

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

**CONSTRUCTION NOTICE**

**EAST SPRINGFIELD-NORTH TITUS 138 KV  
TRANSMISSION LINE TAP TO BENJAMIN SUBSTATION  
PROJECT**

**OPSB CASE NO.: 24-0809-EL-BNR**

**September 30, 2024**

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

**CONSTRUCTION NOTICE  
EAST SPRINGFIELD-NORTH TITUS 138 kV TRANSMISSION LINE TAP  
TO BENJAMIN SUBSTATION PROJECT**

The following information is being provided in accordance with the procedures in the 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 (“OPSB”) as a Construction Notice application.

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

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

Name: East Springfield-North Titus 138 kV Transmission Line Tap to Benjamin Substation (“Project”)

Reference Number: 3215-1

**4906-6-05 (B)(1): Brief Description of Project and Reference Numbers**

American Transmission Systems, Incorporated (“ATSI”), a FirstEnergy company, is proposing to construct a 138 kV transmission line tap from the existing East Springfield-North Titus 138 kV Transmission Line to the new 5C Data Center USA, Inc. (“Customer”) Substation, which will be owned by the Customer and known as the Benjamin Substation. To construct this Project, ATSI will install an approximately 115-foot-long (0.02 mile) 138 kV transmission line tap from a proposed new laminated wood pole 3-way tap structure on the existing East Springfield-North Titus 138 kV Transmission Line to the new Benjamin Substation. As part of the Project, two (2) existing structures will be removed, and four (4) new structures will be installed. One (1) laminated wood pole three-way tap structure and three (3) laminated wood pole switch structures will be installed. Of the three switch structures – two (2) will be installed on the existing East Springfield-North Titus 138 kV Transmission Line and one (1) will be

installed on the proposed tap to Benjamin Substation. The Project is located in the City of Springfield, Clark County, Ohio.

The general location of the proposed Project is shown in Exhibits 1 and 2. Exhibit 1 is a partial copy of a United States Geologic Survey (“USGS”) Topographic Map, Clark County, Ohio Quad Map. Exhibit 2 provides a partial copy of ESRI aerial imagery. The general layout is shown in Exhibit 3.

**4906-6-05 (B)(1): Construction Notice Requirements**

The Project meets the requirements for a Construction Notice application because the Project fits within the types of projects defined by Item (1)(d)(i) of the Application Requirement Matrix for Electric Power Transmission Lines, Appendix A of OAC Rule 4906-1-01. This item states:

*(1) New construction, extension, or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operating at a higher transmission voltage, as follows:*

*(d) Line(s) primarily needed to attract or meet the requirements of a specific customer or customers, as follows:*

*(i) The line is completely on property owned by the specific customer or the applicant.*

This Project meets requirement (1)(d)(i) because the proposed 138 kV transmission line tap is for the Customer and is located completely on their property.

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

The Project is needed to provide two new 138 kV retail delivery points to 5C Data Center USA, Inc. (“Customer”). The Customer requested the proposed delivery points for electric service for a new data center. The proposed load addition is approximately 200

MVA. The Project is not part of a larger project/initiative but is needed to provide the requested new 138 kV retail delivery points.

The proposed Project will consist of two phases. Phase 1, which is the subject of this CN submittal, includes serving up to 100 MVA of load by installing a three-switch tap on the East Springfield–North Titus 138 kV Transmission Line and building 0.02 miles of new 138 kV line to the point of interconnection (POI) with the Customer.

Phase 2, which will be subject of a future OPSB submittal, includes serving the full 200 MVA of load by converting the three-switch tap installed in Phase 1 to a transmission line loop by adding an additional 138 kV circuit, building a new eleven-breaker, breaker-and-a-half 138 kV substation and installing three 30 MVAR capacitor banks. The Project will be designed in accordance with the FirstEnergy (“FE”) “Requirements for Transmission Connected Facilities” document.<sup>1</sup>

The need for the proposed Project was presented at the June 14, 2024, Subregional Regional Transmission Expansion Plan (“RTEP”) Committee – Western meeting (Exhibit 4). The solution for the proposed Project was presented at the July 19, 2024, Subregional RTEP Committee – Western meeting (Exhibit 4). PJM supplement number s3524.1 has been assigned to this Project.

FE and PJM Transmission Planning evaluated the proposed load addition and did not identify any FE or PJM Planning Criteria violations attributable to the load addition. Therefore, no transmission system upgrades are required as a result of the proposed load addition other than the required direct connection facilities necessary to provide electric service to the Customer.

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<sup>1</sup> <https://firstenergycorp.com/content/dam/feconnect/files/wholesale/Requirements-for-Transmission-Connected-Facilities.pdf>

**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 2024 Long-Term Forecast Report (“LTFR”). This map was submitted to the Public Utilities Commission of Ohio (“PUCO”) in Case No. 24-0504-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, including the East Springfield-North Titus 138 kV Transmission Line, and transmission substations.

The general location of the Project area is shown in Exhibits 1 and 2. The Project layout is shown in Exhibit 3. The Project is not included in ATSI’s LTFR filed in 2024 since the line extension contract was not signed in time to include it in this year’s report.

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

No alternatives were considered for this Project as there were no other viable transmission solutions. The East Springfield-North Titus 138 kV Transmission Line offers the most direct and economical solution with the least environmental impacts, for a transmission connection to Benjamin Substation.

**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 Project website and will continue to work with property owners concerning the proposed Project. The website address is below:

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

Finally, during all phases of this Project, ATSI will maintain the transmission projects hotline at 1-888-311-4737 or via email at: [transmissionprojects@firstenergycorp.com](mailto:transmissionprojects@firstenergycorp.com) where the public may ask questions or leave comments on the Project for ATSI.

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

Construction of the line extension is anticipated to begin January 6, 2025, and be completed March 6, 2025.

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

Exhibits 1 and 2 depict the general location of the Project. Exhibit 1 provides a partial copy of the USGS Topographic Map, Clark County, Ohio Quad Map. Exhibit 2 provides a partial copy of ESRI aerial imagery.

**4906-6-05 (B)(8): Properties List**

The Project is located entirely within property (Parcel No. 3300700004000071) owned by the Customer’s holding entity CMH01 HOLDINGS LP. ATSI will obtain a new easement from the Customer for the line extension across their properties. No other properties are involved.

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

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

The equipment and facilities described below are associated with the Project.

Voltage:	138 kV
Conductors:	795 kcmil 26/7 ACSR
Static Wire:	7#8 Alumoweld
Insulators:	Glass
ROW Width:	65 feet
Land Requirements:	New ROW required
Structure Types:	Exhibit 5 – One (1) 138 kV Laminated Wood Pole 3-Way Tap Structure Exhibit 6 – Three (3) 138 kV Laminated Wood Pole Switch Structures

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

There are no occupied residences or institutions within 100 feet from the proposed transmission line centerline and therefore no Electric and Magnetic Field (“EMF”) calculations are required by this subsection.

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

The estimated cost for the proposed Project is \$ 2,608,200. Costs will be allocated between ATSI, Ohio Edison and the Customer.

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

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

The Project is in the City of Springfield, Clark County, Ohio. The Project area is in general manufacturing district zoned land. No significant changes or impacts to the current or future land use are anticipated.

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

Agricultural land does not exist within the Project’s Area of Potential Effect (“APE”).

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

As part of the investigation for this Construction Notice, GAI Consultants requested database information from the Ohio State Historic Preservation Office (SHPO) on July 2, 2024, to identify the presence of previously recorded significant historic properties, including above-ground historic resources and/or archeological sites, mapped within one (1)-mile (mi) of the Project Study Area (Area of Potential Effect or APE). On July 30, 2024, SHPO replied to the request, attached as Exhibit 7. Their records indicated that a small area near the western terminus was previously professionally surveyed for cultural resources in 2006 in relation to a proposed technology park. The survey did not identify any cultural resources within the current APE and there are no known cultural resources located within the remainder of the APE. SHPO stated that no archaeological survey is

recommended. They also stated that the proposed Project will have no effect on historic properties.

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

No additional government agency authorizations or permits are required for this Project.

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

GAI Consultants submitted a request to the Ohio Department of Natural Resources (ODNR) to conduct an Environmental Review of the Project area on July 2, 2024. As part of the Environmental Review, the ODNR Office of Real Estate conducted a search of the ODNR Division of Wildlife's (DOW) 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 July 23, 2024, indicated that the Project is within the range of four listed bat species, two mussel species and two fish species. With respect to the mussel and fish species, ODNR indicated that the Project is not likely to impact these species due to there being no proposed work within a perennial stream. As for the bat species, as described below, no potential hibernaculum were documented. The Natural Heritage Database identified three state potentially threatened plant species and a prairie fen plant community. Field review did not identify suitable habitat for these plant species. A copy of ODNR's response is included as Exhibit 8.

GAI Consultants also submitted a request to the United States Fish and Wildlife Service (USFWS) for an Ecological Review to research the presence of any endangered, threatened, rare, or designated species within one (1) mile of the Project Study Area. A copy of USFWS's response, dated June 26, 2024, is included as Exhibit 9. The response stated that the federally endangered Indiana bat and northern long-eared bat may be present in the vicinity of the Project and recommended removal of trees greater than or equal to three inches in diameter at breast height only occur between October 1 and March 31. No potential hibernaculum for the identified bat species were documented



within the Project study area, therefore impacts to these species are unlikely. Table 1 is a list of endangered, threatened and rare species.

**Table 1. ODNR List of Endangered, Threatened, and Rare Species**

Common Name	Scientific Name	Federal and State Listing Status	Agency Comments
Indiana bat	<i>Myotis sodalis</i>	Federally and State Endangered	Forested habitat is located within the Project area. Seasonal tree clearing between October 1 and March 31 is recommended. No potential hibernaculum for the identified bat species were documented within the Project area therefore impacts to these species are unlikely.
Northern long-eared bat	<i>Myotis septentrionalis</i>	Federally and State Endangered	
Little brown bat	<i>Myotis lucifugus</i>	State Endangered	
Tricolored bat	<i>Perimyotis subflavus</i>	State Endangered	
Rayed bean	<i>Villosa fabalis</i>	Federally and State Endangered	ODNR indicated that the Project is not likely to impact these species due to there being no proposed work within a perennial stream.
Snuffbox	<i>Epioblasma triquetra</i>	Federally and State Endangered	
Iowa darter	<i>Etheostoma exile</i>	State Endangered	
Tonguetied minnow	<i>Exoglossum laurae</i>	State Threatened	
Yellow sedge	<i>Carex flava</i>	State Potentially Threatened	No suitable habitat was identified in the Project study area therefore impacts are not likely.
Prairie rattlesnake-root	<i>Nabalus racemosus</i>	State Potentially Threatened	No suitable habitat was identified in the Project study area therefore impacts are not likely.
Blue-leaved willow	<i>Salix myricoides</i>	State Potentially Threatened	No suitable habitat was identified in the Project study area therefore impacts are not likely.

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

GAI Consultants conducted a wetland and stream delineation of the Project area on June 25, 2024. During the field investigation, a total of one (1) palustrine emergent (PEM) wetland that is 0.17-acres was identified within the Project area and labeled as WHO-KLV-001. No impacts to this wetland are anticipated to result from Project construction activities. No streams were identified within the project area. A copy of the wetland and waterbody delineation results is included in Exhibit 10.

**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 National Electrical Safety Code 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 Construction Notice Application Transmittal and Availability for Public Review**

This Construction Notice application is being provided concurrently to the following public officials from the City of Springfield and Clark County.

