nesting period of May 1st to July 31st.

The response from ODNR Ohio Natural Heritage Database indicated the Sharp-shinned hawk (*Accipiter striatus*), a state species of concern bird, and the barn owl (*Tyto alba*), a state threatened bird, have been observed within one-mile of the project area. No sightings or nests of these species were observed during the environmental surveys of the Project.

The response from ODNR Ohio Natural Heritage Database indicated the Drummond's aster (*Symphyotrichum drummondii*), a state threatened plant, has a recorded observation

in a wooded area located 0.5-mile to the east of this section of line in Harrison County. No general observations of this species were recorded during the environmental surveys of the Project.

Jacobs is presently mapping the various habitats within the Project's disturbance area to identify any areas of concern relating to the above-listed species. Coordination with ODNR will continue to evaluate appropriate avoidance and minimization measures, including by not limited to sequencing construction activities to address seasonal restrictions to reduce potential impact.

#### **4906-6-05 (B)(10)(f): Areas of Ecological Concern**

As part of the investigation, the ODNR and the USFWS provided responses regarding the presence of unique ecological sites, geological features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forest, national wildlife refuges, or other protected natural areas within one (1) mile of the project area. A copy of ODNR's response is included as Exhibit 14. The USFW's response on April 13, 2020 indicated that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the Project area. A copy of USFWS's Ecological Review response is included as Exhibit 15.

Jacobs conducted a wetland and stream delineation of the Project. Jacobs' assessment focused on the approximately 9-miles of existing 100-foot cleared corridor that starts in Carroll County, near the intersection of Pomona Road and Amsterdam Road SE, and extends south to Harrison County, near the intersection of Keyser Road and Lower Clearfork Road, as shown on the Overview Maps (Exhibits 1 and 2).

Jacobs conducted the environmental survey of the Project May through October 2018. A total of 25 wetlands, 34 streams, and two ponds were delineated within the Project environmental survey corridor (ESC) and are depicted on Figures 3-A to 3-AH of Exhibit 16,, a copy of the wetland and waterbody delineation report . The 25 wetlands totaling 2.19 acres within the ESC were all categorized as PEM. Of the 25 wetlands, 18 wetlands were identified as Category 1 wetlands and seven wetlands were identified as Category 2 wetlands. No Category 3 wetlands were identified within the ESC. Categories were based

on the Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method (ORAM) scores, which were scored on a variety of factors such as size, surrounding land use, disturbance, invasive species, and vegetation growth. The 34 streams, totaling 6,198 linear feet within the ESC, included 17 ephemeral streams, 13 intermittent streams, and four perennial streams. Three streams were assessed using the OEPA's Qualitative Habitat Evaluation Index (QHEI) methodology and 31 streams were assessed using the OEPA's Headwater Habitat Evaluation Index (HHEI) methodology. Additionally, two ponds were identified within the ESC that total 0.07 acres.

All streams will be crossed above the ordinary high-water mark to avoid impacts and no in-stream work is proposed for the Project. Additionally, ATSI will utilize best management practices to avoid any indirect impact to streams and wetlands through its use of erosion and sediment controls. Streams will either be avoided or bridged (no work below the ordinary high-water mark), and wetlands will be traversed using low ground pressure equipment and/or matting. Jacobs has made preliminary determinations concerning the likely jurisdiction of all assessed features; however, the United States Army Corps of Engineers ("USACE") will make the final determination. Further coordination with the USACE will occur, if necessary, prior to the submittal of any permit or commencing construction activities.

The results of the environmental resource survey described in this report conducted by Jacobs are limited to what was identified within the ESC and depicted in Figures 3-A to 3-AH of Exhibit 16. The information contained in this wetland and waterbody delineation summary is for a study area that may be larger than the actual Project limits-of-disturbance for construction; therefore, lengths and acreages listed above may likely not constitute the actual impacts of the Project at the time of construction. If permits are necessary, actual impacted lengths and/or acreages will be submitted in subsequent permit applications.

Additionally, a review of the online FEMA Flood Insurance Rate Mapping was performed. FEMA floodplain mapping can be found within the wetland and waterbody delineation report in Exhibit 16. Consultation with Carroll and Harrison counties is required for floodplain development review.

**4906-6-05(B)(10)(g): Other Information**

Construction and operation of the proposed Project will be in accordance with the requirements specified in the latest revision of the NESC as adopted by the PUCO and will meet all applicable safety standards established by the Occupational Safety and Health Administration.

No other or unusual conditions are expected that will result in significant environmental, social, health or safety impacts.

**4906-6-07: Documentation of Letter of Notification Transmittal and Availability for Public Review**

This Letter of Notification is being provided concurrently with its docketing with the Board to the following officials:

**Carroll County**

Board of County Commissioners  
Mr. Jeffery Ohler  
119 South Lisbon Street, Suite 201  
Carrollton, OH 44615

Carroll County Engineer's Office  
Mr. Brian Wise  
200 Kensington Road Northeast  
Carrollton, OH 44615

Board of County Commissioners  
Mr. Robert Wirkner  
119 South Lisbon Street, Suite 201  
Carrollton, OH 44615

Carroll County Regional Planning  
Commission  
Mr. Tom Konst, Director  
119 South Lisbon Street, Suite 201  
Carrollton, OH 44615

Board of County Commissioners  
Mr. Christopher Modranski  
119 South Lisbon Street, Suite 201  
Carrollton, OH 44615

Carroll County Soil & Water District  
Ms. Amanda Tubaugh, District Admin.  
613 High Street Northwest #2  
Carrollton, Ohio 44615

**Perry Township**

Mr. Eric Horn  
Perry Township Trustee  
154 Amsterdam Road SW  
Scio, OH 43988

Mr. Don Leggett, II  
Perry Township Trustee  
154 Amsterdam Road SW  
Scio, OH 43988



Mr. Gary Staten  
Perry Township Trustee  
154 Amsterdam Road SW  
Scio, OH 43988

Ms. Marcia Trushel  
Perry Township Fiscal Officer  
154 Amsterdam Road SW  
Scio, OH 43988

### **Harrison County**

Mr. Isaac Paul Coffland  
Harrison County Commissioner  
19 Country Club Mnr  
Cadiz, OH 43907

Mr. Douglas Nelson Bachman, P.E., P.S.  
Harrison County Engineer  
86407 North Bay Rd  
Scio, OH 43988

Mr. Dale Ray Norris  
Harrison County Commissioner  
700 Deersville Ave  
Cadiz, OH 43907

Ms. Keila Ferguson, District Program  
Administrator  
Harrison County Soil & Water Conservation  
District  
538 North Main St  
Cadiz, OH 43907

Mr. Don R. Bethel  
Harrison County Commissioner  
688 Kerr Ave  
Cadiz, OH 43907

Mr. Nick Homrighausen  
Executive Director, Harrison County  
Community Improvement Corporation  
538 N Main St  
Cadiz Oh 43907

### **Rumley Township**

Mr. Damian Nathan Kovarik  
Rumley Township Trustee  
88375 Fairview Rd  
Jewett, OH 43986

Mr. Andrew Lee  
Rumley Township Trustee  
206 W High St, P.O. Box 239  
Jewett, OH 43986

Mr. Kevin Larbaugh  
Rumley Township Trustee  
89170 Hauber Rd  
Jewett, OH 43986

Ms. Barbara J. Birney  
Rumley Township Fiscal Officer  
41771 Rumley Rd East  
Jewett, OH 43986

### **Archer Township**

Mr. Matthew Scott Dulkoski  
Archer Township Trustee  
44690 Jewett Hopedale Rd  
Fewett, OH 43986

Mr. Troy Blackburn  
Archer Township Trustee  
87329 Brair Rd  
Jewett, OH 43986

Mr. Aaron L. Dodds  
Archer Township Trustee  
83510 Bakers Ridge Rd  
Cadiz, OH 43907

Mr. Robert J. Positano  
Archer Township Fiscal Officer  
84624 Cadiz Fewett Rd  
Cadiz, OH 43907

**Libraries**

Carroll County District Library  
Ellen Finnicum, Director  
70 2nd Street Northeast  
Carrollton, OH 44615

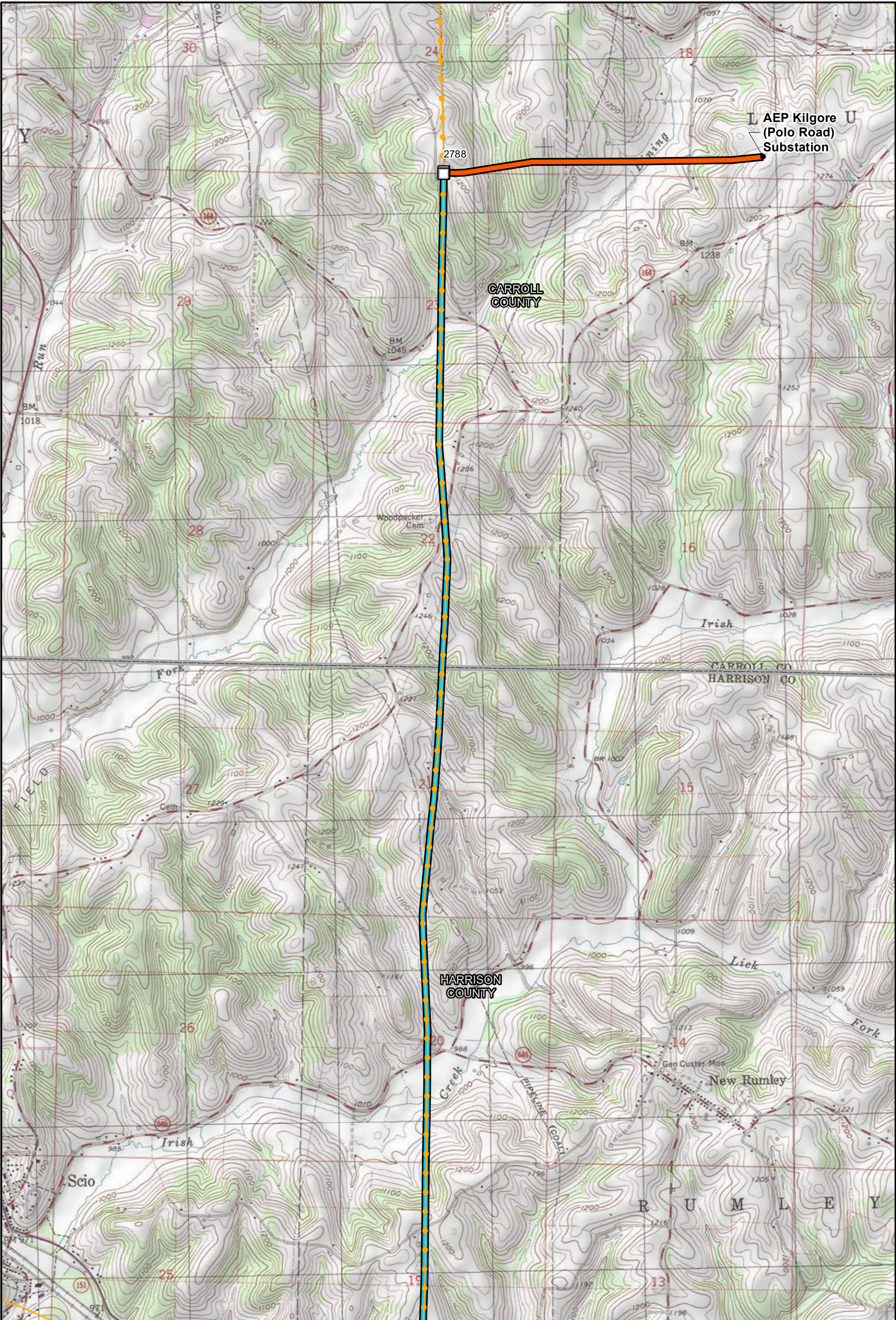
Scio Branch Library  
Ms. Sandy Thompson, Director  
331 W. Main St  
Scio, OH 43988

Copies of the transmittal letters to these officials have been included with this application as proof of compliance under OAC Rule 4906-6-07 (B) to provide the Board with proof of notice to local officials as required by OAC Rule 4906-6-07 (A)(1) and to libraries per OAC Rule 4906-6-07 (A)(2).