**Clark County**

Ms. Melanie Flax Wilt,  
President,  
Clark County Commissioner  
3130 East Main Street  
Springfield, OH 45503

Mr. Lowell McGlothin,  
Vice-President  
Clark County Commissioner  
3130 East Main Street  
Springfield, OH 45503

Ms. Sasha Rittenhouse,  
Clark County Commissioner  
3130 East Main Street  
Springfield, OH 45503

Mr. Johnathan A. Burr, PE, PS.  
Clark County Engineer  
4075 Laybourne Road  
Springfield, OH 45505

Mr. Mark Scholl, Chairperson  
Clark County Planning  
Commission  
3130 East Main Street,  
Springfield, OH 45503

Mr. Chris Simpson,  
District Administrator,  
Clark County Soil & Water  
Conservation District  
3130 East Main Street,  
Springfield, OH 45503

**City of Springfield**

Mr. Rob Rue, Mayor  
City of Springfield  
76 East High Street  
Springfield, OH 45502

Ms. Vaidehe Agwan, Planner  
City of Springfield  
76 East High Street  
Springfield, OH 45502

Mr. Bryan Heck, City Manager  
City of Springfield  
76 East High Street  
Springfield, OH 45502

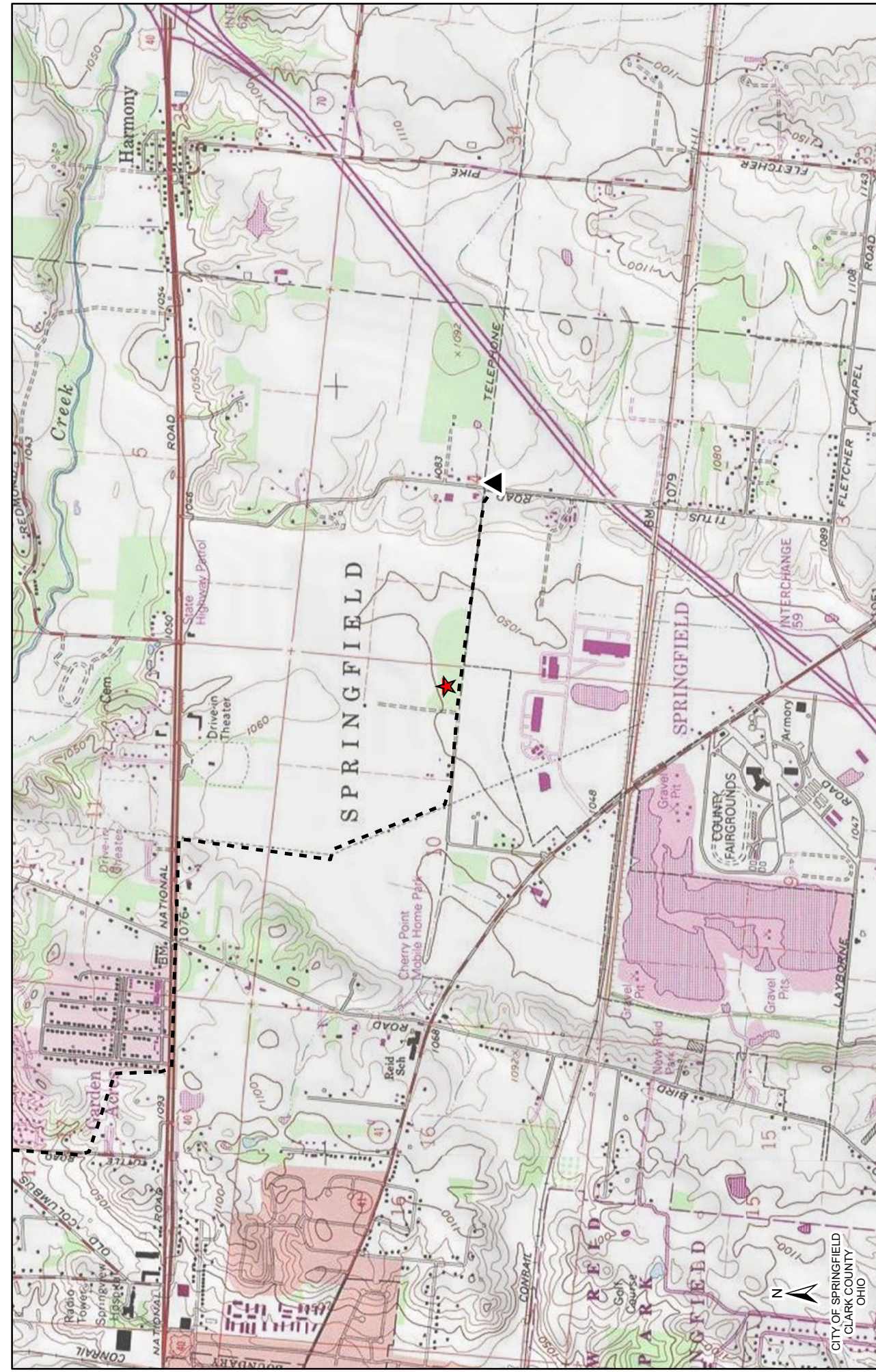
Mr. Adam Lipp, Treasurer  
City of Springfield  
76 East High Street  
Springfield, OH 45502

**Library**

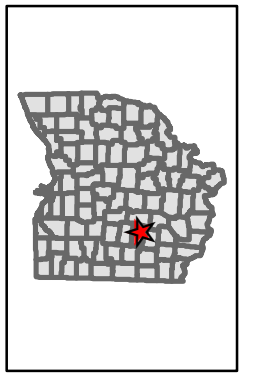
Mr. Bill Martino, Library Director  
Clark County Public Library  
201 South Fountain Avenue  
Springfield, OH 45506

Per OAC Rule 4906-6-07(B), exemplar copies of the notice letters sent to local government officials and to the library have been included with this application as proof of compliance with requirements of OAC Rules 4906-6-07(A)(1) and 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 Construction Notice application. The link to this website is being provided in accordance with OAC Rule 4906-6-07(B), which requires ATSI to provide the OPSB with proof of compliance for in OAC Rule 4906-6-07(A)(3).



**EXHIBIT 1**  
 East Springfield-North Titus 138 kV  
 Transmission Line Tap to  
 Benjamin Substation Project



**Reference:**  
 USGS Topographical Overlay

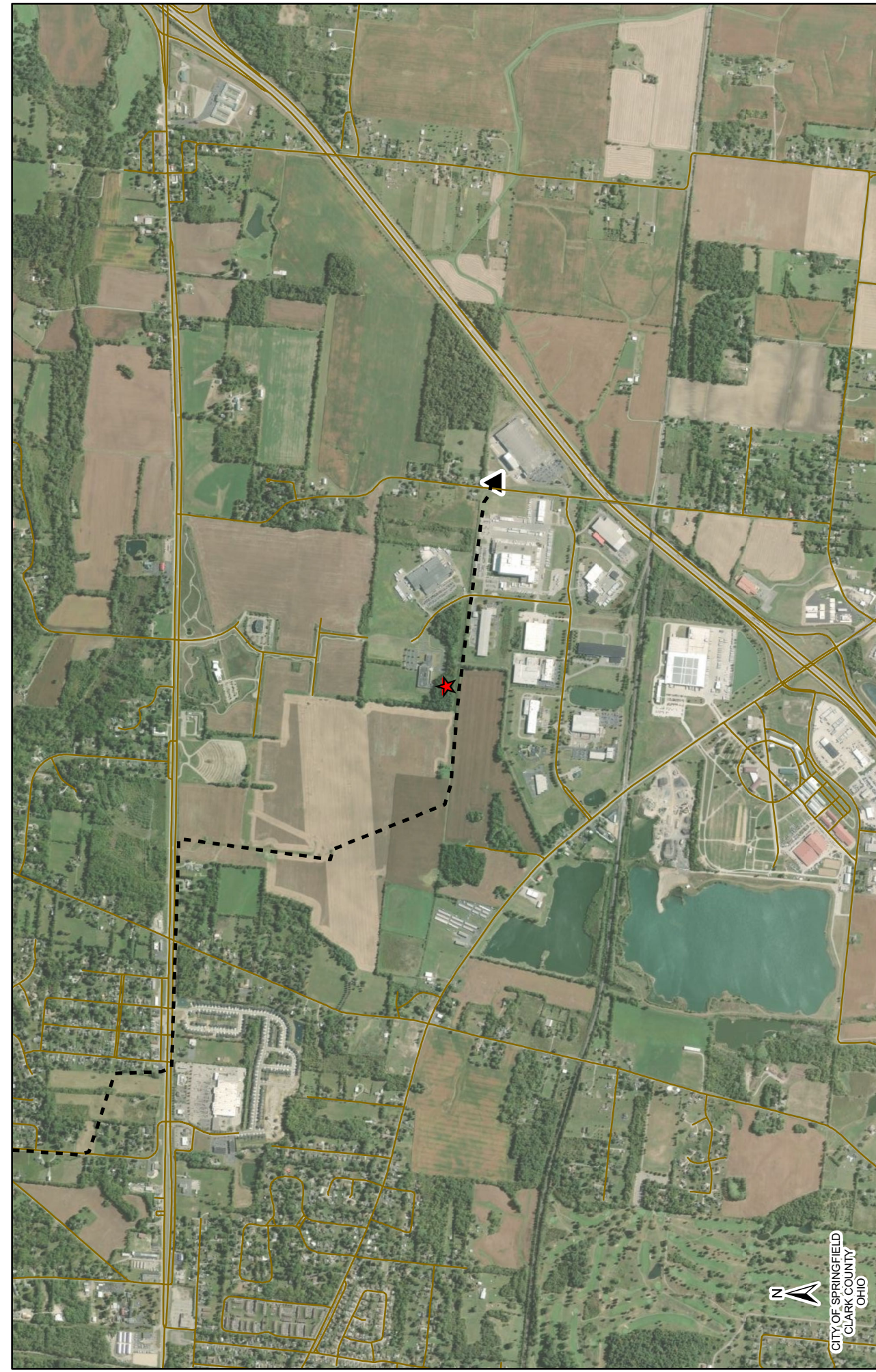
**Coordinate System:**  
 NAD 1983 StatePlane Ohio North FIPS 3401 Feet  
 Projection: Lambert Conformal Conic; Units: Foot US

0 1,000 2,000 4,000  
 Feet

**LEGEND:**

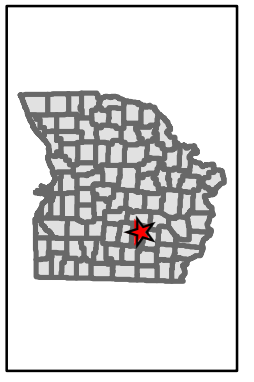
- ★ Project Location
- ▲ Substation
- 138 kV Transmission Line

CITY OF SPRINGFIELD  
 CLARK COUNTY  
 OHIO



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

**EXHIBIT 2**  
 East Springfield-North Titus 138 kV  
 Transmission Line Tap to  
 Benjamin Substation Project

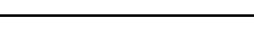


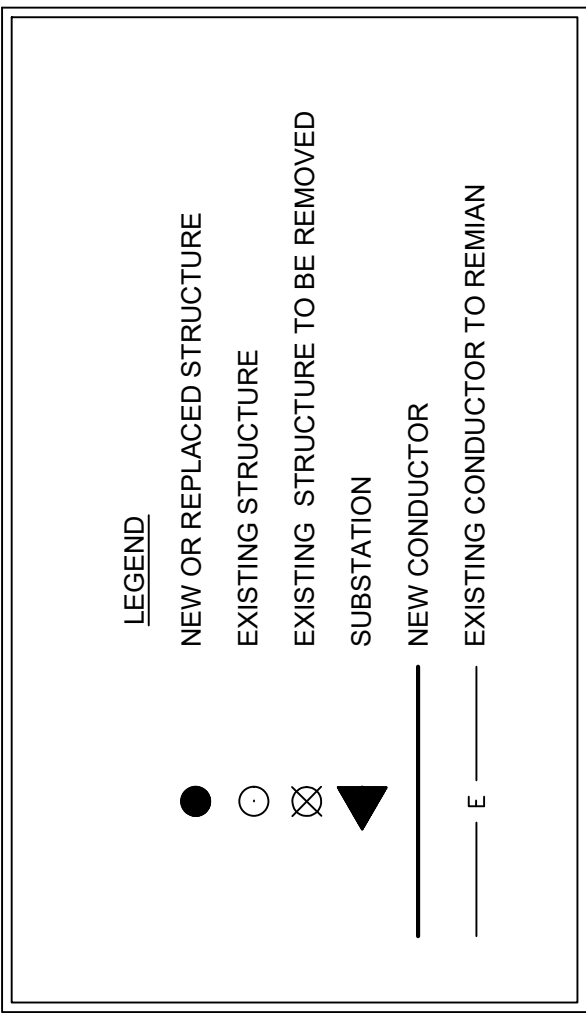
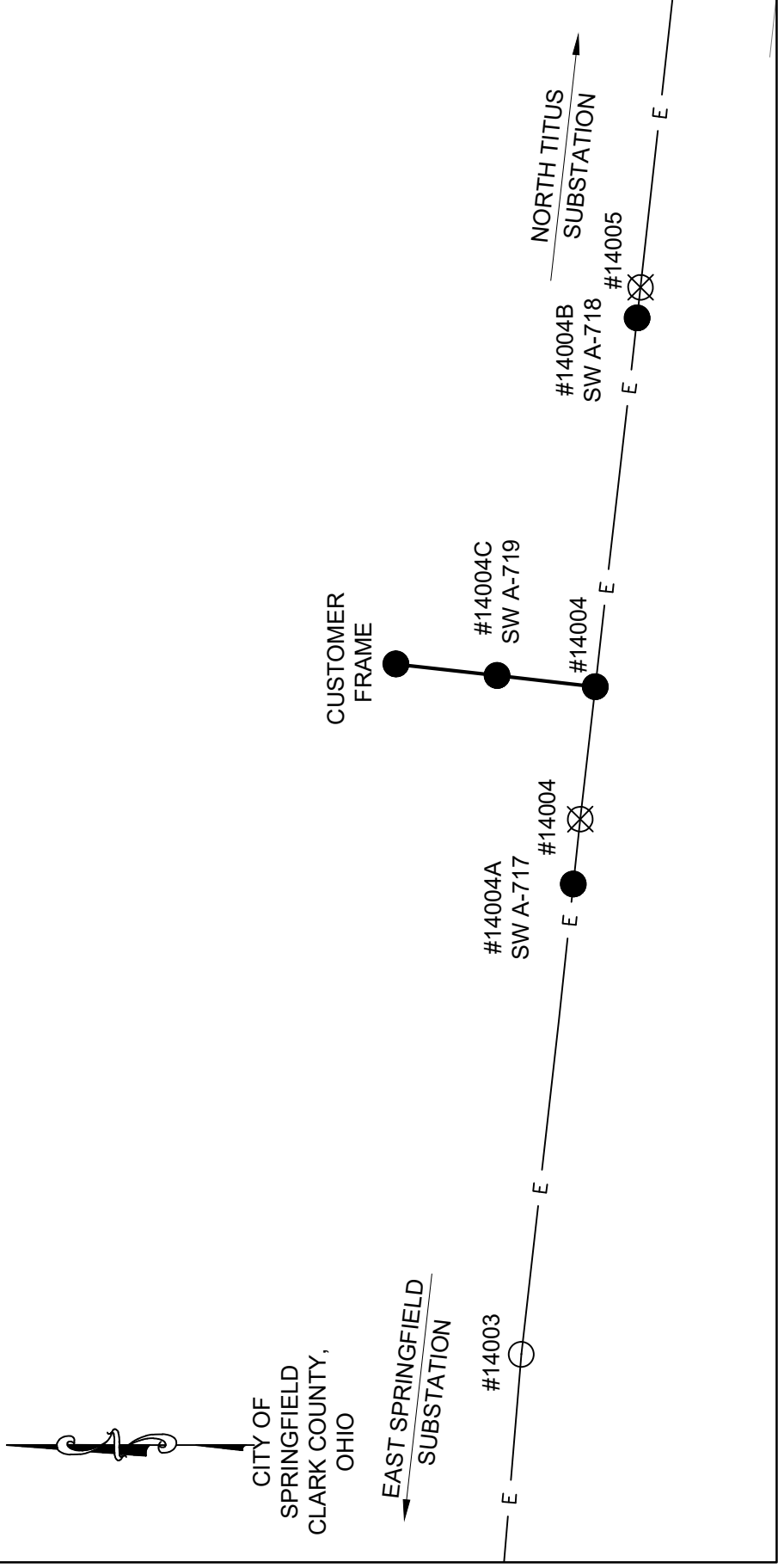
**Reference:**  
 USGS Topographical Overlay

**Coordinate System:**  
 NAD 1983 StatePlane Ohio North FIPS 3401 Feet  
 Projection: Lambert Conformal Conic; Units: Foot US

**LEGEND:**

- Project Location
- 138 kV Transmission Line
- Roads
- Substation





**GENERAL SCOPE OF WORK**

- STRUCTURES 14004A, 14004B, 14004C: INSTALL ONE (1) NEW 138KV SINGLE CIRCUIT LAMINATED WOOD POLE SWITCH DEAD END STRUCTURE. DIRECT EMBED FOUNDATION.
- STRUCTURE 14004: REMOVE EXISTING WOOD STRUCTURE. INSTALL ONE (1) NEW 138KV SINGLE CIRCUIT LAMINATED WOOD POLE 3-WAY TAP STRUCTURE. DIRECT EMBED FOUNDATION.
- STRUCTURE 14005: REMOVE EXISTING WOOD STRUCTURE.
- INSTALL THREE (3) GLASS DEAD END INSULATOR ASSEMBLIES AND ONE (1) DEAD END SHIELD WIRE ASSEMBLY ON THE 138KV CUSTOMER TAKE-OFF FRAME.
- THE THREE (3) SWITCHES TO BE INSTALLED ARE AS FOLLOWS:

STRUCTURE NUMBER	SWITCH NUMBER	MANUFACTURER MODEL	OPERATOR	VOLTAGE/RATING	INTERRUPTION DEVICE
14004A	A-717	CLEAVELAND PRICE ONE-WAY UNIT CB	SCADA MOAB	138KV/2000A	FAST BREAK WHIP
14004B	A-718	CLEAVELAND PRICE ONE-WAY UNIT CB	SCADA MOAB	138KV/1200A	FAST BREAK WHIP
14004C	A-719	CLEAVELAND PRICE ONE-WAY UNIT CB	SCADA MOAB	138KV/1200A	FAST BREAK WHIP

- TRANSFER EXISTING 7#8 ALUMOWELD SHIELD WIRE AND 795 KCMIL 26/7 ASCR CONDUCTOR WIRE TO NEW STRUCTURES 14004, 14004A, AND 14004B.
- NEW 7#8 ALUMOWELD SHIELD AND 795 KCMIL 26/7 ASCR CONDUCTOR WILL BE INSTALLED FROM NEW STRUCTURE 14004 TO 14004C AND FROM 14004C TO THE 138KV CUSTOMER FRAME.
- NO OPGW WILL BE INSTALLED.
- DISTRIBUTION UNDERGROUNDS NEAR NEW STRUCTURE 14004B. UNDERGROUND DISTRIBUTION TO BE STAKED PRIOR TO CONSTRUCTION.

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**Need Number:** ATSI-2024-044

**Process Stage:** Need Meeting – 06/14/2024

**Supplemental Project Driver(s):**  
*Customer Service*

**Specific Assumption Reference(s):**

New customer connection request will be evaluated per FirstEnergy’s “Requirements for Transmission Connected Facilities” document and “Transmission Planning Criteria” document.

**Problem Statement**

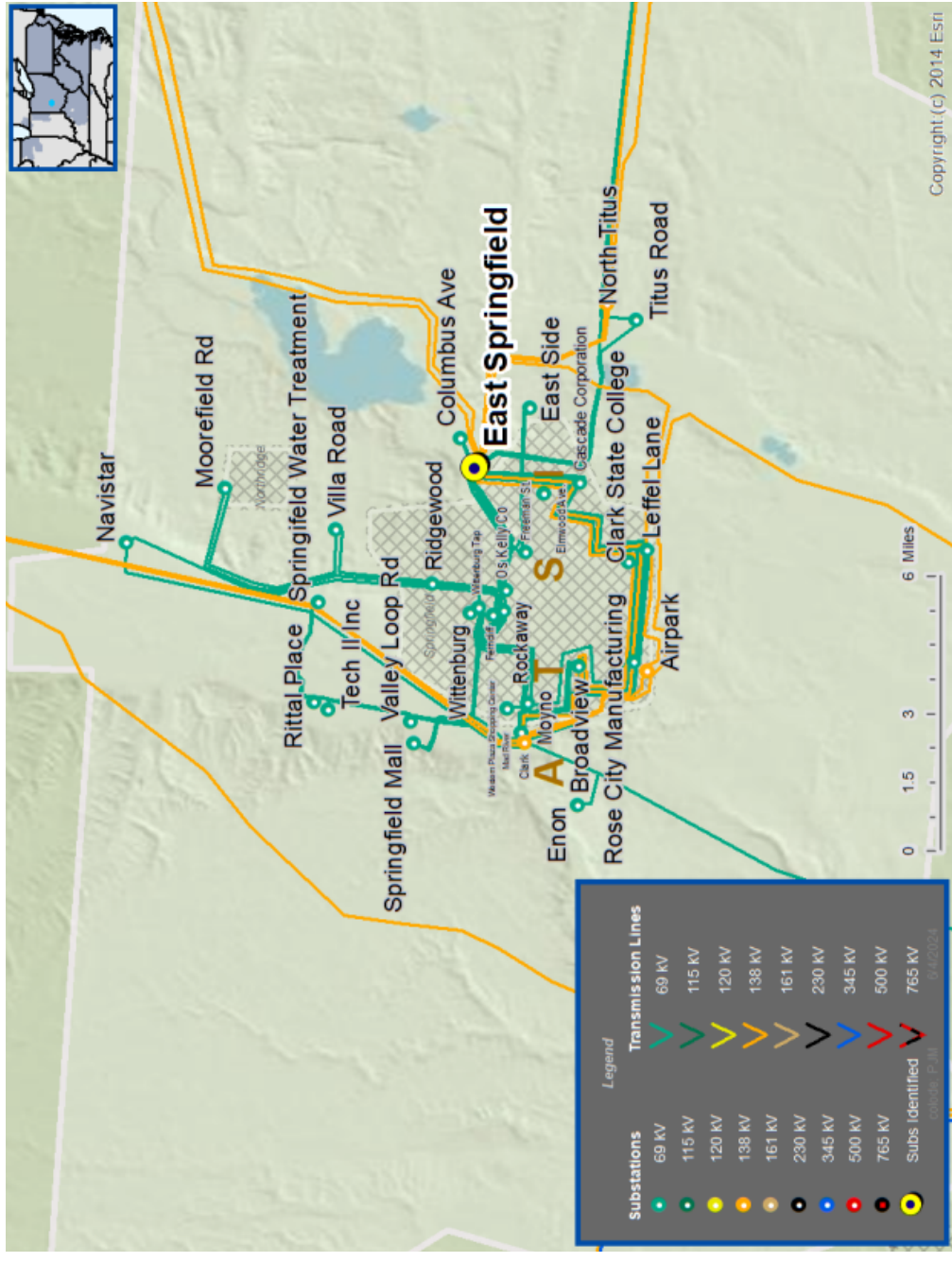
New Customer Connection – A retail customer has requested a new 138 kV delivery point in the East Springfield area. The anticipated load of the new customer connection is 200 MVA.