Information is posted at:

[www.firstenergycorp.com/about/transmission\\_project/ohio.html](http://www.firstenergycorp.com/about/transmission_project/ohio.html) on how to request an electronic or paper copy of this Letter of Notification application. The link to this website is being provided to meet the requirements of OAC Rule 4906-6-07 (B) and to provide the Board with proof of compliance with the notice requirements in OAC Rule 4906-6-07 (A)(3).





**LEGEND:**

- Substation
- Existing Structure
- Kilgore (Polo Road) - New Stacy BUC Segment
- Existing Transmission Line
  - Below 138kV
  - 138kV
  - Existing Transmission Line Owned By Others
- County Boundary

**Locator Map**

**BASE MAP SOURCE:**  
ESRI USA Topo Map  
Jewett and Scio Quadrangles

0 0.25 0.5  
MILES

**ATSI**  
American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

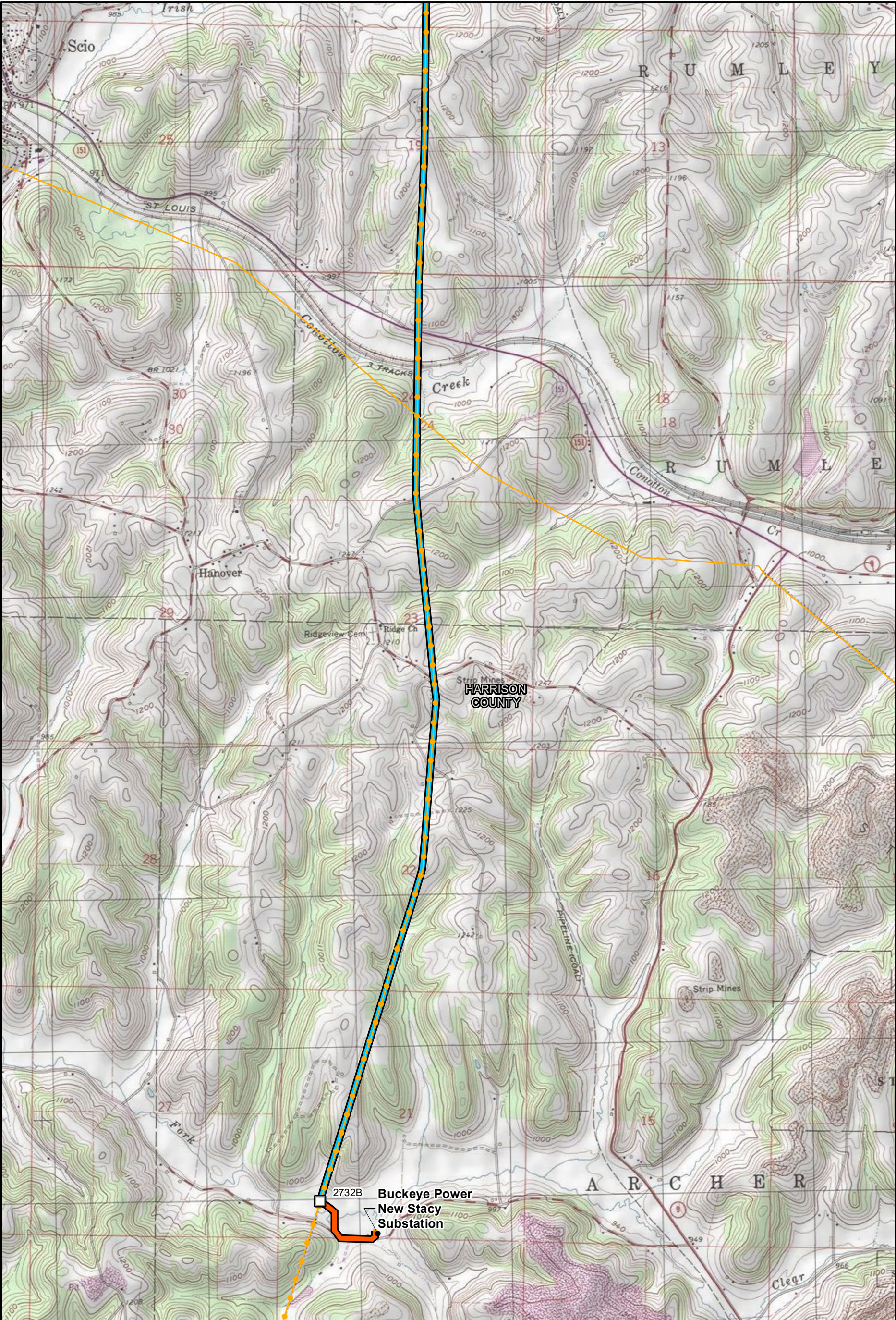
**EXHIBIT 1 - 1**  
**TOPOGRAPHIC OVERVIEW MAP**

PN: D3449600	Date: 4/7/2022
CREATED BY: TCC	<b>Jacobs</b>
REVIEWED BY: BAO	

Knox-Nottingham 138 kV  
Transmission Line Rebuild Project  
Kilgore (Polo Road) -  
New Stacy BUC Segment

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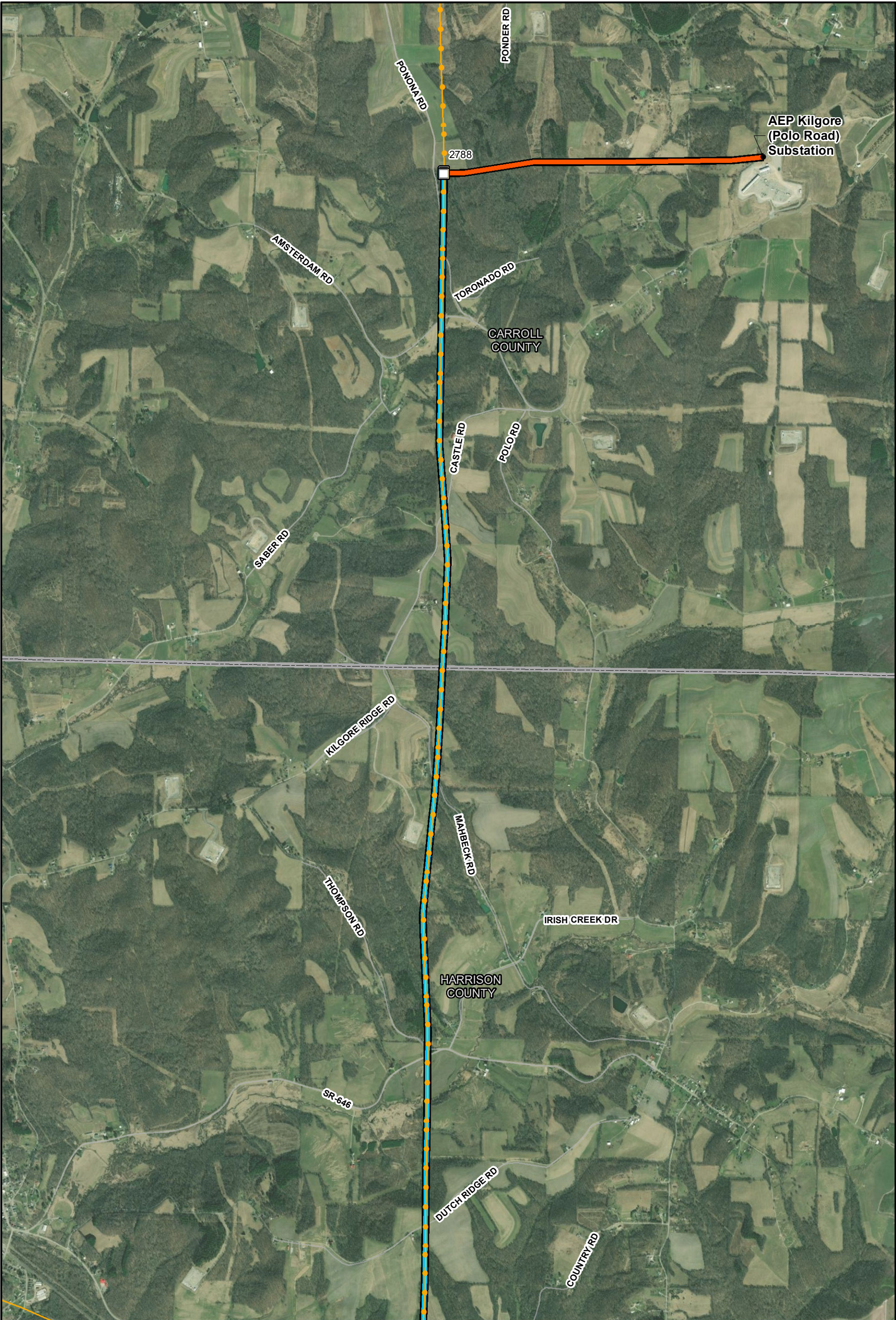