**Requested In-Service Date:**

September 25, 2026

# EXHIBIT 4

## ATSI Transmission Zone M-3 Process East Springfield 138 kV Customer Connection





# ATSI Transmission Zone M-3 Process East Springfield 138 kV Customer Connection

**Need Number:** ATSI-2024-044

**Process Stage:** Solution Meeting – 07/19/2024

**Previously Presented:** Need Meeting – 06/14/2024

**Supplemental Project Driver(s):**  
*Customer Service*

### Specific Assumption Reference(s):

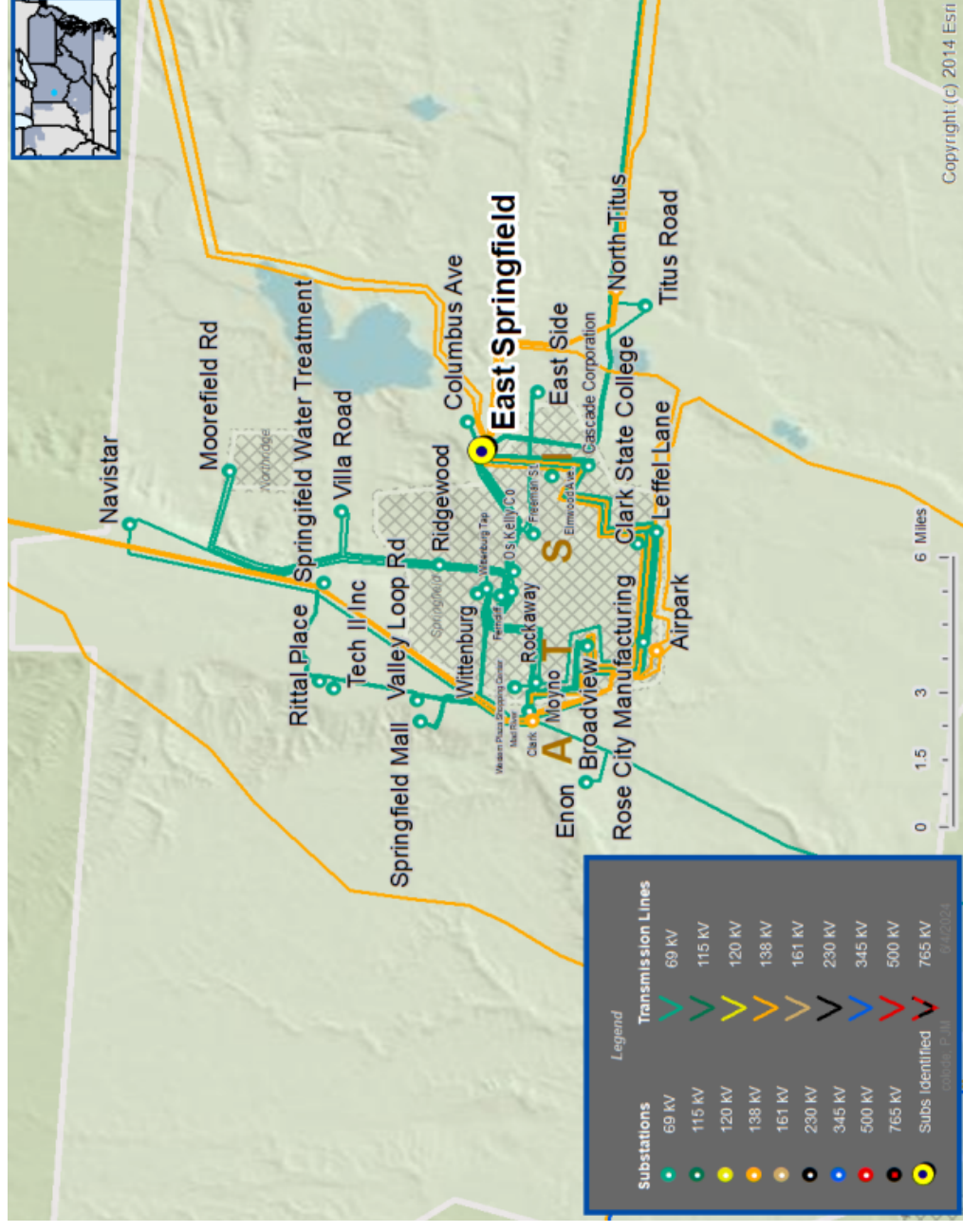
New customer connection request will be evaluated per FirstEnergy’s “Requirements for Transmission Connected Facilities” document and “Transmission Planning Criteria” document.

### Problem Statement

New Customer Connection – A retail customer has requested a new 138 kV delivery point in the East Springfield area. The anticipated load of the new customer connection is 200 MVA.

### Forecasted In-Service Date:

September 25, 2026





**Need Number:** ATSI-2024-044

**Process Stage:** Solution Meeting 07/19/2024

**Proposed Solution:**

**Phase 1: 138 kV Transmission Line Tap**

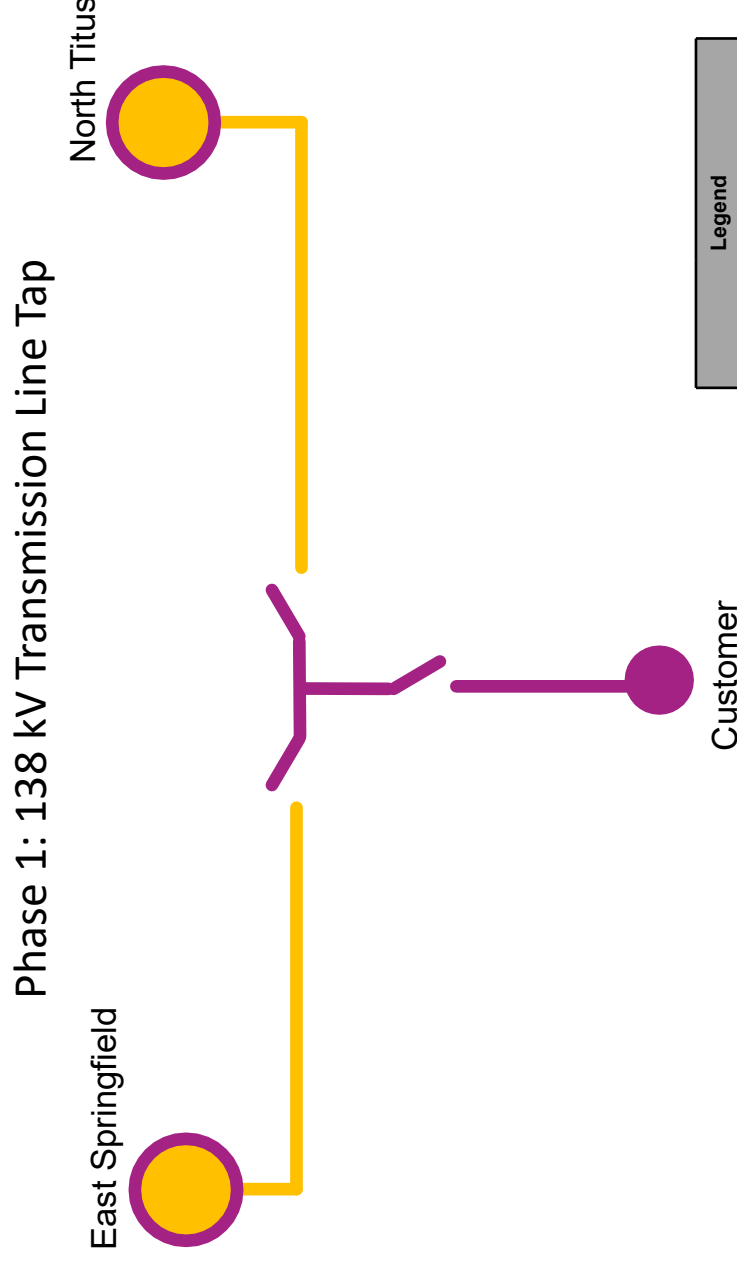
- Install two main-line SCADA controlled switches
- Install one tap-line SCADA controlled switch
- Construct approximately 0.1 miles of 138 kV line extension.
- Adjust relay settings at East Springfield and North Titus substations
- Install revenue metering

**Estimated Project Cost:** \$2.47M

**Projected In-Service:** 3/1/2025

**Status:** Engineering

**Model:** 2023 RTEP model for the 2028 Summer (50/50)



Legend	
500 kV	<span style="color: red;">—</span>
345 kV	<span style="color: blue;">—</span>
138 kV	<span style="color: orange;">—</span>
69 kV	<span style="color: teal;">—</span>
34.5 kV	<span style="color: red;">—</span>
23 kV	<span style="color: green;">—</span>
New	<span style="color: purple;">—</span>

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**Need Number:** ATSI-2024-044

**Process Stage:** Solution Meeting 07/19/2024

**Proposed Solution:**

**Phase 2: 138 kV Switching Station**

- Build a new 11 breaker, breaker and a half, 138 kV substation
- Loop the East Springfield – London 138 kV Line in and out of the new substation
- Remove the tap on the East Springfield – North Titus 138 kV Line and loop the line in and out of the new substation.
- Install three 30 MVAR capacitor banks at the new 138 kV substation.
- Build an additional span of 138 kV line from the new substation to the POI with the customer.
- Install a second set of revenue metering.
- Adjust relay settings at London, North Titus, and East Springfield Substations

**Alternatives:**

- No reasonable alternatives to meet the customer’s request near East Springfield area.

**Estimated Project Cost:** \$23.6M

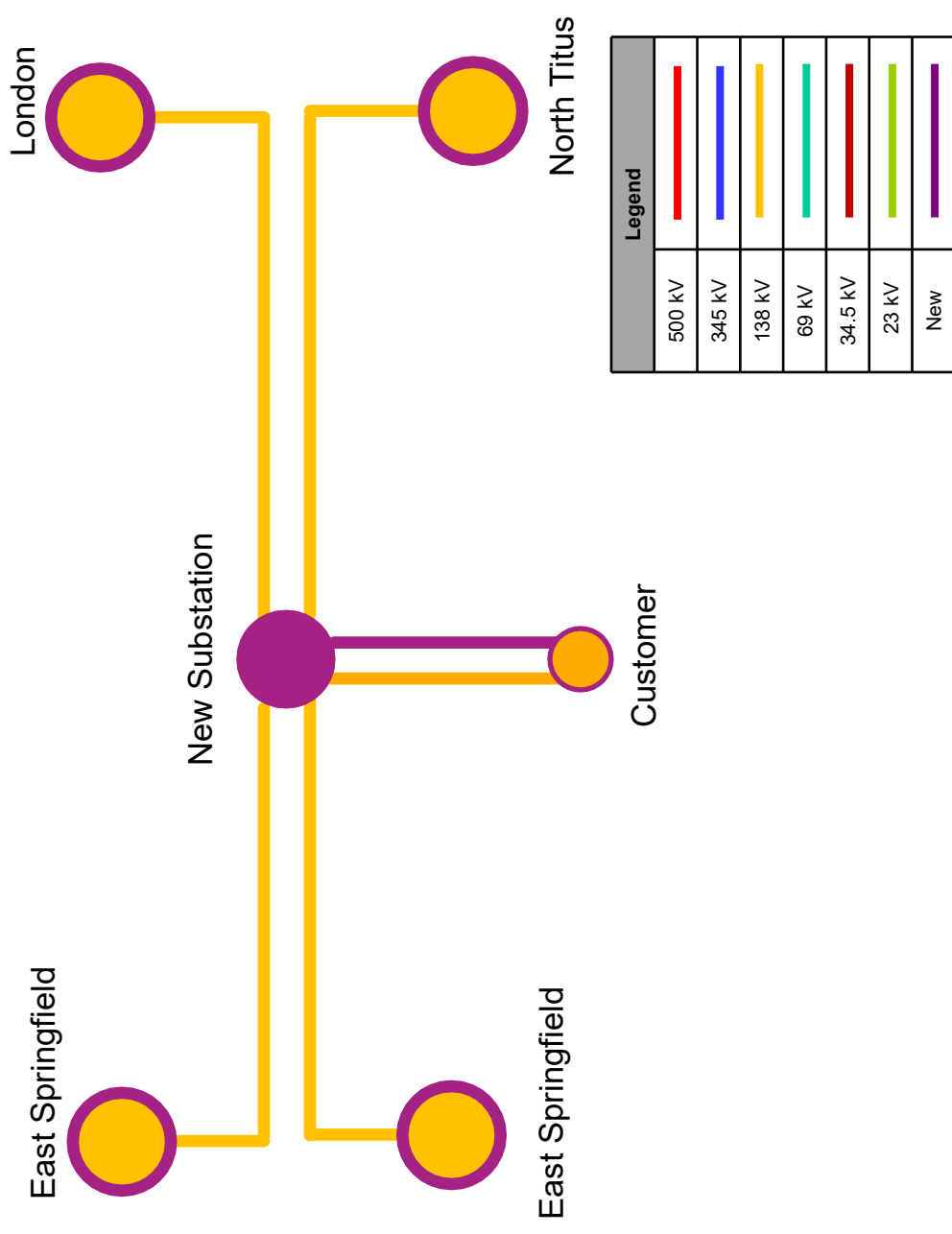
**Projected In-Service:** 11/1/2028

**Status:** Engineering

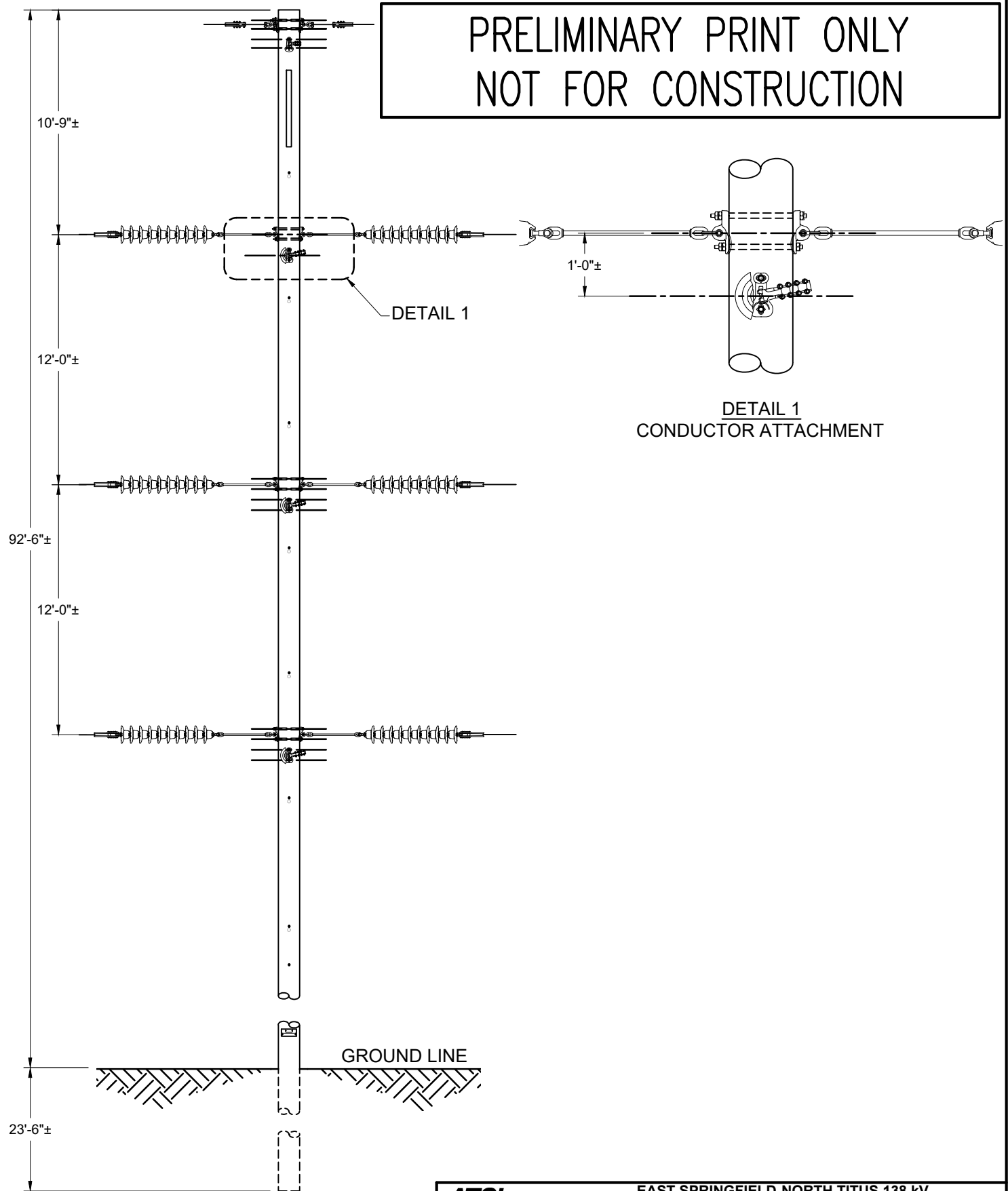
**Model:** 2023 RTEP model for the 2028 Summer (50/50)

**Total Estimated Project Cost:** \$26.07M (Phase 1 and Phase 2)

Phase 2: 138 kV Transmission Switching Station



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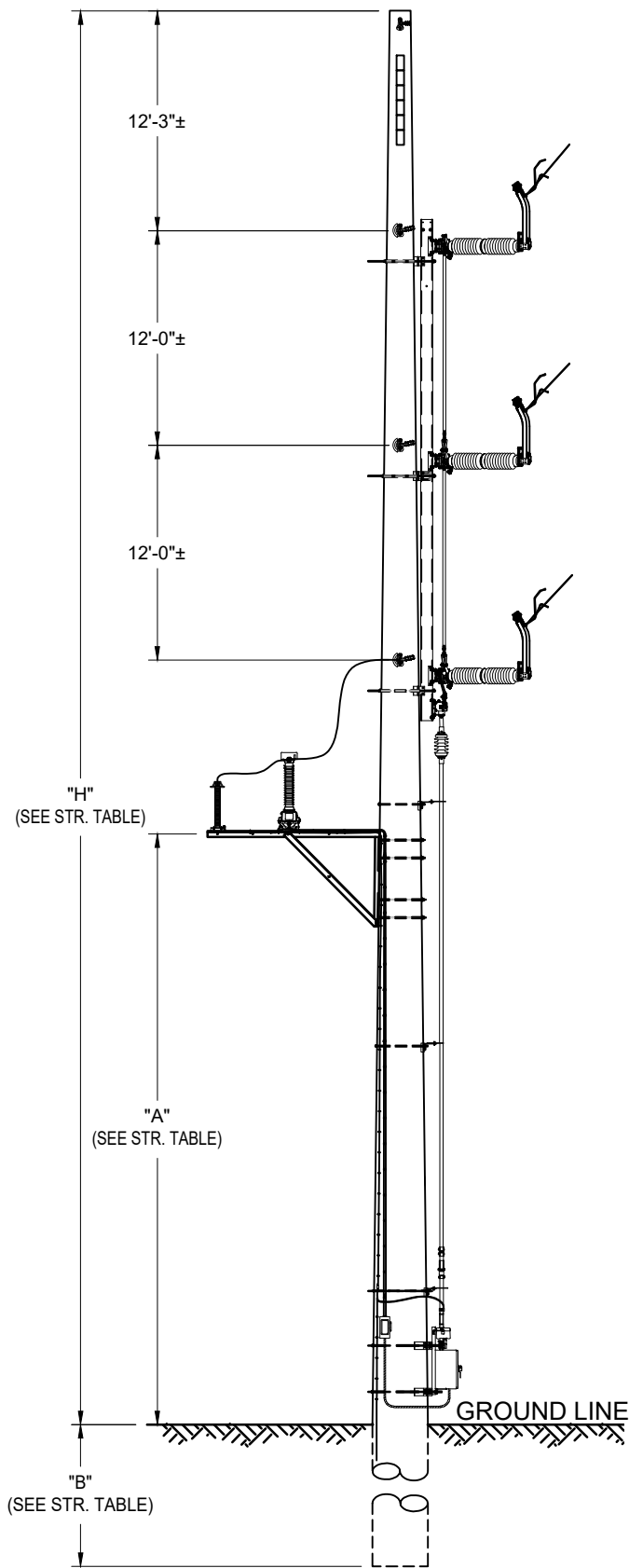


PAPER SIZE: 8.5X11

SCALE: NTS

<b>ATSI</b> <small>American Transmission Systems, Inc. a subsidiary of FirstEnergy Corp.</small>	<b>EAST SPRINGFIELD-NORTH TITUS 138 kV TRANSMISSION LINE TAP TO BENJAMIN SUBSTATION PROJECT</b>
	<b>CUSTOM 138KV SINGLE CIRCUIT LAMINATED WOOD POLE TAP STRUCTURE SINGLE POLE STRUCTURE 14004</b>
<b>EXHIBIT 5</b>	

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STRUCTURE TABLE			
STRUCTURE NUMBER	DIM "H"	DIM "A"	DIM "B"
14004A	83'-6"	32'-6"	21'-0"
14004B	100'-0"	49'-0"	23'-6"
14004C	83'-6"	32'-6"	21'-0"

PAPER SIZE: 8.5X11

SCALE: NTS

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**EAST SPRINGFIELD-NORTH TITUS 138 kV  
TRANSMISSION LINE TAP TO BENJAMIN SUBSTATION  
PROJECT**

CUSTOM 138KV SINGLE CIRCUIT LAMINATED WOOD POLE  
AUTOSECTIONALIZING SWITCH STRUCTURE SINGLE POLE

**EXHIBIT 6**



In reply, refer to  
2024-CLA-61734

July 30, 2024

William J. Caramana  
GAI Consultants, Inc.  
385 East Waterfront Drive  
Homestead, PA 15120  
w.caramana@gaiconsultants.com

**RE: 5C Data Center Project, City of Springfield, Clark County, Ohio**

Dear Mr. Caramana:

This letter is in response to the correspondence received on July 2, 2024, regarding the proposed 5C Data Center Project, City of Springfield, Clark County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board (OPSB) rules for siting this project (OAC 4906-4 & 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 undertaking involves the installation of two mainline line switches within the 100-foot-wide easement for an existing transmission line, as well as the construction of a 150-foot-long tap line that will extend to the site of a proposed data center. The tap line will also have a 100-foot-wide easement. In addition, approximately 1,500 feet of temporary access road will be needed to complete this project. Per the submission, the Area of Potential Effect (APE) is approximately five (5) acres, as shown on Figure 2 (“Project Overview”).

A review of our records indicates that a small portion of the APE, near its western terminus, was previously professionally surveyed for cultural resources in 2006 in relation to a proposed technology park. The previous survey did not identify any cultural resources within the current APE. There are no known cultural resources located within the remainder of the APE; however, it has not been professionally surveyed. Soils within the APE are primarily poorly drained, although small areas are well drained and somewhat poorly drained. A review of modern aerials shows disturbance within the APE in 2018 from the construction of the existing transmission line; therefore, it is unlikely that intact and significant archaeological sites are located within the APE. No archaeological survey is recommended. Nearby buildings are of modern construction and were built after the mid-1980s.

Based on this information, it is our office’s opinion that the project, as proposed, will have no effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional cultural resources are discovered during the implementation of this project. In

2024-CLA-61734  
July 30, 2024  
Page 2

such a situation, this office should be contacted. If you have any questions, please contact me by e-mail at [cgullett@ohiohistory.org](mailto:cgullett@ohiohistory.org). Thank you for your cooperation.

Sincerely,



Catherine Gullett, Project Reviews Coordinator - Archaeology  
Resource Protection and Review  
State Historic Preservation Office

RPR Serial No: 1103847

cc. Suze Pugh-Rose, GAI Consultants, Inc. (via email)



**OHIO HISTORIC PRESERVATION OFFICE:  
RESOURCE PROTECTION AND REVIEW**

**Section 106 Review - Project Summary Form**

**For projects requiring a license from the Federal Communications Commission, please use FCC Forms 620 or 621. DO NOT USE THIS FORM.**

**SECTION 1: GENERAL PROJECT INFORMATION**

All contact information provided must include the name, address and phone number of the person listed. Email addresses should also be included, if available. Please refer to the Instructions or contact an OHPO reviewer (mailto:Section106@ohiohistory.org) if you need help completing this Form. Unless otherwise requested, we will contact the person submitting this Form with questions or comments about this project.

Date: June 28, 2024

Name/Affiliation of person submitting form: William J. Caramana / GAI Consultants, Inc.

Mailing Address: 385 East Waterfront Drive Homestead, PA 15120

Phone/Fax/Email: (412) 399-5258 / w.caramana@gaiconsultants.com

**A. Project Info:**

1. This Form provides information about:

New Project Submittal:

YES

Additional information relating to previously submitted project:

NO

OHPO/RPR Serial Number from previous submission:

2. Project Name (if applicable):

5C Data Center Project

3. Internal tracking or reference number used by Federal Agency, consultant, and/or applicant to identify this project (if applicable):

GAI Project: R240869.00

- B. Project Address or vicinity:  
The Project is located between Benjamin Drive and Titus Lane.
- C. City/Township:  
Springfield City, Springfield Township
- D. County:  
Clark County
- E. Federal Agency and Agency Contact. *If you do not know the federal agency involved in your project, please contact the party asking you to apply for Section 106 Review, not OHPO, for this information. HUD Entitlement Communities acting under delegated environmental review authority should list their own contact information.*

Not Applicable

- F. Type of Federal Assistance. *List all known federal sources of federal funding, approvals, and permits to avoid repeated reviews.*

Not Applicable

- G. State Agency and Contact Person (if applicable):

FE is preparing to submit a Letter of Notification (LON) to the Ohio Power Siting Board (OPSB)

- H. Type of State Assistance:

Not Applicable

- I. Is this project being submitted at the direction of a state agency **solely** under Ohio Revised Code 149.53 or at the direction of a State Agency? *Answering yes to this question means that you are sure that no federal funding, permits or approvals will be used for any part of your project, and that you are seeking comments only under ORC 149.53.*

NO

- J. Public Involvement- Describe how the public has been/will be informed about this project and its potential to affect historic properties. Please summarize how they will have an opportunity to provide comments about any effects to historic properties. (This step is required for all projects under 36 CFR § 800.2):

FE will be in contact (written and verbal) with landowners directly affected by the proposed limit-of-disturbance.