<b>LEGEND:</b> <ul style="list-style-type: none"><li>Substation</li><li>Existing Structure</li><li>Kilgore (Polo Road) - New Stacy BUC Segment</li><li><b>Existing Transmission Line</b><ul style="list-style-type: none"><li>Below 138kV</li><li>138kV</li><li>Existing Transmission Line Owned By Others</li><li>County Boundary</li></ul></li></ul>	<b>Locator Map</b>	<b>BASE MAP SOURCE:</b> ESRI USA Topo Map Jewett and Scio Quadrangles  0 0.25 0.5 MILES	 <b>ATSI</b> American Transmission Systems, Inc. a subsidiary of FirstEnergy Corp.  <b>EXHIBIT 1 - 2</b> <b>TOPOGRAPHIC OVERVIEW MAP</b>  PN: D3449600 CREATED BY: TCC REVIEWED BY: BAO	<b>Knox-Nottingham 138 kV</b> <b>Transmission Line Rebuild Project</b> <b>Kilgore (Polo Road) -</b> <b>New Stacy BUC Segment</b>  Date: 4/7/2022  <b>Jacobs</b>
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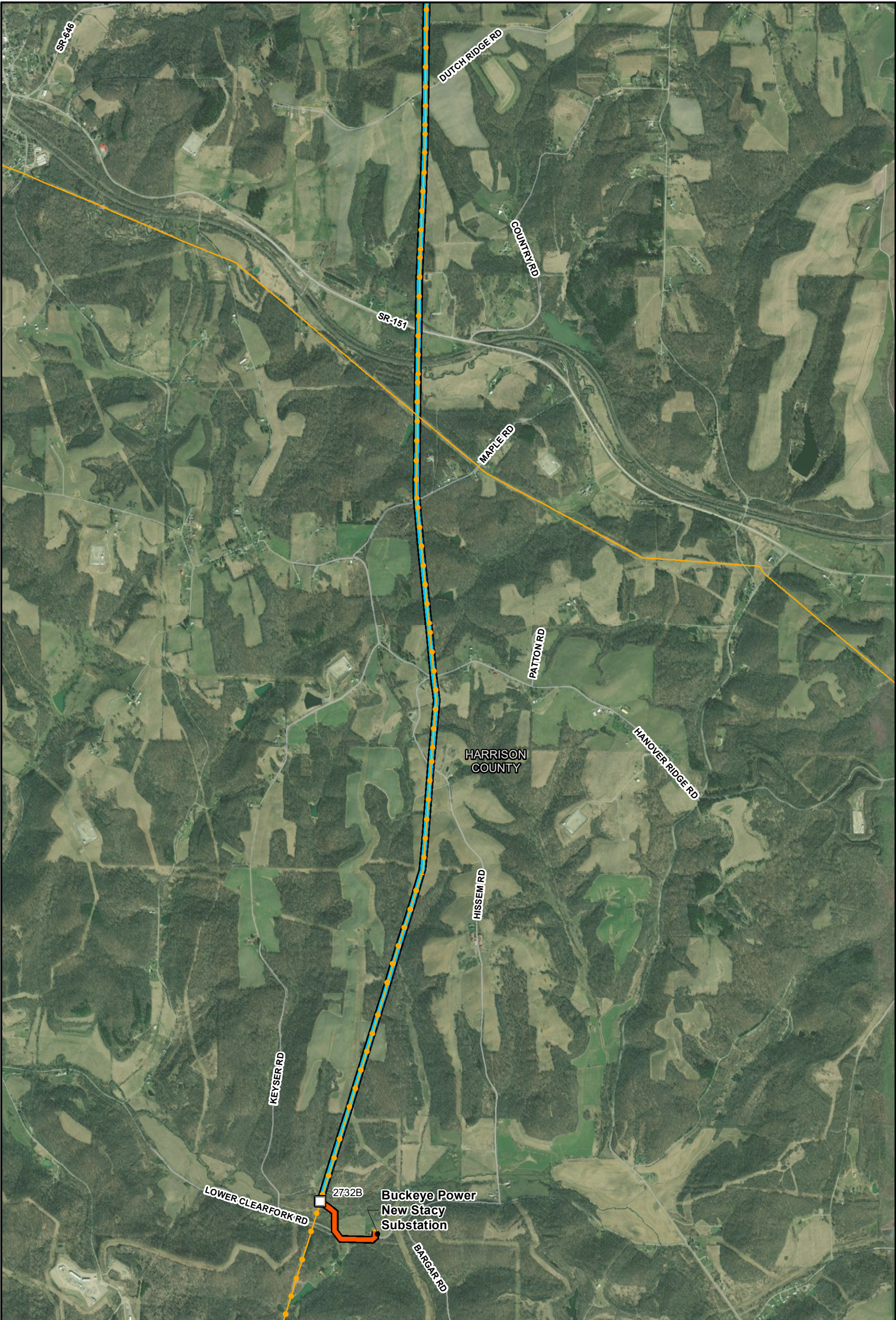




<b>LEGEND:</b> <ul style="list-style-type: none"><li>● Substation</li><li>□ Existing Structure</li><li>■ Kilgore (Polo Road) - New Stacy BUC Segment</li></ul> <b>Existing Transmission Line</b> <ul style="list-style-type: none"><li>— Below 138kV</li><li>— 138kV</li><li>— Existing Transmission Line Owned By Others</li><li>▭ County Boundary</li></ul>	<b>Locator Map</b>	<b>BASE MAP SOURCE:</b> ESRI World Imagery			Knox-Nottingham 138 kV Transmission Line Rebuild Project Kilgore (Polo Road) - New Stacy BUC Segment	
				<b>EXHIBIT 2 - 1 AERIAL OVERVIEW MAP</b>		
				PN: D3449600	Date: 4/7/2022	
				CREATED BY: TCC		
REVIEWED BY: BAO						

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<b>LEGEND:</b> <ul style="list-style-type: none"><li>● Substation</li><li>□ Existing Structure</li><li>■ Kilgore (Polo Road) - New Stacy BUC Segment</li></ul> <b>Existing Transmission Line</b> <ul style="list-style-type: none"><li>— Below 138kV</li><li>— 138kV</li><li>— Existing Transmission Line Owned By Others</li><li>▭ County Boundary</li></ul>	<b>Locator Map</b>	<b>BASE MAP SOURCE:</b> ESRI World Imagery			Knox-Nottingham 138 kV Transmission Line Rebuild Project Kilgore (Polo Road) - New Stacy BUC Segment	
				<b>EXHIBIT 2 - 2</b> <b>AERIAL OVERVIEW MAP</b>		
				PN: D3449600	Date: 4/7/2022	
				CREATED BY: TCC		
REVIEWED BY: BAO						

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
CARROLL & HARRISON  
COUNTIES  
STATE OF OHIO

AEP  
KILGORE (POLO ROAD)  
SUB

NEW STACY  
BUCKEYE  
SUB

CARROLL COUNTY  
HARRISON COUNTY

LEGEND

-  - AEP SUBSTATION
-  - BUCKEYE POWER SUBSTATION
-  - KILGORE (POLO ROAD)-NEW STACY BUC SEGMENT  
138 KV TRANSMISSION LINE REBUILD
-  - KNOX-NOTTINGHAM 138 KV TRANSMISSION LINE
-  - COUNTY BOUNDARIES

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Kilgore (Polo Road)-New Stacey BUC 138 kV  
Transmission Line Rebuild

GENERAL LAYOUT

EXHIBIT 3

SCALE: NTS

PAPER SIZE: 11X8.5

## Previously Presented: 8/31/2018 SRTEP

### Problem Statement (Scope and Need/Drivers)

#### Equipment Material Condition, Performance and Risk

- Improve system reliability and performance
- Remove obsolete and deteriorated equipment
  - 53 to 82 year old construction
  - ~~57%-83%~~ inspection rejection rate
  - ~~Approximately 29 repair records over the past 3 years; increasing trend~~
  - 529 active repair conditions; negative increase in maintenance findings
- Upgrade to current standards
- Support shale gas load growth area; multiple (6) transmission service connections

### Potential Solution:

#### Holloway-Nottingham-Knox 138 kV Line Rebuild (\$1718)

- Rebuild the existing Knox-Nottingham 138 kV Line (Approximately 44 miles).
- Rebuild the existing Nottingham-Holloway #1 138 kV Line (Approximately 21 miles)
- Existing Conductor: Mixed conductor 795 ACSR & 477 ACSR
- Future Conductor: 795 ACSR
- Old Rating 158 MVA SN    New Rating 275 MVA SN
- Rebuild the existing Nottingham-Holloway #2 138 kV Line (Approximately 21 miles) sharing a structure with the Nottingham-Holloway #1 138 kV Line
- Old Rating 200 MVA SN    New Rating 275 MVA SN
- Rebuild a portion of the Nottingham-Yager #1 138 kV Line (Approximately 3.6 miles) sharing a structure with the Knox-Nottingham 138 kV Line
- Old Rating 200 MVA SN    New Rating 275 MVA SN

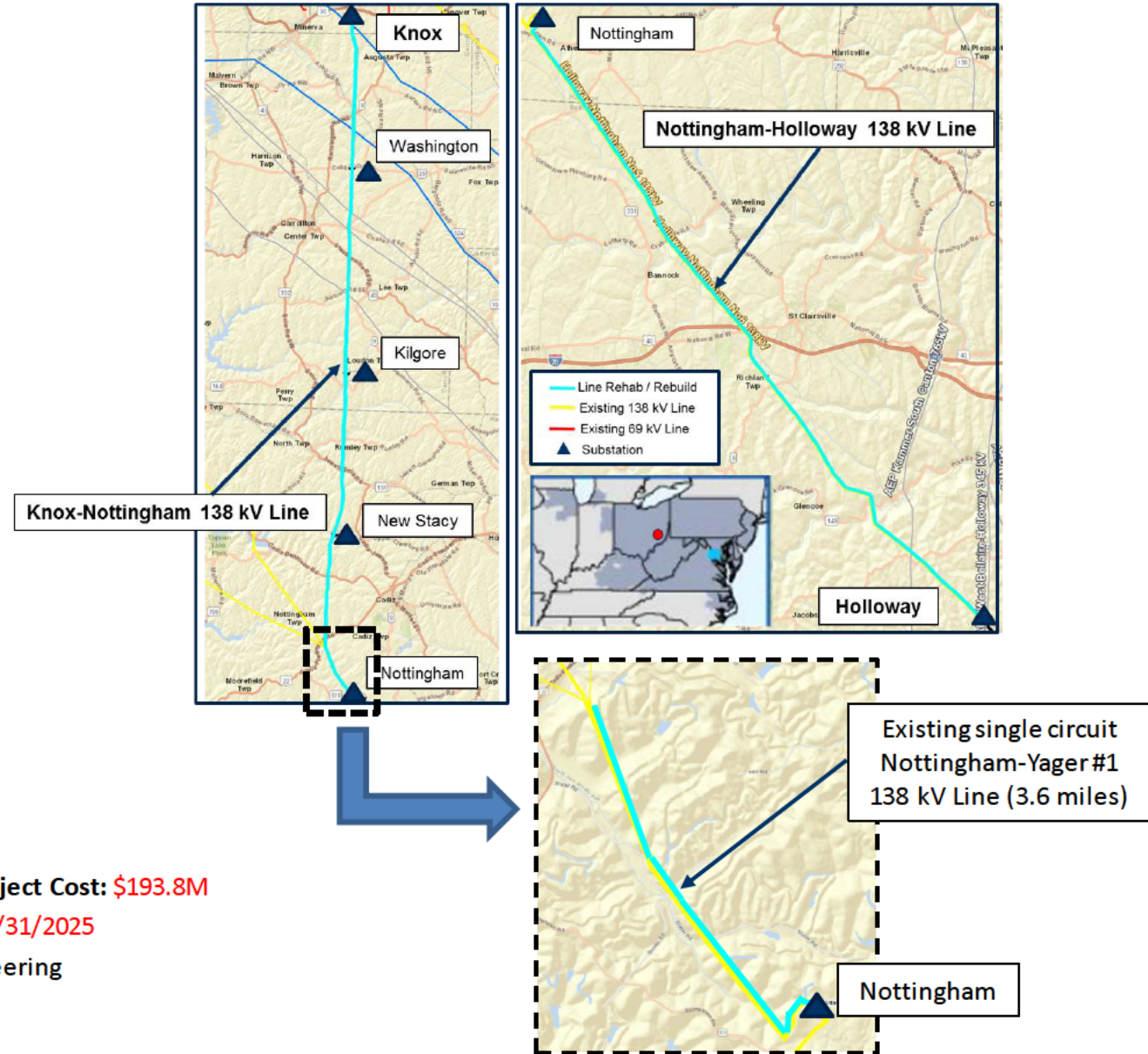
Alternatives Considered: Maintain existing condition