- K. Please list other consulting parties that you have contacted/will contact about this project, such as Indian Tribes, Certified Local Governments, local officials, property owners, or preservation groups. (See 36 CFR § 800.2 for more information about involving other consulting parties). Please summarize how they will have an opportunity to provide comments:

FE will be in contact (written and verbal) with landowners directly affected by the proposed limit-of-disturbance.

## **SECTION 2: PROJECT DESCRIPTION AND AREA OF POTENTIAL EFFECTS (APE)**

Provide a description of your project, its site, and geographical information. You will also describe your project's Area of Potential Effects (APE). Please refer to the Instructions or contact an OHPO reviewer if you need help with developing the APE or completing this form.



*For challenging projects, provide as much information as possible in all sections, and then check the box in Section 5.A. to ask OHPO to offer preliminary comments or make recommendations about how to proceed with your project consultation. This is recommended if your project involves effects to significant historic properties or if there may be challenging procedural issues related to your project. Please note that providing information to complete all Sections will still be required and that asking OHPO for preliminary comments may tend to delay completion of the review process for some projects.*

A. Does this project involve any Ground-Disturbing activity: YES

(If **Yes**, you must complete all of Section 2.A. If **No**, proceed directly to Section 2. B.)

1. General description of width, length and depth of proposed ground disturbing activity:

The proposed Project involves the installation of two mainline line switches within an existing, approximately 100-foot-wide right of way (ROW) and a new, approximately 150-foot-long tap line to a proposed data center located within a proposed 100-foot-wide ROW. Approximately 1,500 feet of temporary access road are proposed to be utilized. The Area of Potential Effect (APE) for this Project will include approximately five acres.

2. Narrative description of previous land use and past ground disturbances, if known:

Historically this parcel had been a mix of forest and agricultural field.

3. Narrative description of current land use and conditions:

Currently land use is forested parcel and existing transmission line right-of-way.

4. Does the landowner know of any archaeological resources found on the property?  
NO If yes, please describe:

B. Submit the exact project site location on a USGS 7.5-minute topographic quadrangle map for all projects. Map sections, photocopies of map sections, and online versions of USGS maps are acceptable as long as the location is clearly marked. Show the project's Area of Potential Effects (APE). It should be clearly distinguished from other features shown on the map:

1. USGS Quad Map Name:

New Moorefield, Oh

2. Township/City/Village Name:

Springfield City and Springfield Township

C. Provide a street-level map indicating the location of the project site; road names must be identified and legible. Your map must show the exact location of the boundaries for the project site. Show the project's Area of Potential Effects (APE). It should be clearly distinguished from other features shown on the map:

D. Provide a verbal description of the APE, including a discussion of how the APE will include areas with the potential for direct and indirect effects from the project. Explain the steps taken to identify the project's APE, and your justification for the specific boundaries chosen:

The APE for this Project will include a 100-foot-wide corridor, centered on approximately 0.36 miles of existing transmission line, totaling approximately five acres.

E. Provide a detailed description of the project. This is a critical part of your submission. Your description should be prepared for a cold reader who may not be an expert in this type of

project. The information provided must help support your analysis of effects to historic properties, not other types of project impacts. Do not simply include copies of environmental documents or other types of specialized project reports. If there are multiple project alternatives, you should include information about all alternatives that are still under active consideration:

The proposed Project involves the installation of two mainline line switches within an existing, approximately 100-foot-wide right of way (ROW) and a new, approximately 150-foot-long tap line to a proposed data center located within a proposed 100-foot-wide ROW. Approximately 1,500 feet of temporary access road are proposed to be utilized. The Area of Potential Effect (APE) for this Project will include approximately five acres. FE is preparing to submit a Letter of Notification (LON) to the Ohio Power Siting Board (OPSB).

A review of previously recorded historic properties (including archaeological sites and historic architectural resources) indicates there are two previously recorded historic architectural resources (CLA0202501, CLA0202601), one cemetery (1747), and seven archaeological resources (CL0568, CL0573, CL0577, CL0578, CL0579, CL0580, CL0598) within 0.50-mile of the APE (see attached background results). Both architectural resources represent single dwellings and has an unknown NRHP status. Two of the archaeological resources (CL0573 and CL0598) represent nineteenth and twentieth century historic-era sites, while the remaining five archaeological resources are isolated finds of an unknown precontact temporal period. None of these resources are intersected by the proposed Project APE.

FE and GAI request your review and comment on the APE presented in this Section 106 Review - Project Summary Form, as well as a response as to the need for Phase I cultural resources studies.

### **SECTION 3: IDENTIFICATION OF HISTORIC PROPERTIES**

Describe whether there are historic properties located within your project APE. To make that determination, use information generated from your own Background Research and Field Survey. Then choose one of the following options to report your findings. Please refer to the Instructions and/or contact an OHPO reviewer if you are unsure about how to identify historic properties for your project.

No resources have been previously identified within the Project APE.

*If you read the Instructions and you're still confused as to which reporting option best fits your project, or you are not sure if your project needs a survey, you may choose to skip this section, but provide as much supporting documentation as possible in all other Sections, then check the box in Section 5.A. to request preliminary comments from OHPO. After reviewing the information provided, OHPO will then offer comments as to which reporting option is best suited to document historic properties for your project. Please note that providing information to complete this Section will still be required and that asking OHPO for preliminary comments may tend to delay completion of the review process for some projects.*

#### **Recording the Results of Background Research and Field Survey:**

A. **Summary of discussions and/or consultation with OHPO** about this project that demonstrates how the Agency Official and OHPO have agreed that no Field Survey was necessary for this project (typically due to extreme ground disturbance or other special circumstances). Please **attach copies** of emails/correspondence that document this agreement. You must explain how the project's potential to affect both archaeological and historic resources were considered.

B. **A table that includes the minimum information** listed in the OHPO Section 106

Documentation Table (which is generally equivalent to the information found on an inventory form). This information must be printed and mailed with the Project Summary Form. To provide sufficient information to complete this Section, you must also include summary observations from your field survey, background research and eligibility determinations for each property that was evaluated in the project APE.

- C. **OHI (Ohio Historic Inventory) or OAI (Ohio Archaeological Inventory) forms-** New or updated inventory forms may be prepared using the OHI pdf form with data population capabilities, the Internet IForm, or typed on archival quality inventory forms. To provide sufficient information to complete this Section, you must include summary observations from your field survey and background research. You must also include eligibility determinations for each property that was evaluated in the project APE
  
- D. **A historic or archaeological survey report** prepared by a qualified consultant that meets professional standards. The survey report should meet the Secretary of the Interior's Standards and Guidelines for Identification and OHPO Archaeological Guidelines. You may also include new inventory forms with your survey, or update previous inventory forms. To complete this section, your survey report must include summary observations from your field survey, background research and eligibility determinations for each property that was evaluated within the APE.
  
- E. **Project Findings.** Based on the conclusions you reached in completing Section 3, please choose one finding for your project. There are (mark one):
  - Historic Properties Present in the APE:
  - No Historic Properties Present in the APE: X

#### **SECTION 4: SUPPORTING DOCUMENTATION**

This information must be provided for all projects.

- A. Photographs must be keyed to a street-level map, and should be included as attachments to this application. Please label all forms, tables and CDs with the date of your submission and project name, as identified in Section 1. You must present enough documentation to clearly show existing conditions at your project site and convey details about the buildings, structures or sites that are described in your submission. Faxed or photocopied photographs are not acceptable. See Instructions for more info about photo submissions or 36 CFR § 800.11 for federal documentation standards.
  - 1. Provide photos of the entire project site and take photos to/from historic properties from/towards your project site to support your determination of effect in Section 5.
  - 2. Provide current photos of all buildings/structures/sites described.
- B. Project plan, specifications, site drawings and any other media presentation that conveys detailed information about your project and its potential to affect historic properties.
- C. Copies or summaries of any comments provided by consulting parties or the public.

#### **SECTION 5: DETERMINATION OF EFFECT**

- A. **Request Preliminary Comments.** For challenging projects, provide as much information as possible in previous sections and ask OHPO to offer preliminary comments or make recommendations about how to proceed with your project consultation. This is recommended if your project involves effects to significant

historic properties, if the public has concerns about your project's potential to affect historic properties, or if there may be challenging procedural issues related to your project. Please be aware that providing information in all Sections will still be required and that asking OHPO for preliminary comments may tend to delay completion of the review process for some projects.

1. We request preliminary comments from OHPO about this project:

YES

2. Please specify as clearly as possible the particular issues that you would like OHPO to examine for your project (for example- help with developing an APE, addressing the concerns of consulting parties, survey methodology, etc.):

First Energy and GAI request your review and comment on the APE presented in this Section 106 Review - Project Summary Form, as well as a response as to the need for Phase I cultural resources studies.

- B. **Determination of Effect.** If you believe that you have gathered enough information to conclude the Section 106 process, you may be ready to make a determination of effect and ask OHPO for concurrence, while considering public comments. Please select and mark one of the following determinations, then explain the basis for your decision on an attached sheet of paper:

**No historic properties will be affected** based on 36 CFR § 800.4(d) (1).

Please explain how you made this determination:

**No Adverse Effect** [36 CFR § 800.5(b)] on historic properties. This finding cannot be used if there are no historic properties present in your project APE. Please explain why the Criteria of Adverse Effect, [36 CFR Part 800.5(a) (1)], were found not to be applicable for your project:

**Adverse Effect** [36 CFR § 800.5(d) (2)] on historic properties. Please explain why the criteria of adverse effect, [36 CFR Part 800.5(a) (1)], were found to be applicable to your project. You may also include an explanation of how these adverse effects might be avoided, reduced or mitigated:

*Please send completed form and supporting documentation to our office through the [section106@ohiohistory.org](mailto:section106@ohiohistory.org) e-mail address. Note that file size is limited to 30 MB. The Ohio SHPO has a federally mandated review time of 30 calendar day. To check your submission was received and logged in for our review, please visit <https://www.ohiohistory.org/preserve/state-historic-preservation-office/hpreviews/section-106-project-status>.*


















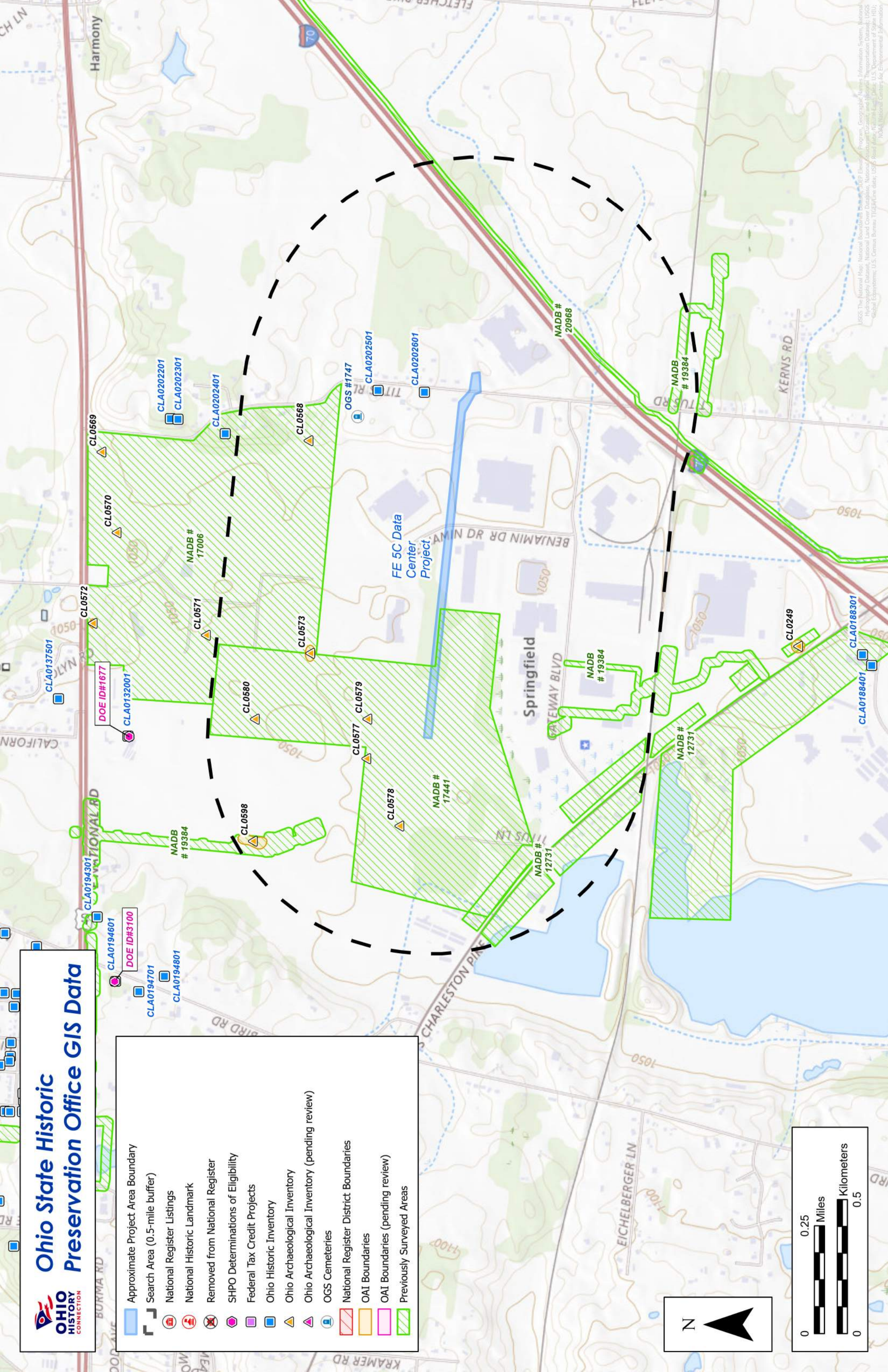
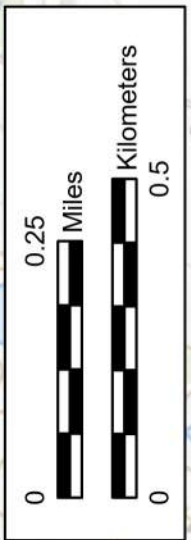
Photograph 1. General view of Project from near Structure 14006, facing east.