Estimated Project Cost: \$193.8M

Project ISD: 5/31/2025

Status: Engineering

## ATSI Transmission Zone Holloway-Nottingham-Knox 138 kV Line

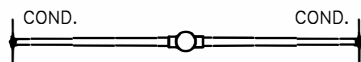




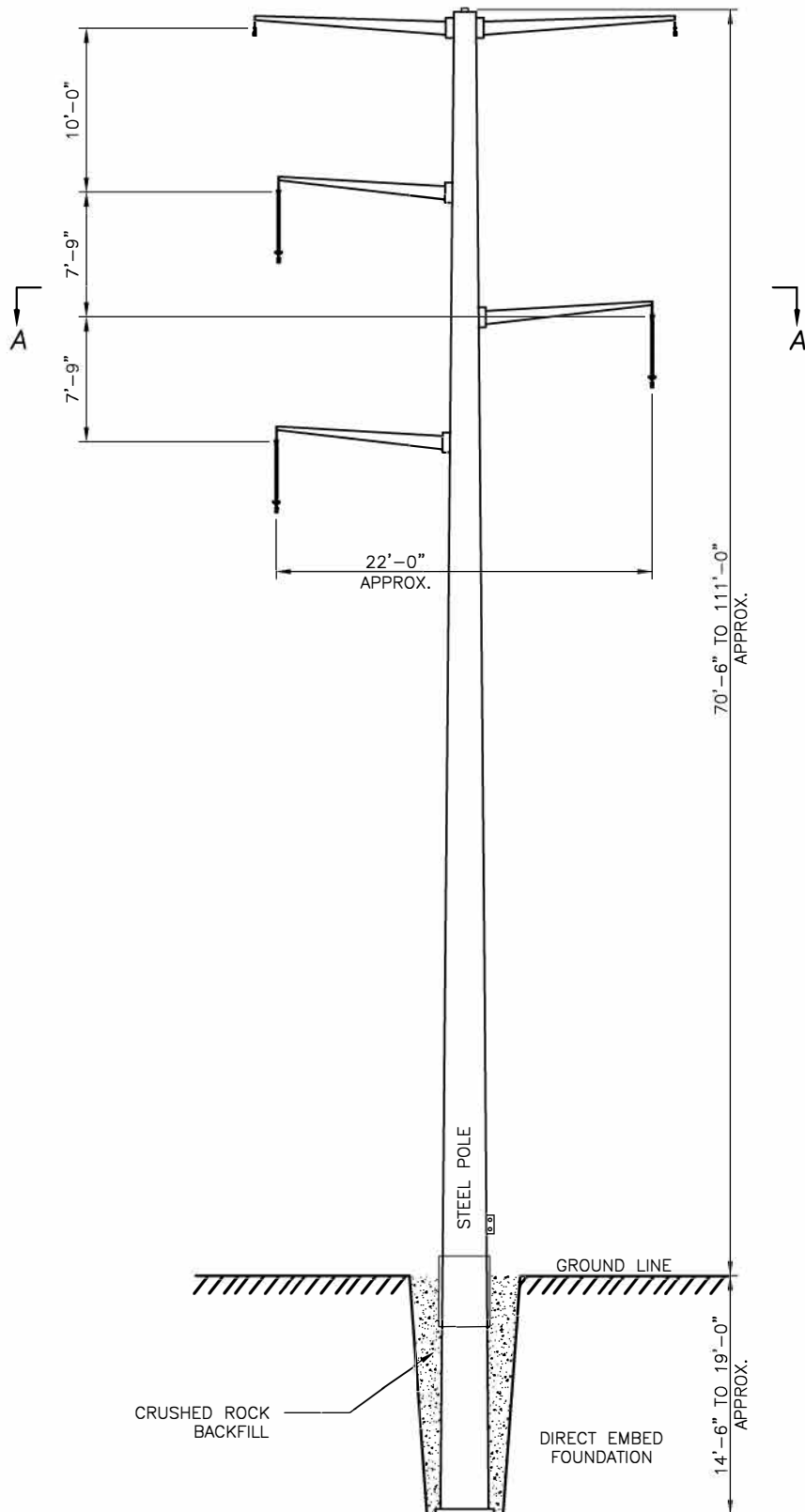
**Exhibit 5**  
**Property Owner List and Agricultural Land**  
**Knox-Nottingham 138 kV Transmission Line Rebuild Project - Kilgore (Polo Road)-New**  
**Stacy Buc Segment**  
**Case Number 22-0285-EL-BLN**

Parcel Number	Acreage	Easement Status	Agricultural District (Yes/No)	Agricultural District Expiration Year
<b>Notification for Impacted Parcels Only</b>				
230000133001	0.070	Existing	No	N/A
230000131001	9.930	Existing	No	N/A
010000564002	4.05	Existing	No	N/A
010000345000	221.02	Existing	No	N/A
010000161000				
010000471000	326.580	Existing	Yes	2025
	36.470	Existing	Yes	2025
230000290000				
	49.810	Existing	No	N/A
010000579000				
	0.50	Existing	No	N/A
280001144000				
280001145000	42.00	Existing	No	N/A
	168.00	Existing	No	N/A
230000726001				
230000725000	117.39	Existing	No	N/A
	0.600	Existing	No	N/A
230000360000				
	3.36	Existing	No	N/A
230000061000				
	144.00	Existing	No	N/A
230000062000				
	71.79	Existing	No	N/A
230000146000				
	234.96	Existing	No	N/A
230000178000				
230000179000	80.00	Existing	No	N/A
	10.00	Existing	No	N/A
280000382000				
280000383000	8.75	Existing	No	N/A
	73.015	Existing	No	N/A
280000378000				
	79.62	Existing	Yes	2027
010000236000				
	19.29	Existing	No	N/A
230000801000				
230000802000	1.46	Existing	No	N/A
	1.46	Existing	No	N/A
230000798000				
230000799000	1.46	Existing	No	N/A
	1.46	Existing	No	N/A
230000800000				
	4.06	Existing	No	N/A

230000796000 230000797000	1.45	Existing	No	N/A
010000564000 010000565000 010000297000	10.32 1.84 0.49	Existing Existing Existing	No No No	N/A N/A N/A
010000598000	11.574	Existing	No	N/A
230000144002	5.000	Existing	No	N/A
230000131000 230000132000	103.131 3.76	Existing Existing	No No	N/A N/A
230000692000 230000721000	59.88 1.19	Existing Existing	No No	N/A N/A
010000564001	147.58	Existing	No	N/A
230000177000	43.56	Existing	No	N/A
230000726000 230000893000	15.57 60.00	Existing Existing	No No	N/A N/A
280000781000 280001130000 280001128000	118.00 None Provided None Provided	Existing Existing Existing	No No No	N/A N/A N/A
230000784000	3.842	Existing	No	N/A
230000284000 230000283000	25.69 9.10	Existing Existing	No No	N/A N/A
230000232000	107.332	Existing	No	N/A
230000286000	117.76	Existing	No	N/A
230000289002	32.72	Existing	No	N/A
230000272000 230000042000	80.50 125.750	Existing Existing	No No	N/A N/A
280001334000	40.00	Existing	No	N/A
010000007001 010000007000 010000209002	80.00 160.00 160.00	Existing Existing Existing	No No No	N/A N/A N/A



SECTION A - A



NOTE:  
DETAILS DEPICTED IN FIGURE CAN BE APPLIED FOR ANY TYPE  
OF SINGLE CIRCUIT STEEL POLE SUSPENSION CONFIGURATION.

**\*\*NOT TO SCALE**

**ATSI®**

American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

Kilgore (Polo Road)-New Stacey BUC  
138 kV Transmission Line Rebuild

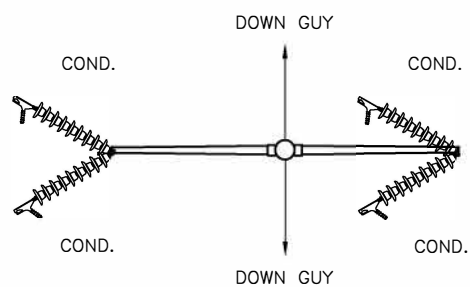
138kV SINGLE CIRCUIT  
STEEL POLE, SUSPENSION

EXHIBIT 6

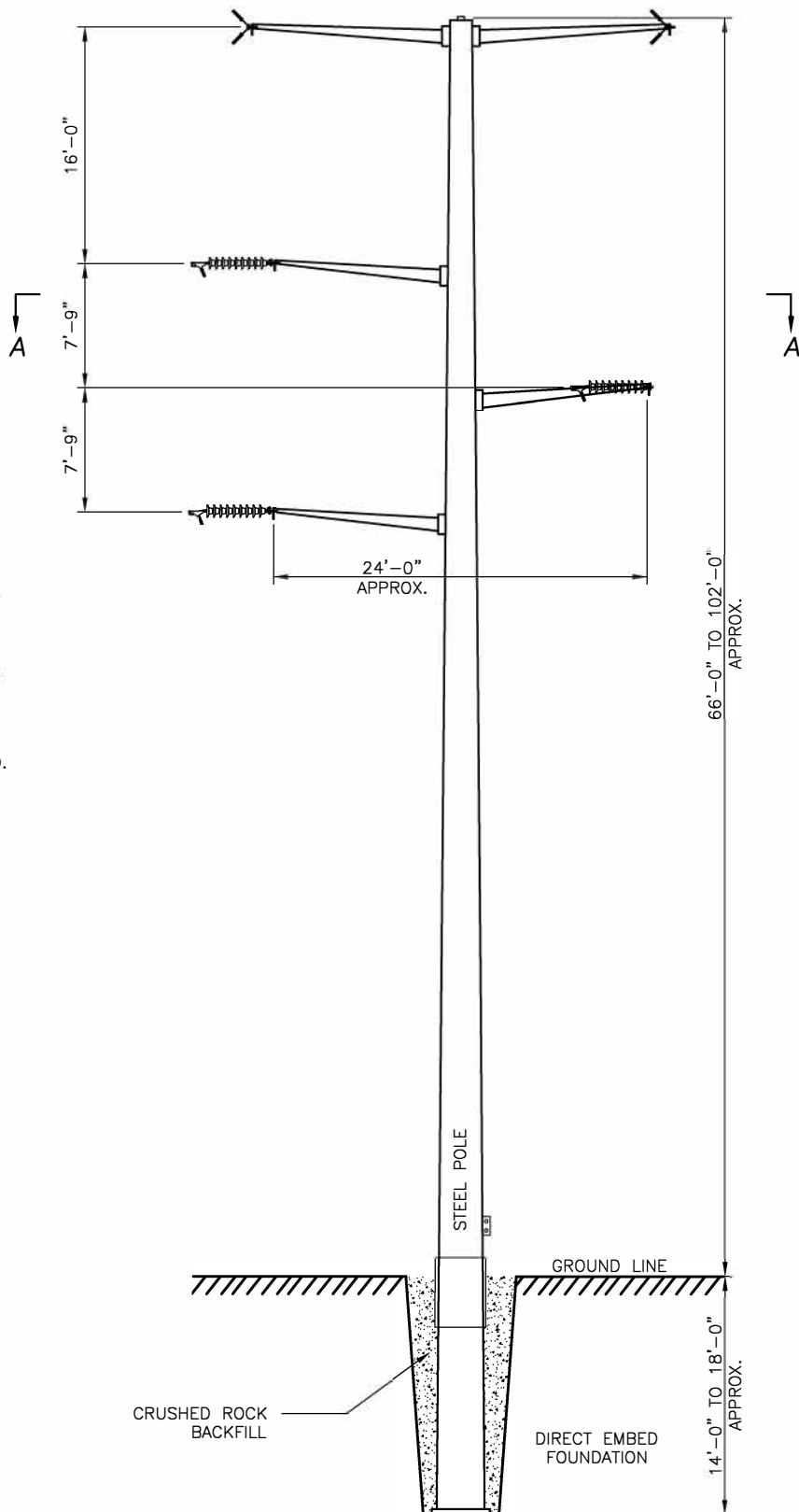


**\*\*NOT TO SCALE**

EXHIBIT 7



SECTION A - A



NOTE:  
DETAILS DEPICTED IN FIGURE CAN BE APPLIED FOR ANY  
TYPE OF SINGLE CIRCUIT STEEL POLE STRAIN CONFIGURATION.

**\*\*NOT TO SCALE**

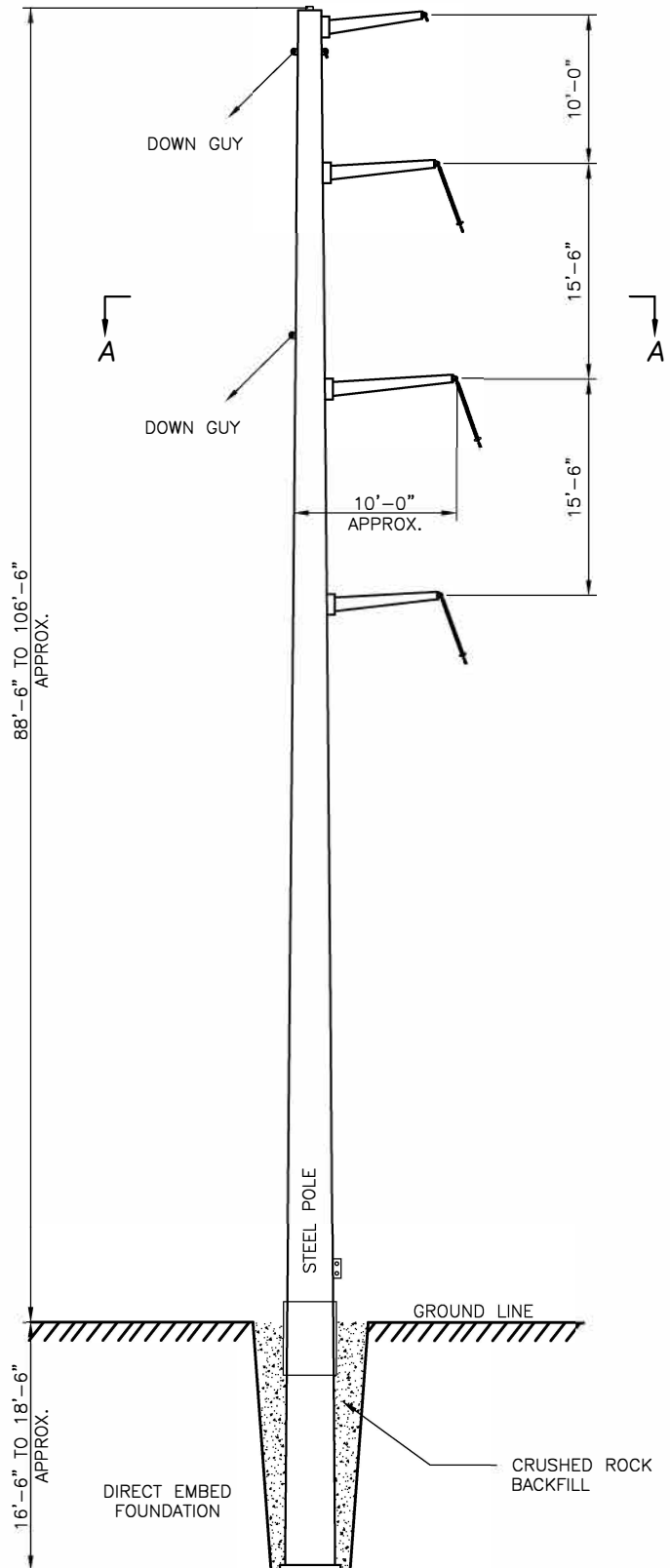
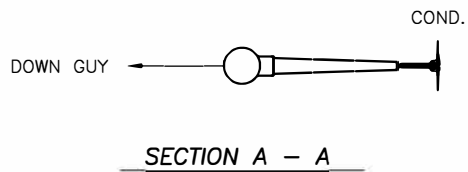
**ATSI®**

American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

Kilgore (Polo Road)-New Stacey BUC  
138 kV Transmission Line Rebuild

138kV SINGLE CIRCUIT  
STEEL POLE, STRAIN

EXHIBIT 8



NOTE:  
DETAILS DEPICTED IN FIGURE CAN BE APPLIED FOR ANY  
TYPE OF SINGLE CIRCUIT STEEL POLE ANGLE CONFIGURATION.

**\*\*NOT TO SCALE**

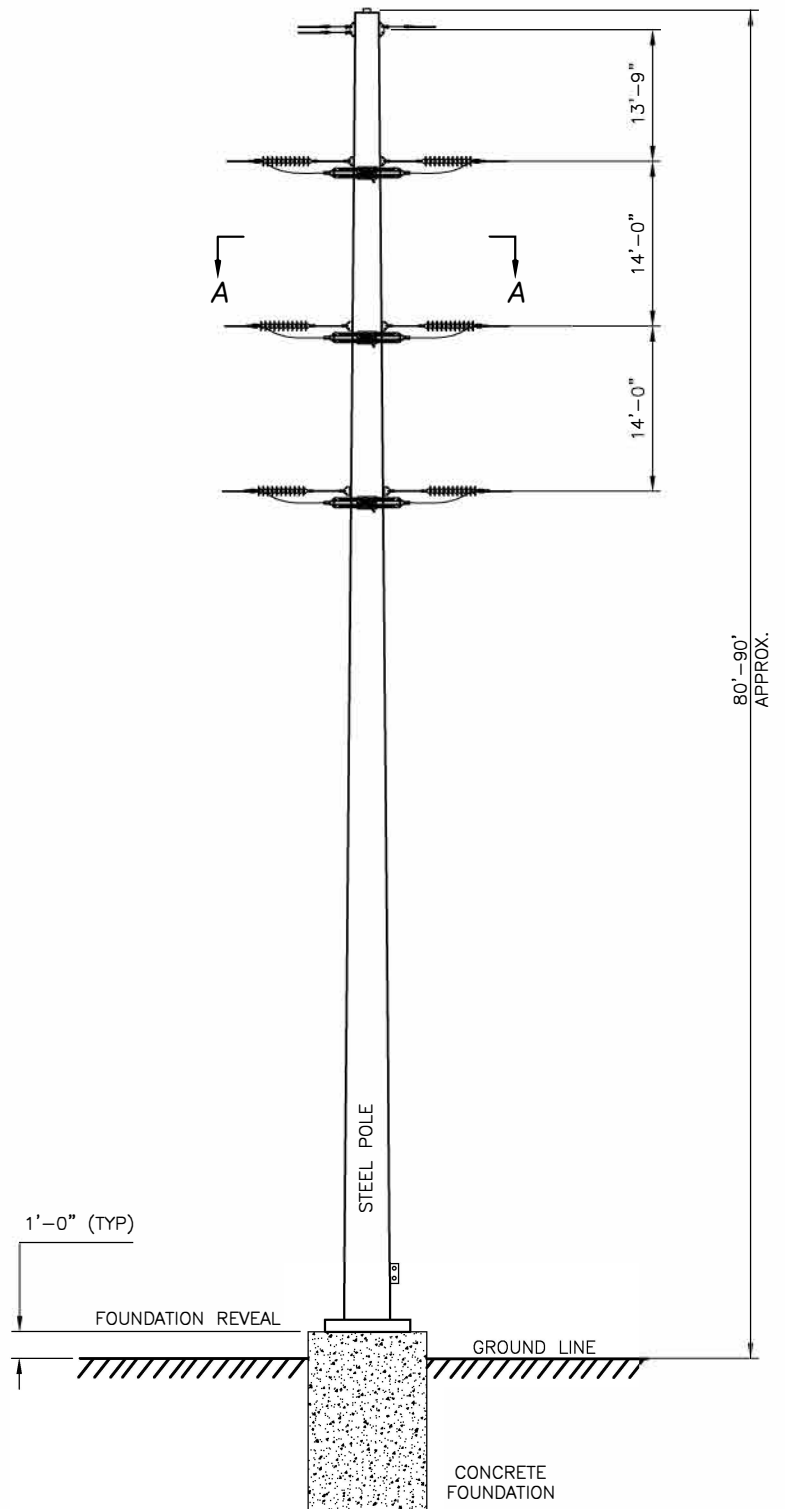
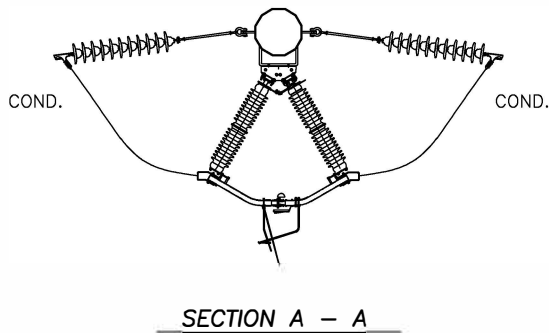
**ATSI®**

American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

Kilgore (Polo Road)-New Stacey BUC  
138 kV Transmission Line Rebuild

138kV SINGLE CIRCUIT  
STEEL POLE, ANGLE

EXHIBIT 9



NOTE:  
DETAILS DEPICTED IN FIGURE CAN BE APPLIED FOR ANY TYPE  
OF SINGLE CIRCUIT STEEL POLE SWITCH CONFIGURATION.

**\*\*NOT TO SCALE**

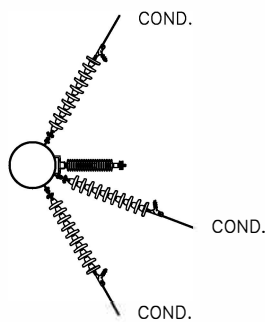
**ATSI®**

American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

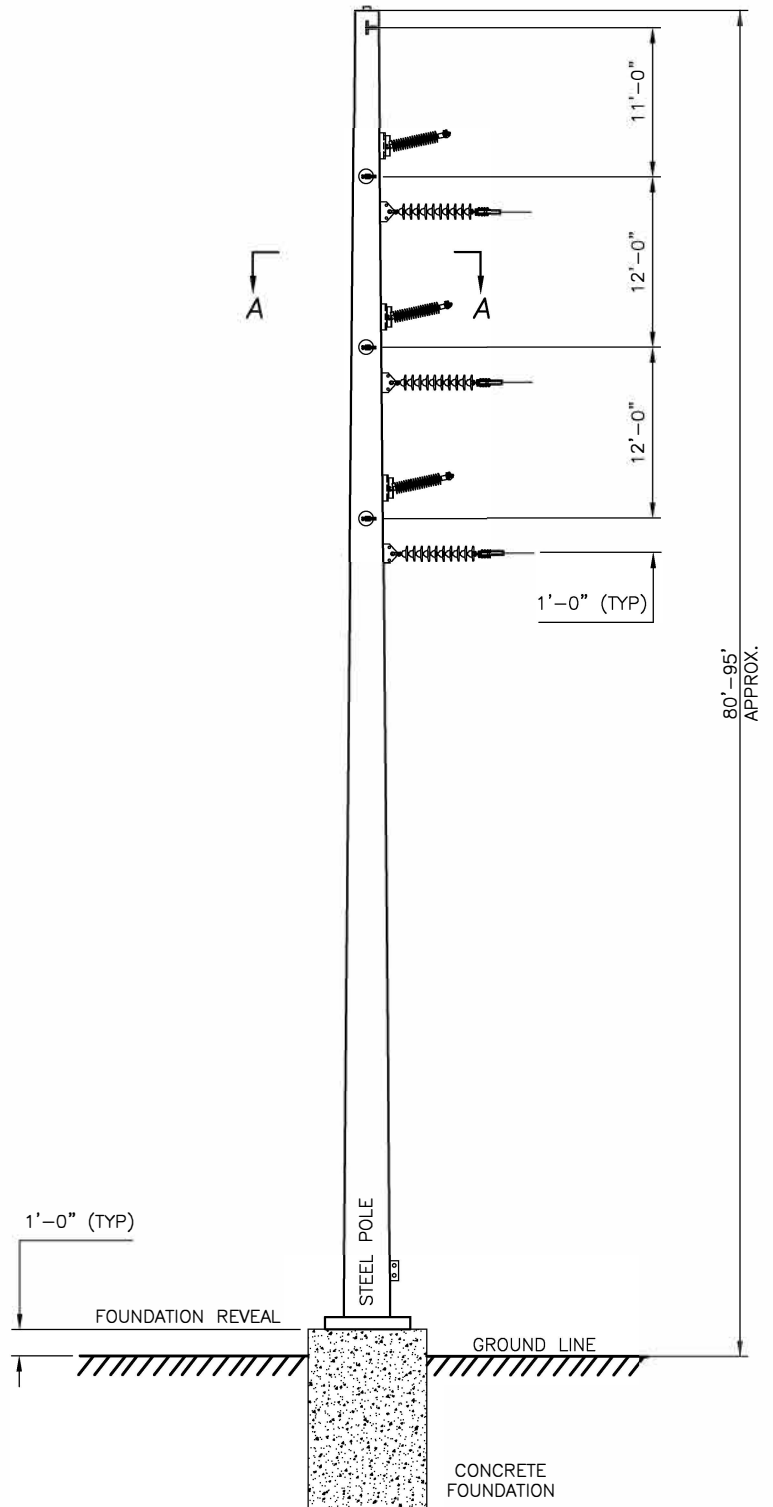
Kilgore (Polo Road)-New Stacey BUC  
138 kV Transmission Line Rebuild

138kV SINGLE CIRCUIT  
STEEL POLE, SWITCH

EXHIBIT 10



SECTION A - A



NOTE:  
DETAILS DEPICTED IN FIGURE CAN BE APPLIED FOR ANY  
TYPE OF SINGLE CIRCUIT STEEL POLE TAP CONFIGURATION.