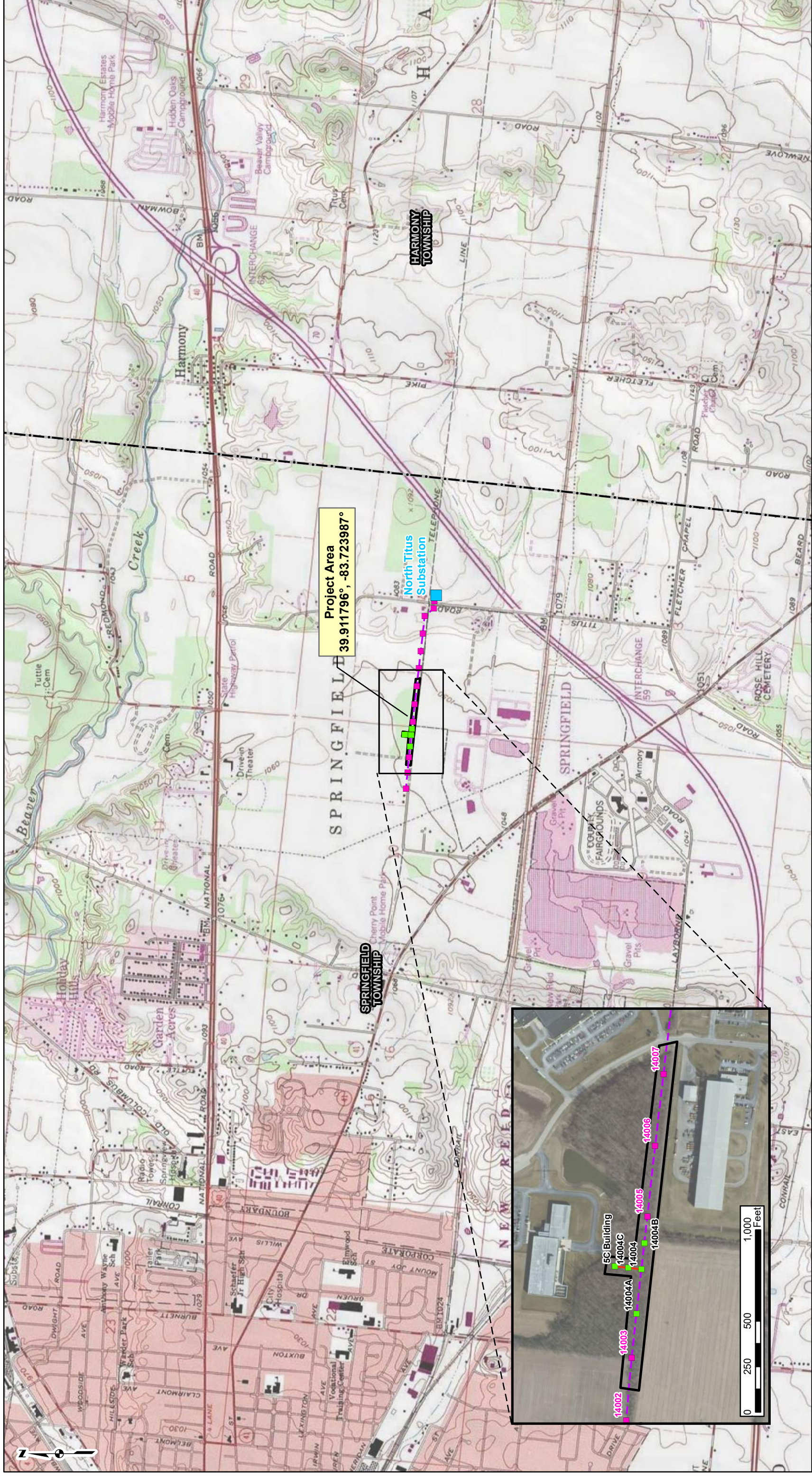
Photograph 2. General view of Project eastern terminus of APE, facing west.

**OHIO HISTORY CONNECTION**  
**Ohio State Historic Preservation Office GIS Data**


-  Approximate Project Area Boundary
-  Search Area (0.5-mile buffer)
-  National Register Listings
-  National Historic Landmark
-  Removed from National Register
-  SHPO Determinations of Eligibility
-  Federal Tax Credit Projects
-  Ohio Historic Inventory
-  Ohio Archaeological Inventory
-  Ohio Archaeological Inventory (pending review)
-  OGS Cemeteries
-  National Register District Boundaries
-  OAI Boundaries
-  OAI Boundaries (pending review)
-  Previously Surveyed Areas



USGS The National Map: National Boundaries, 1:250,000 Edition Program: Geographical Names - Information System, National Hydrography Dataset, National Land Cover Database, National Ocean Service, National Oceanic and Atmospheric Administration, U.S. Census Bureau, U.S. Department of Agriculture, U.S. Department of Energy, U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. Environmental Information...



**PROJECT LOCATION**




CLARK COUNTY, OHIO

**LEGEND**


- Existing Substation
- Existing Structure
- Proposed Structure
- Proposed Transmission
- Existing Transmission
- Area of Potential Effect
- Municipal Boundary

0 1,000 2,000 4,000 Feet



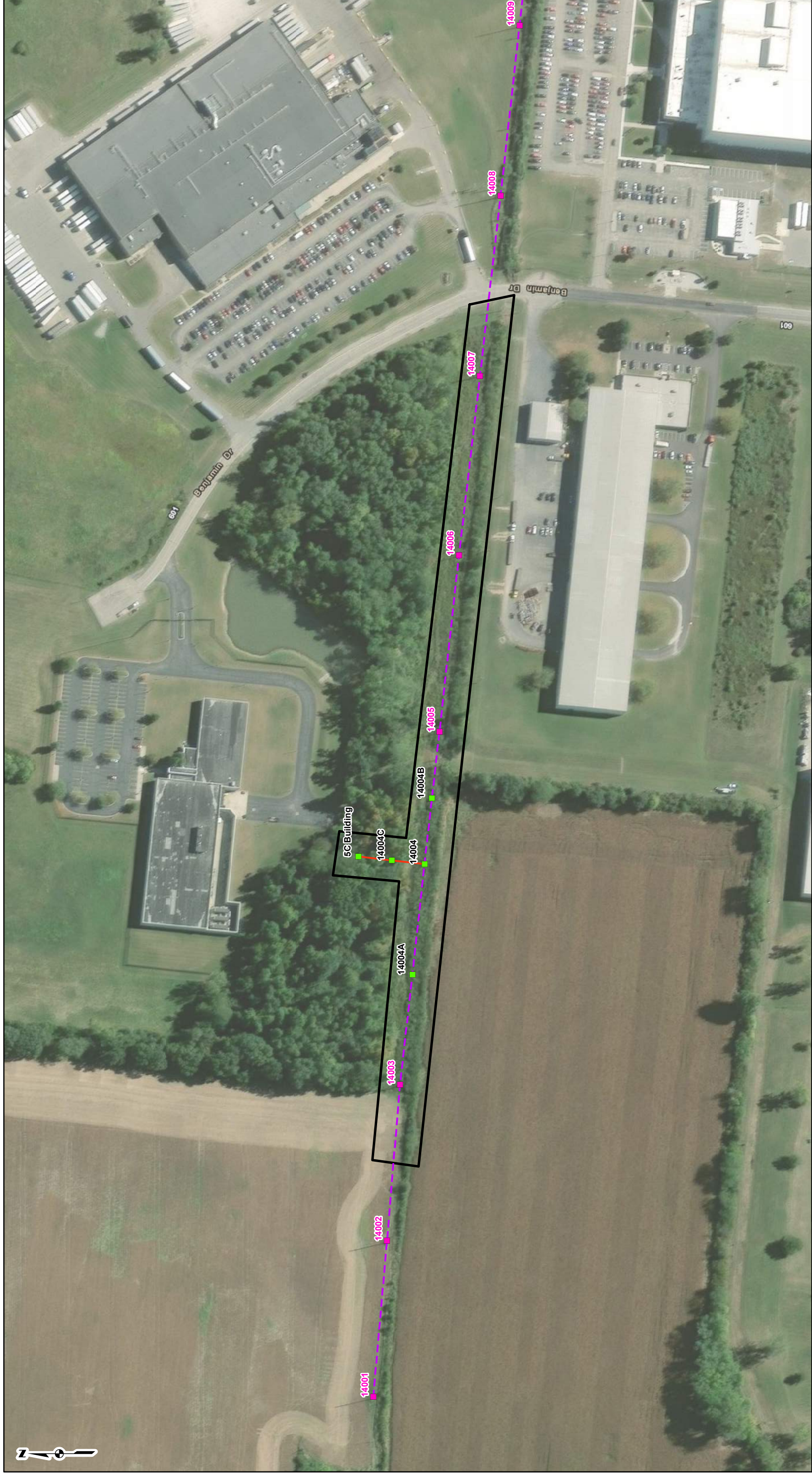
**FIGURE 1**  
**PROJECT LOCATION**

5C DATA CENTER PROJECT  
FIRSTENERGY CORPORATION



DRAWN BY: AJW      DATE: 6/26/2024  
CHECKED: JAP      APPROVED: WJC

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: SPRINGFIELD (1982) AND NEW MOOREFIELD (1982) OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS. NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 06/2024.



**PROJECT LOCATION**



CLARK COUNTY, OHIO

REFERENCE: ESRI WORLD IMAGERY, PROVIDED BY DIGITALGLOBE, VIVID - USA, 2023, AND WORLD TRANSPORTATION, OBTAINED THROUGH ESRI ARCGIS ONLINE, © 2012 ESRI, DeLORME, NAVTEQ, TOMTOM, ACCESSED 06/2024.

**LEGEND**

- Existing Structure
- Proposed Structure
- Proposed Transmission
- - - Existing Transmission
- Area of Potential Effect



**FIGURE 2  
PROJECT OVERVIEW**

 **5C DATA CENTER PROJECT**  
FIRSTENERGY CORPORATION



DRAWN BY: AJW      DATE: 6/26/2024  
CHECKED: JAP      APPROVED: WJC





# Ohio Department of Natural Resources

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MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

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**Office of Real Estate**  
*Tara Paciorek, Chief*  
2045 Morse Road – Bldg. E-2  
Columbus, Ohio 43229  
Phone: (614) 265-6661  
Fax: (614) 267-4764

July 23, 2024

Kristen Vonderwish  
GAI Consultants  
5399 Lauby Road, Suite 120  
North Canton, Ohio 44720

**Re:** 24-0932\_First Energy- 5C Data Center

**Project:** The proposed project involves the installation of two mainline line switches within an existing, approximately 100-foot-wide right of way (ROW) and a new, approximately 150-foot-long tap line to a proposed data center located within a proposed 100-foot-wide ROW.