**\*\*NOT TO SCALE**

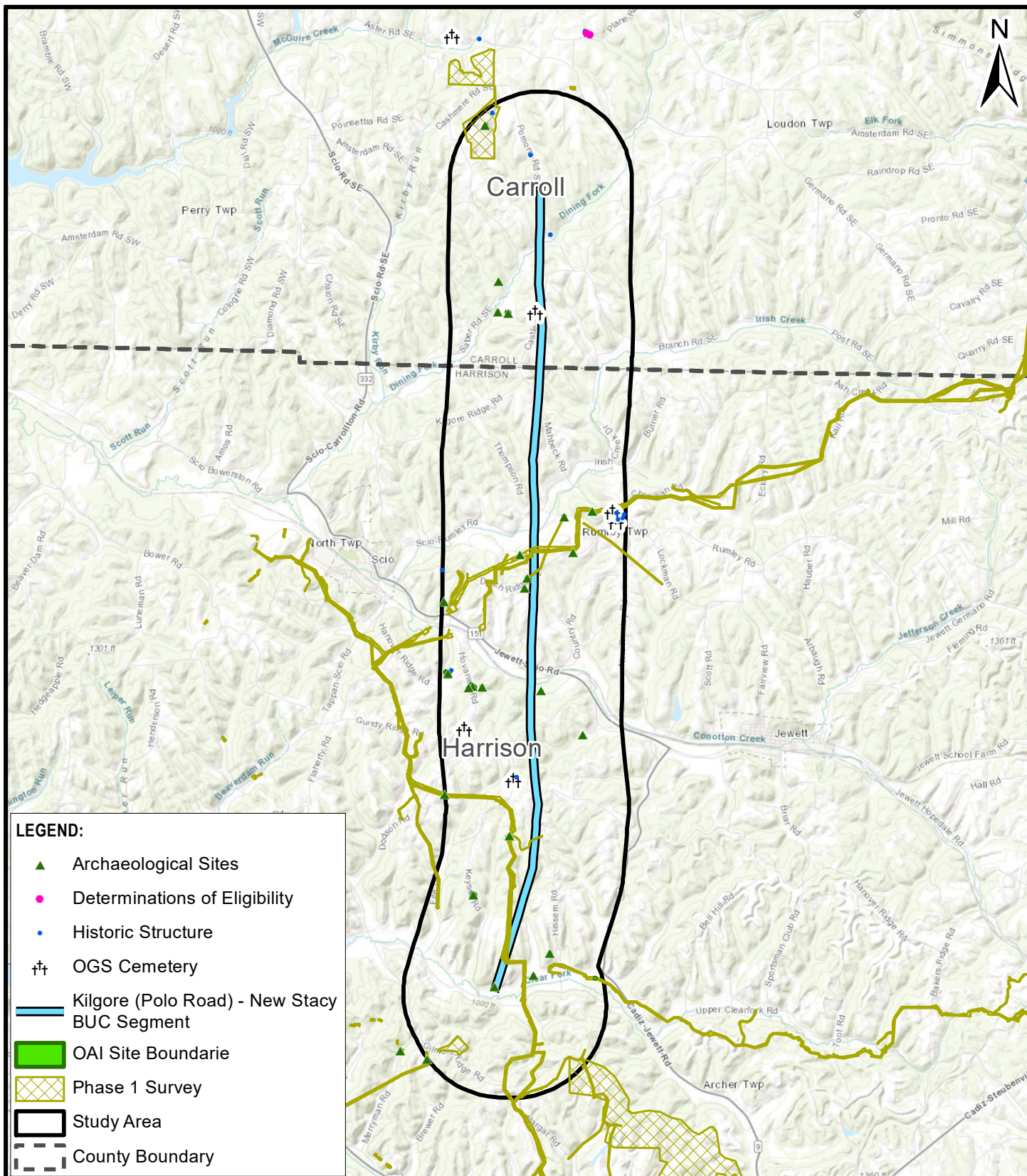
**ATSI**  
American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.

Kilgore (Polo Road)-New Stacey BUC  
138 kV Transmission Line Rebuild

138kV SINGLE CIRCUIT  
STEEL POLE, TAP

EXHIBIT 11







In reply refer to:  
2020-MLT-49294

September 16, 2020

Amy C. Favret, M.A., RPA  
Jacobs  
2 Crowne Point Court, Suite 100  
Cincinnati, Ohio 45241

RE: Section 106 Review-Holloway-Knox 138kV Transmission Line Rebuild Project, Belmont, Carroll, Columbiana, and Harrison Counties, Ohio

Dear Ms. Favret:

This letter is in response to the correspondence received on August 17, 2020 regarding the proposed 64-mile long Holloway-Knox 138kV Transmission Rebuild Project in Belmont, Carroll, Columbiana, and Harrison Counties, 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 proposed project will entail replacing the existing H-frame wood poles with direct embedded steel and drilled shaft H-frame wood poles. The new poles will be installed approximately 10-ft. from the existing poles within the 100-ft. wide right-of-way (ROW). All work will be within the existing ROW except for access roads, which will use existing roads, driveways, or farm lanes. Four pull pads, totaling 0.26-acres, will extend outside of the existing ROW.

A literature review report, *Holloway-Knox 138kV Transmission Line Project, Belmont, Carroll, Columbiana, and Harrison Counties, Ohio* was completed for the entire 64-mile rebuild project. A total of two National Register of Historic Places (NRHP)-listed properties, 165 Ohio Historic Inventory (OHI) properties, two NRHP eligible properties, 43 cemeteries, and 224 Ohio Archaeological Inventory (OAI) sites were identified within the 1.0-mile study area. Of these, one cemetery (Bird/Byrd Cemetery-OGS ID 1381) and two OAI sites (33CO257 and 33CO258) were determined to be within the project ROW. Additionally, one historic architecture survey and 11 Phase I archaeological surveys overlap portions of the ROW.

Sites 33CO257 and 33CO258 are low-density prehistoric lithic scatters previously identified during one of the Phase I surveys. Neither of these sites are near existing poles. Site 33CO257 was recommended for further work, but to date, no additional work has been conducted at the site. As a precautionary measure, a 50-ft. buffer using construction fencing will be placed around site 33CO257 during construction. The Bird/Byrd Cemetery is approximately 151-ft. south of the nearest pole and therefore will not be impacted by the project. Since this cemetery is within the ROW, it is recommended that a 50-ft. buffer using construction fencing also be put up around the cemetery during construction as a precautionary measure.

Due to the nature of the project as a rebuild, it is Jacob's recommendation that no further archaeological or architectural investigations are necessary as the visibility of the existing transmission line should not increase. Our office agrees with this recommendation.

Based on the information provided, we agree that the project, as proposed, will have no effect on historic properties. No further coordination is required for this project unless the scope of work changes or archaeological remains are discovered during the course of construction. In such a situation, this office should be contacted as required by 36 CFR § 800.13. If you have any questions, please contact me by e-mail at [sbiehl@ohiohistory.org](mailto:sbiehl@ohiohistory.org) or Joy Williams at [jwilliams@ohiohistory.org](mailto:jwilliams@ohiohistory.org). Thank you for your cooperation.

Sincerely,

A handwritten signature in blue ink that reads "Stephen M. Biehl". The signature is fluid and cursive, with the first name "Stephen" being the most prominent.

Stephen M. Biehl, Project Reviews Coordinator (archaeology)  
Resource Protection and Review  
State Historic Preservation Office

cc: Joy Williams, SHPO

RPR Serial No. 1085225

*"Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs."*





# 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

June 1, 2020

Ben Otto  
 Jacobs  
 400 E. Business Way, Suite 400  
 Cincinnati, Ohio 45241

**Re:** 20-383; Request No. 18-182; Holloway-Knox 138 kV Transmission Line Rebuild Project

**Project:** The proposed project involves replacing existing wood h-frame structures of the 138-kV electric transmission line with a combination of new direct embedded steel and drilled shaft H-frame wood pole structures within the existing and maintained 100-foot wide right-of-way.

**Location:** The proposed project is located in Columbiana, Carroll, Harrison, and Belmont Counties, Ohio.

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

**Natural Heritage Database:** The Natural Heritage Database has the following records at or within a one-mile radius of the project area:

The Natural Heritage Database has data within the project area, given in the attached shapefiles. The review was based on the project area specified in the request and performed using the shapefile provided to us. Records searched date from 1980. This data is provided to inform you of features present within the project area. Additional comments on some of the features may be found in pertinent sections below.

Records included in the data layer may be for rare plants and animals, geologic features, high quality plant communities, and other ecological features. Fields included are scientific and common names, state and federal statuses (when applicable), date of most recent observation, and whether the record is located within a managed area or conservation site.

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

endangered, FT = federal threatened, FSC = federal species of concern, and FC = federal candidate species.

There are a few species considered as sensitive for which we do not give out an exact location. They are not within the data layer but are included in the sensitive species data layer which shows a general location.

The managed areas layer shows boundaries for state, federal, county, non-profit, private and sites under other types of ownership that are protected and managed for their natural resources. Please be aware that this layer may not be complete, and we are continually updating it as additional information becomes available to us.

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 threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel. The DOW understands that there is no in-water work proposed for this project. Therefore, this project is not likely to impact this or other mussel species.

The project is within the range of the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, and the channel darter (*Percina copelandi*), a state threatened fish. The DOW understands that there is no in-water work proposed for this project. Therefore, this project is not likely to impact these or other aquatic 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 within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 15 to July 31. If this type of habitat will not be impacted, 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.

The project is within the range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the least bittern (*Ixobrychus exilis*), a state threatened bird. This secretive marsh species prefers dense emergent wetlands with thick stands of cattails, sedges, sawgrass or other semiaquatic vegetation interspersed with woody vegetation and open water. If this type of habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of May 1 to July 31. If this type of 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](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](mailto:Sarah.Tebbe@dnr.state.oh.us) if you have questions about these comments or need additional information.

Mike Pettegrew  
Environmental Services Administrator (Acting)

From: Ohio, FW3 <ohio@fws.gov>  
Sent: Monday, April 13, 2020 12:49 PM  
To: Otto, Ben/CIN <Ben.Otto@jacobs.com>  
Subject: [EXTERNAL] ATSI Holloway-Knox 138 kV Transmission Line Rebuild Project, Columbiana, Carroll, Harrison, and Belmont Counties, Ohio

EXHIBIT 15



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



TAILS 03E15000-2018-TA-0404

Dear Mr. Otto,

We have received your recent correspondence regarding potential impacts to federally listed species in the vicinity of the above referenced project. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. We recommend that proposed activities minimize water quality impacts, including fill in streams and wetlands. Best management practices should be utilized to minimize erosion and sedimentation.

FEDERALLY LISTED, PROPOSED, AND CANDIDATE SPECIES COMMENTS: Due to the project type, size, location, and the proposed implementation of seasonal tree cutting (clearing of trees  $\geq 3$  inches diameter at breast height between October 1 and March 31) to avoid impacts to the federally listed endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*), we do not anticipate adverse effects to any federally endangered, threatened, proposed or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the U.S. Fish and Wildlife Service (Service) should be initiated to assess any potential impacts.

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

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.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact Mike

Pettegrew, Acting Environmental Services Administrator, at (614) 265-6387 or at [mike.pettegrew@dnr.state.oh.us](mailto:mike.pettegrew@dnr.state.oh.us).

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

Sincerely,

Patrice Ashfield

Ohio Field Office Supervisor

# **Wetland and Waterbody Delineation Report**

**Polo Road-Buckeye Power 138 kV Transmission Line  
Rebuild Project**

**Harrison and Carroll Counties, Ohio**

Prepared for



May 2020

## **Jacobs**

Jacobs Engineering Group, Inc.  
2 Crowne Point Court, Suite 100  
Cincinnati, OH, 45241



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# Acronyms and Abbreviations

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ATSI	American Transmission Systems Inc.
CWA	Clean Water Act
ESC	Environmental Survey Corridor
°F	Fahrenheit
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
HUC	Hydrologic Unit Code
Jacobs	Jacobs Engineering Group, Inc.
kV	Kilovolt
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OBL	Obligate wetland
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary High-Water Mark
ORAM	Ohio Rapid Assessment Method
PEM	Palustrine emergent
PFO	Palustrine forested
Project	Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project
PSS	Palustrine scrub-shrub
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
TNW	Traditionally navigable water
UPL	Upland
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

# 1 Introduction

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This wetland and waterbody delineation report (Report) summarizes the results of the wetland and waterbody delineation surveys conducted in Carroll and Harrison Counties, Ohio by Jacobs Engineering Group, Inc. (Jacobs), for American Transmission Systems Inc. (ATSI), a subsidiary of FirstEnergy Corporation (FirstEnergy). ATSI is proposing to replace existing wooden h-frame structures with new direct embedded steel and drilled shaft H-frame wood pole structures as part of the Polo Road-Buckeye Power 138 kilovolt (kV) Transmission Line Rebuild Project (Project). The Project (approximately 8.9 miles long) is the middle section of a larger 64-mile project originating at the Knox Substation in Columbiana County, near the intersection of Township Line Road and Knox School Road, north of the City of Chambersburg, and extending south to the Holloway Substation terminus in Belmont County, southeast of the City of St. Clairsville. The larger 64-mile project is broken down into five phases, of which the Project is Phase 3.

The Project starts in Carroll County, near the intersection of Pomona Road and Amsterdam Road SE, and extends south to Harrison County, near the intersection of Keyser Road and Lower Clearfork Road, as shown on Overview Figure (Figure 1). Jacobs conducted environmental surveys in May through October 2018. The environmental survey corridor (ESC) included the existing 100-foot right-of-way (ROW), potential access routes, and pull pads.

This wetland and waterbody delineation report contains the following components:

- Figure 1 provides an overview map of the ESC overlain on ArcGIS Online USA topographic maps.
- Figures 2-A to 2-AH show U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) mapped soil units, the location of National Wetland Inventory (NWI) polygons, national hydrography dataset (NHD) streams, and Federal Emergency Management Agency (FEMA) 100-year floodplain and floodway information. Table 3-1 lists the soils types identified within the ESC and Table 3-2 list the NWI wetland types identified within the ESC.
- Figures 3-A to 3-AH provide the location of all features mapped during the delineation by Jacobs biologists within the ESC. This includes all wetlands, data points, waterbodies, and ponds. Tables 4-1 (wetlands), 4-2 (streams), 4-3 (ponds) follow the text, and provide detailed information for all delineated features within the ESC. Tables 4-4 (wetlands), 4-5 (streams), and 4-6 (ponds) within the text, provide summary information for all delineated features within the ESC.
- U.S. Army Corps of Engineers (USACE) wetland determination field data forms are in Appendix A.
- Ohio Rapid Assessment Method for Wetlands (ORAM) two-page forms are in Appendix B.
- Primary Headwater Habitat Evaluation Index (HHEI) stream data forms for each stream identified with a drainage area less than 1 square mile are in Appendix C.
- Qualitative Habitat Evaluation Index (QHEI) stream data forms for each stream identified with a drainage area of 1 square mile or greater are in Appendix D.
- Jacobs Open Water/Pond data forms for each open water feature identified within the ESC are in Appendix E.
- Representative photographs for all delineated features within the ESC are in Appendix F.

## 2 Background Information

This section describes the ESC and methodology used during the wetland and waterbody delineation field surveys.

### 2.1 Project Area

The Project is in Harrison and Carroll Counties, Ohio. The ESC begins at the terminus of Phase 2, just north of the intersection of Pomona Road and Amsterdam Road SE (40.456873 latitude, -81.049261 longitude), and extends south to the beginning of Phase 4, just north of the intersection of Keyser Road and Lower Clearfork Road (40.328104 latitude, -81.064962 longitude), as shown in Figure 1. The ESC is approximately 8.9 miles long, 100 feet wide within the Project ROW, and contains multiple proposed off-ROW access routes and pull pads.

Review of the USGS 7.5-minute topographic maps indicates the ESC crosses two USGS 7.5-minute topographic quadrangles: Scio and Jewett. Additional review of the USGS 7.5-minute topographic maps of the area indicates that multiple ditches, streams, and rivers drain the ESC, including Dining Fork, Irish Creek, Conotton Creek, Clear Fork, and multiple unnamed tributaries of these waterways. Topographic relief is comprised of a landscape of rolling hills, with elevations ranging between 925 and 1,270 feet above sea level throughout the ESC (Figure 1).

Land use and natural communities observed within the ESC includes agricultural land, existing ROW, existing roadway, industrial/substation, residential, old field, upland scrub shrub, and palustrine emergent (PEM) wetland, in addition to the previously identified waterbodies.

#### 2.1.1 Annual Precipitation

Recent rainfall data for Cambridge, Ohio were reviewed prior to completing the environmental survey to determine if climatic conditions were normal at the time of the survey. Cambridge, Ohio was the nearest weather station with both historical and recent precipitation records. Rainfall recorded in Cambridge, Ohio was above normal for three out of four months prior to and during surveys conducted in May and June (Table 2-1; USDA, 2018). These data suggest climatic conditions were generally wetter than normal for 2018 leading up to the ecological survey. This was taken into consideration during delineation.

**TABLE 2-1: Recent Precipitation Data**

***Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project***

<b>2018 Precipitation Data</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Total</b>
Cambridge Monthly Sum <sup>1,3</sup>	3.60	5.82	3.86	5.18	18.46
Cambridge Normal Precip. <sup>2,3</sup>	2.30-3.50	2.29-3.91	2.88-4.65	2.50-4.87	9.97-16.93
Monthly climatic condition	Above Normal	Above Normal	Normal	Above Normal	Above Normal

<sup>1</sup>Monthly weather summary from weather station CAMBRIDGE, OH (2018)

<sup>2</sup>USDA WETS Station Climate Data 1971-2000 (Cambridge, OH (USDA 2000))

<sup>3</sup>Displayed in inches

### 2.1.2 Drainage Basins

The ESC is within the Tuscarawas (05040001) 8-digit Hydrologic Unit Code (HUC). The ESC crosses four 12-digit HUCs, as outlined in Table 2-2 (USGS, 2018):

**TABLE 2-2: 12-Digit HUCs Crossed by the Project**

***Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project***

HUC 12-Digit Code	HUC 12-Digit Name
05040001-07-03	Dining Fork
05040001-07-02	Irish Creek
05040001-07-04	Headwaters Middle Conotton Creek
05040001-15-01	Clear Fork

Source: USGS 2018

### 2.1.3 Traditional Navigable Waters

The U.S. Environmental Protection Agency (EPA) and USACE assert jurisdiction over “all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce including all waters which are subject to the ebb and flow of the tide” (USACE and EPA, 2008). These waters are considered traditionally navigable waters (TNW). The ESC does not directly cross a TNW, yet many of the streams will be considered tributaries to the Tuscarawas River (USACE, 2009).

## 3 Wetland and Waterbody Delineation

### 3.1 Desktop Review

Prior to conducting the field investigations, Jacobs reviewed the following resources to identify the potential for wetlands within the ESC:

- Aerial photo-based maps (ArcGIS Online, World Imagery Map, 2020)
- Topographic maps (ArcGIS Online, USA Topo Maps, 2020)
- NRCS Web Soil Survey (NRCS, 2020)
- NWI shapefile (USFWS, 2020)
- National Hydrography Dataset (NHD) (USGS, 2020)

According to the NRCS soil survey of Harrison and Carroll Counties (NRCS, 2018), 30 soil map units are crossed by the ESC. Of the 30 soil map units, zero are listed as hydric, one predominantly hydric, four predominantly non-hydric, and the remaining 25 units are listed as not hydric (Figures 2-A to 2-AH).

Generally, hydric soils are those soils that indicate through their color and structure that they have experienced dominantly reducing (i.e. oxygen poor) conditions. Oxygen-poor conditions result from inundation and/or saturation by water. Partially hydric soils have both hydric and non-hydric soil components identified in the mapped soil unit.

NWI data were obtained from the USFWS for review of potential wetlands that may occur within the ESC. The NWI data (USFWS, 2018) identify the type of wetland or open water present at a location using the USFWS classification system (Cowardin et al., 1979). The NWI data indicated that 12 NWI features (approximately 1 acre) are within the ESC (Figure 2-A to 2-AH): two palustrine unconsolidated bottom (PUBGx) features, six riverine streambed class (R4SBC) features, and four riverine unconsolidated bottom (R5UBH) features (USFWS, 2018). The presence of an NWI feature is not a definitive indicator that a wetland or waterbody is present. The information on NWI maps is obtained largely from aerial interpretation, may be outdated, and is only sporadically field-checked. Additional detail regarding the mapped NWI wetlands within the ESC is provided in Table 3-2.

**TABLE 3-2: Mapped National Wetland Inventory Features**

*Polo Road - Buckeye Power 138 kV Transmission Line Rebuild Project*

Wetland Type <sup>1</sup>	Mapped NWI Features	Acreage within ESC
PUBGx	2	0.08
R4SBC	6	0.63
R5UBH	4	0.36
<b>Overall Total</b>	<b>12</b>	<b>1.07</b>

<sup>1</sup>Cowardin et al. 1979.

As shown on the FEMA floodplain panels (Figures 2-A to 2-AH), the ESC crosses the FEMA-mapped 100-year floodplains of three streams (FEMA, 2018):

- Dining Fork (Stream PB-03)
- Irish Creek (Stream PB-12)
- Conotton Creek (Stream PB-16).

## 3.2 Field Survey Methodology

In May through October 2018, Jacobs biologists surveyed the ESC by walking the corridor and evaluating for wetlands and other waters of the U.S. The boundaries of each wetland and waterbody within the ESC were delineated and recorded using handheld global positioning system (GPS) units. For waterbodies identified within the Project area, the ordinary high-water mark (OHWM) was used as the jurisdictional boundary.

Wetland, stream, and pond data were recorded on USACE Regional Supplement wetland determination data forms, Headwater Habitat Evaluation Index (HHEI) forms and Qualitative Habitat Evaluation Index (QHEI) forms, and Jacobs standard open water/pond data forms, respectively. All other land use, habitat, and other supplemental data were collected in a field notebook during the environmental survey.

### 3.2.1 Wetland Delineation

Wetland boundaries were field-delineated according to Section 404 of the Clean Water Act (CWA) and the routine onsite methodology described in the Technical Report Y-87-1 *Corps of Engineers' Wetlands Delineation Manual* and subsequent guidance documents (USACE, 1987) and according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)* (USACE, 2012). Wetland delineation data were recorded on the USACE Regional Supplement wetland determination data forms. Representative wetland and upland data points were recorded during the wetland delineation to determine the presence/absence of wetlands and/or document upland conditions within the Project area. Upland data points were determined not to be within wetlands because they did not have positive indicators of one or more of the three wetland criteria: hydrophytic vegetation, wetland hydrology, and hydric soils.

#### 3.2.1.1 Soils

Jacobs biologists examined soils using a hand auger to extract soil cores, which were examined for hydric soil characteristics. A *Munsell Soil Color Chart* (Kollmorgen Corporation, 1988) was used to identify the hue, value, and chroma of the matrix and mottles of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (USACE, 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered hydric soils.

#### 3.2.1.2 Hydrology

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

The soils and ground surface were examined by Jacobs biologists for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the *1987 Manual* and the *Regional Supplement*. Evidence indicating wetland hydrology typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as, drainage patterns, geomorphic position, micro-topographic relief, and a positive Facultative (FAC)-neutral test (USACE, 2011).



### 3.2.1.3 Vegetation

Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the 2016 National List of Plant Species that Occur in Wetlands: Region 1 (Region 1 encompasses the state of Ohio). An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation.

Wetland quality was evaluated using the Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001). Categorization was conducted in accordance with the latest quantitative score calibration (OEPA, 2000). Wetlands are scored based on hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under ORAM v5.0 resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into Category 1, 30 to 59.9 are Category 2 and 60 to 100 are Category 3. Transitional zones exist between Categories 1 and 2 from 30 to 34.9 and between Categories 2 and 3 from 60 to 64.9. However, according to the OEPA, if the wetland score falls into a transitional zone, it must be given the higher Category unless scientific data can prove it should be in a lower category (Mack, 2001).

According to recent guidance from the USEPA and USACE, wetlands that are adjacent to or have a significant nexus to TNWs are regulated under Sections 401 and 404 of the CWA (USEPA and USACE, 2008). A significant nexus must meet criteria that indicate the wetland provides biological, physical, or chemical benefits to the TNW. A significant nexus includes consideration of both hydrologic and ecologic factors. All the streams in the ESC are tributaries to the Tuscarawas River.

### 3.2.2 Stream Assessment

Jurisdictional streams were identified as those waters that possessed a continuously defined bed and bank, OHWM indicators, and lacked a dominance of upland vegetation in the channel. Per USACE guidance, the OHWM is defined as the “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). Channels that parallel a roadway or railroad were identified as upland drainage features and were not considered to be jurisdictional unless they had an identifiable OHWM, were identified on the USGS topographic map, or represented a presumed relocation of a natural channel.

During the field survey, functional 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* (OEPA, 2006) and in the OEPA’s Field Evaluation Manual for Ohio’s Primary Headwater Habitat Streams (OEPA, 2002). The Qualitative Habitat Evaluation Index (QHEI), is used to characterize larger streams (drainage areas greater than 1 square mile), while the Primary Headwater Habitat Evaluation Index (HHEI) is appropriate for first-order and second-order headwater streams (drainage areas less than 1 square mile).

## 4 Field Survey Results

Jacobs biologists surveyed the ESC in May through October 2018 by walking the 100-foot wide ESC and evaluating for wetlands and other waters of the U.S. A total of 25 wetlands, 34 streams, and two ponds were delineated within the Project ESC (Figures 3-A to 3-AH). The features identified within the Project ESC are displayed and identified on the Wetlands and Waterbodies Delineation Map (Figures 3-A to 3-AH). Detailed information for wetland and waterbody features within the Project ESC is provided in Tables 4-1 (wetlands), 4-2 (streams), and 4-3 (ponds).

### 4.1 Wetlands

Twenty-five wetlands totaling 2.19 acres, ranging in size from 0.01 to 0.53 acres, were delineated within the ESC and are depicted in Figure 3-A to 3-AH. All 25 wetlands were identified as PEM wetlands. No palustrine scrub-shrub (PSS) or palustrine forested (PFO) wetlands were observed within the ESC.

Detailed information for each delineated wetland within the Project ESC is provided in Table 4-1 (follows text) and a summary of the delineated wetlands is provided in Table 4-4. The reported wetland acreage only corresponds to areas delineated within the ESC as some wetlands extended beyond the survey boundary. Completed USACE wetland and upland determination forms are provided in Appendix A. Representative photographs were taken of each wetland during the field survey and are provided in Appendix F.

**TABLE 4-4: Wetland Summary Table**

*Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project*

Wetland Type	ORAM Category			Number of Wetlands	Acreage within ESC
	Category 1	Category 2	Category 3		
PEM	18	7	0	25	2.19
<b>Totals</b>	<b>18</b>	<b>7</b>	<b>0</b>	<b>25</b>	<b>2.19</b>

#### 4.1.1 Wetland ORAM Results

A total of 18 Category 1 wetlands and seven Category 2 wetlands were identified within the ESC. No Category 3 wetlands were identified within the ESC. Table 4-4 provides additional summary information regarding wetlands identified within the ESC. Completed ORAM forms are included in Appendix B.

The 18 Category 1 wetlands were classified based on the ORAM scores ranging from 20 to 29.5. Generally, these wetlands scored low due to a variety of factors such as small size, intensity of surrounding land use, narrow buffer areas, disturbance to soils and hydrology, the lack of second growth vegetation, and the presence of invasive species.

The seven Category 2 wetlands were classified based on the ORAM scores ranging from 30 to 33.5. Generally, the Category 2 wetlands exhibited medium upland buffers, very low to moderately high intensive surrounding land use (e.g. second growth forest, residential, fenced pasture), sparse to moderate percentage of invasive species, and had habitat and hydrology generally recovered or recovering from previous manipulation due to clearcutting, shrub/sapling removal, and other disturbances, or with no disturbance at all.

No high-quality Category 3 wetlands were identified within the ESC.

### 4.2 Streams

A total of 34 streams, totaling 6,198 linear feet, were identified within the ESC as shown in Figures 3-A to 3-AH. Of these, 17 streams were identified as ephemeral, 13 were intermittent, and four were perennial. Three streams were assessed using the QHEI methodology (drainage area greater than 1 mi<sup>2</sup>) and 31 streams were assessed using the HHEI methodology (drainage area less than 1 mi<sup>2</sup>). Completed QHEI and HHEI forms are

provided in Appendix C and D, respectively. Representative photographs were taken of each stream during the field survey and are provided in Appendix F.

### 4.2.1 QHEI Results

Three streams, totaling 706 linear feet, within the ESC were evaluated using the QHEI methodology. All three stream habitats assessed were classified as Fair Warmwater streams. Table 4-5 provides QHEI summary results for streams identified within the ESC, and detailed information can be found in Table 4-2. Completed QHEI forms are included in Appendix C.

**TABLE 4-5: QHEI Stream Summary Table**

*Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project*

Flow Regime	QHEI Narrative Category					Number of Streams	Length (feet) within ESA
	Very Poor Warmwater	Poor Warmwater	Fair Warmwater	Good Warmwater	Excellent Warmwater		
Perennial	0	0	3	0	0	3	706
<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>706</b>

### 4.2.2 HHEI Results

Thirty-one headwater streams totaling 5,492 linear feet within the ESC were evaluated using the HHEI methodology. These streams were classified as ten Ephemeral Aquatic Streams, eight Modified Ephemeral Aquatic Streams, nine Small Drainage Warmwater Streams, and four Modified Small Drainage Warmwater Streams. Table 4-6 provides a summary of the HHEI results for streams identified within the ESC, and detailed information can be found in Table 4-2. Completed HHEI forms are provided in Appendix D. Representative photographs of the streams were taken during the field survey and are provided in Appendix F.

**TABLE 4-6: HHEI Stream Summary Table**

*Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project*

Flow Regime	HHEI Class						Number of Streams	Length (feet) within ESA
	Rheocrene	Ephemeral Aquatic	Modified Ephemeral Aquatic	Small Drainage Warmwater	Modified Small Drainage Warmwater	Spring Water		
Ephemeral	0	8	8	0	1	0	17	2,037
Intermittent	0	2	0	8	3	0	13	3,031
Perennial	0	0	0	1	0	0	1	424
<b>Total</b>	<b>0</b>	<b>10</b>	<b>8</b>	<b>9</b>	<b>4</b>	<b>0</b>	<b>31</b>	<b>5,492</b>

## 4.3 Ponds/Open Water

Two ponds totaling 0.07 acres were identified within the ESC and can be found on Figures 3-A to 3-AH. Detailed information for each delineated pond within the ESC is provided in Table 4-3. More detailed information on pond conditions can be found in Appendix E. Representative photographs of ponds can be found in Appendix F.

## 5 Conclusion

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Jacobs conducted an environmental survey of the Polo Road-Buckeye Power 138 kV Transmission Line Rebuild Project in May through October 2018. A total of 25 wetlands, 34 streams, and two ponds were delineated within the Project ESC. The 25 wetlands totaling 2.19 acres within the ESC were all categorized as PEM. Of the 25 wetlands, 18 wetlands were identified as Category 1 wetlands and seven wetlands were identified as Category 2 wetlands. No Category 3 wetlands were identified within the ESC.

Thirty-four streams totaling 6,198 linear feet were identified within the Project ESC, comprising 17 ephemeral streams, 13 intermittent streams, and four perennial streams. Three streams were assessed using the QHEI methodology (drainage area greater than 1 mi<sup>2</sup>) and 31 streams were assessed using the HHEI methodology (drainage area less than 1 mi<sup>2</sup>). Additionally, the two ponds totaled 0.07 acres within the Project ESC.

The jurisdiction of all assessed features will be determined by the USACE based on hydrologic connectivity. Further coordination with the USACE is recommended prior to the submittal of any permit or construction activities.

The results of the environmental resource survey described in this report conducted by Jacobs are limited to the what was identified within the ESC and depicted in Figures 3-A to 3-AH. 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 for construction; therefore, lengths and acreages listed in this report may likely not constitute the actual impacts of the Project at the time of construction. If permits are determined to be necessary, actual impacted lengths and/or acreages will be submitted in subsequent permit applications.

The wetland and waterbodies field survey results presented within this report apply to the site conditions at the time of our assessment. Changes within the environmental survey area that may occur with time due to natural processes or human impacts at the project site or on adjacent properties, could invalidate the findings of this report, especially if Jacobs is unaware and has not had the opportunity to revisit the Project survey area. Additionally, changes in applicable standards and regulations may also occur due to legislation or the expansion of knowledge over time. Therefore, the findings of this wetland and waterbodies delineation report may be invalidated, wholly or in part, by changes that are beyond the control of Jacobs.

## 6 References

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Summary: Application Letter of Notification Application for Kilgore (Polo Road)-New Stacy BUC Segment of Knox-Nottingham 138 kV Transmission Line Project (Part 1) electronically filed by Ms. Devan K. Flahive on behalf of American Transmission Systems Incorporated