**Location:** The proposed project is located in Springfield Township, Clark County, Ohio.

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

**Natural Heritage Database:** The Natural Heritage Database has the following data within one mile of the project area:

Yellow Sedge (*Carex flava*), P  
Prairie Rattlesnake-root (*Nabalus racemosus*), P  
Blue-leaved Willow (*Salix myricoides*), P  
Prairie fen plant community

Conservation status abbreviations are as follows: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; U = state status under review; X = presumed extirpated in Ohio; FE = federally endangered, and FT = federally threatened. Records for high quality plant communities indicate the presence of sites that are in our inventory of the best remaining examples of Ohio's pre-settlement ecosystems.

The review was performed on the specified project area as well as an additional one-mile radius. Records searched date from 1980. Features searched include locations of rare and endangered plants and animals determined to be of value to the conservation of their species, high quality plant communities, animal breeding assemblages, and outstanding geological features.

The species and features listed above are not recorded within the boundaries of the specified project area. However, please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for an area is not a statement that rare species or unique features are absent from that area.

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

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

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH  $\geq 20$  if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "[OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING](#)". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at [Eileen.Wyza@dnr.ohio.gov](mailto:Eileen.Wyza@dnr.ohio.gov)).

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

The project is within the range of the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, and the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the Iowa darter (*Etheostoma exile*), a state endangered fish, and the tonguetied minnow (*Exoglossum laurae*), a state threatened fish. The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

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

Thank you for affording us the opportunity to comment.

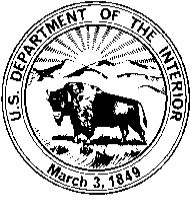
**Water Resources:** The Division of Water Resources has the following comment.

The [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew  
Environmental Services Administrator

## United States Department of the Interior



## FISH AND WILDLIFE SERVICE

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



June 26, 2024

Project Code: 2024-0106196

Dear Kristen L. Vonderwish:

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

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees  $\geq 3$  inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Federally Proposed Species: On September 14, 2022, the Service proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tricolored bat.

*Seasonal Tree Clearing for Federally Listed Bat Species:* Should the proposed project site contain trees  $\geq 3$  inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees  $\geq 3$  inches dbh cannot be avoided, we recommend removal of any trees  $\geq 3$  inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats and northern long-eared bats. If Indiana bats and northern long-eared bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend 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. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio ([https://epa.ohio.gov/portals/47/facts/ohio\\_wetlands.pdf](https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf)). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or 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, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Environmental Services Administrator, at (614) 265-6387 or at [mike.pettegrew@dnr.ohio.gov](mailto:mike.pettegrew@dnr.ohio.gov).

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,

A handwritten signature in blue ink that reads "Erin Knoll". The signature is written in a cursive style.

Erin Knoll  
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW  
Eileen Wyza, ODNR-DOW



## Wetland Delineation and Stream Identification Report

FirstEnergy Corporation  
5C Data Center Project  
Clark County, Ohio

GAI Project Number: R240869.00, Task 001  
August 2024



Prepared by: GAI Consultants, Inc.  
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## 1.0 Introduction

GAI Consultants, Inc. (GAI), on behalf of FirstEnergy Corporation (FE), completed a wetland delineation and stream identification survey for the 5C Data Center Project (Project).

The Project is located in Clark County, Ohio (OH) (Figure 1). The proposed Project involves the installation of two mainline line switches within an existing, approximately 100-foot-wide right of way (ROW) and a new, approximately 150-foot-long tap line to a proposed data center located within a proposed 100-foot-wide ROW. Approximately 1,500 feet of temporary access road are proposed to be utilized.

This report details the survey of the Project area to determine the existence of jurisdictional aquatic resources. A wetland delineation and stream identification survey were completed on June 25, 2024. The study area consisted of a 100-foot-wide corridor centered on the existing transmission line ROW.

The Project is located in the following watersheds and United States Geological Survey (USGS) Hydrologic Unit 12 Codes (HUCs):

- ▶ North Fork Little Miami River HUC No. 050902020102

This report provides a discussion of the methods and results of the wetland delineation and stream identification survey. Photographs of identified wetland features are included in Appendix A.

The United States Army Corps of Engineers (USACE) Wetland Determination Forms and Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms are provided in Appendix B. The resumes of the staff conducting the wetland delineations are provided in Appendix C.

## 2.1 Wetlands

The *1987 USACE Corps of Engineers Wetlands Delineation Manual* (Wetlands Delineation Manual) (USACE, 1987) and the *2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, Version 2.0* (Regional Supplement) (USACE, 2012) describe the methods used to identify and delineate wetlands that fall under the jurisdiction of the USACE. This approach recognizes the three parameters of wetland hydrology, hydrophytic vegetation, and hydric soils to identify and delineate wetland boundaries. In accordance with the Wetlands Delineation Manual and Regional Supplement, GAI completed preliminary data gathering and onsite inspections.

### 2.1.1 Preliminary Data Gathering

The preliminary data gathering was used to compile and review information that may be helpful in identifying wetlands and/or areas that warrant further inspection during the investigation. The preliminary data gathering included a review of the following:

- ▶ USGS 7.5-minute topographic mapping for New Moorefield (USGS, 1982a), and Springfield (USGS, 1982b) OH (Figure 1);
- ▶ United States Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) mapping (USFWS, 2024) (Figure 2);
- ▶ Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (FEMA, 2022) (Figure 2); and
- ▶ United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS, 2024) soil mapping (Figure 2).

Topographic mapping was used to identify mapped streams and the overall shape of the landscape in the Project area to determine potential locations for wetlands, such as floodplains and depressions. NWI mapping was used to determine locations where probable wetlands are

located based on infrared photography. Soil mapping was reviewed to determine the location and extent of mapped hydric soils that have a high probability of containing wetlands.

### 2.1.2 Onsite Inspection

The methodology described in the Regional Supplement identifies areas meeting the definition of a wetland by evaluating three parameters: hydrology, vegetation, and soil. During the on-site inspection, GAI staff traversed the Project study area on foot to determine if any indicators of wetlands were present. When indicators of wetlands were observed, an observation point was established, and a Wetland Determination Data Form (Data Form) was completed to determine if all three wetland indicators were present.

The presence of wetland hydrology was determined by examining the observation point for primary and secondary indicators of wetland hydrology. The presence of any primary indicator signified the presence of wetland hydrology, or the presence of two or more secondary indicators signified the presence of wetland hydrology.

Vegetation was characterized by four different strata. This included trees (woody plants, excluding vines, three inches or more in diameter at breast height [DBH]), saplings/shrubs (woody plants, excluding vines, less than three inches DBH and greater than or equal to 3.28 feet tall), herbs (non-woody plants, regardless of size, and all other plants less than 3.28 feet tall), and woody vines (greater than 3.28 feet tall). In general, trees and woody vines were sampled within a thirty-foot (30') radius, saplings and shrubs were sampled within a fifteen-foot (15') radius, and herbs were sampled within a five-foot (5') radius.

When evaluating an area for the presence of hydrophytes, classification of the indicator status of vegetation was based on *The National Wetland Plant List: 2016 Update of Wetland Ratings* (Lichvar et al., 2016). The list of possible indicator statuses for plants is as follows:

- ▶ Obligate Wetland (OBL) - Obligate Wetland plants occur in standing water or in saturated soils.
- ▶ Facultative Wetland (FACW) - Facultative Wetland plants nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may on rare occasions occur in non-wetlands.
- ▶ Facultative (FAC) - Facultative plants occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but often occur in standing water or saturated soils.
- ▶ Facultative Upland (FACU) - Facultative Upland plants typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils.
- ▶ Obligate Upland (UPL) - Obligate Upland plants almost never occur in water or saturated soils.

Presence of hydrophytic vegetation was determined by using a Rapid Test, Dominance Test, or Prevalence Index (USACE, 2012). The Rapid Test finds a vegetation community to be hydrophytic if all dominant species are OBL or FACW. Hydrophytic vegetation was considered present based on the Dominance Test if more than 50 percent of dominant species are OBL, FACW, or FAC. The Prevalence Index weighs the total percent of vegetation cover based on the indicator status of each plant. Hydrophytic vegetation was considered present when the Prevalence Index is less than or equal to 3.0.

To determine the presence of hydric soils, soil data was collected by digging a minimum 16-inch soil pit. The soil profile was studied and described, while possible hydric indicators were examined. Soil indicators described in the Wetlands Delineation Manual and Regional

Supplement were used to determine the presence of hydric soils. The presence of any of these indicators signified a hydric soil.

If all three parameters, including wetland hydrology, a dominance of hydrophytic vegetation, and hydric soils, were identified at a single observation point, the area was determined to be a wetland. Once a wetland was identified, the boundary was delineated.

Wetland boundaries were determined by looking for locations in which one of the three wetland indicators would transition into an upland characteristic. When the transition was identified, a Data Form was completed in the Upland Area. Wetland boundaries were then marked in the field using pink flagging labeled "WETLAND DELINEATION." The locations of the flags were recorded using a Global Positioning System (GPS) unit. Each wetland was codified with a unique identifier indicating the feature type and number (e.g., WOH-KLV-001).

Wetlands were then classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979) as modified for NWI Mapping Convention. This system classifies wetlands based on topographic position and vegetation type. Palustrine system wetlands found within the study area are classified as Palustrine Emergent (PEM), Palustrine Scrub-Shrub (PSS), Palustrine Forested (PFO), or Palustrine Unconsolidated Bottom (PUB) based on aerial coverage of the vegetative community across the extent of the wetland boundary (Cowardin et al., 1979).

## 2.2 Waterbodies

As with wetlands, Section 404 of the Clean Water Act (CWA) and state regulations protect waterbodies in OH. Generally, waterbodies are defined as environmental features that have defined beds and banks, ordinary high-water mark (OHWM), and contain flowing or standing water for at least a portion of the year.

### 2.2.1 Preliminary Data Gathering

During the preliminary data gathering, the USGS 7.5-minute topographic mapping was examined for the presence of mapped waterbodies including perennial and intermittent streams. In addition, the topographic mapping was used to identify areas likely to contain unmapped waterbodies including ephemeral streams (USGS, 1982a, 1982b) (Figure 1).

The OEPA Stream Eligibility Web Map was used to determine eligibility coverage under the 401 Water Quality Certification (WQC) for the 2017 Nationwide Permits (NWPs). Furthermore, the map was used to identify any ineligible areas that may require a Clean Water Act (CWA) Section 401 individual permit from the OEPA should stream impacts occur within the Project area (OEPA, 2017) (Figure 3).

### 2.2.2 Onsite Inspection

During the onsite inspection, GAI staff traversed the study area, concurrently with the wetland inspection, and waterbodies were identified. Waterbodies were identified based on the morphological and hydrologic characteristics of the channel and the presence of aquatic macroinvertebrates.

When a waterbody was identified, field measurements were collected. The measurements included top of bank width, top of bank depth, pool depth, water depth, OHWM width, and OHWM depth. A detailed description of substrate composition was also recorded. Waterbodies were then delineated using white flagging marked with the GAI stream code (e.g., SOH-KLV-001). The tops-of-bank for streams wider than 10 feet were delineated and the centerline of smaller streams were delineated. The locations of the flags were recorded using a sub-meter capable hand-held GPS unit.

## 3.0 Results

### 3.1 Wetlands

#### 3.1.1 Preliminary Data Gathering

A desktop review of available USFWS NWI digital data for the Project did not identify any previously mapped NWI wetlands within the Project Study Area (USFWS, 2024).

According to the USDA-NRCS soil mapping, 5 soil mapping units are located within the study area (Figure 2). Soil mapping units with a hydric rating included the following:

- ▶ Kokomo silty clay loam, 0 to 2 percent slopes (Ko).

#### 3.1.2 Onsite Inspection

One (PEM) wetland was identified and delineated within the Project study area. In order to document site conditions, USACE Data Forms were completed for each wetland and upland reference. Information on the delineated wetlands is provided in Table 1, photographs of the wetlands are included in Appendix A, and wetland data forms are included in Appendix B.

### 3.2 Waterbodies

#### 3.2.1 Preliminary Data Gathering

Desktop review of the available USGS National Hydrography Dataset for the Project did not reveal any mapped stream segments located within the Project study area (USGS, 2023).

#### 3.2.2 Onsite Inspection

No stream segments were identified or delineated during the onsite inspection.

## 4.0 Conclusion

A wetland delineation and waterbody identification field survey were conducted within the Project study area on June 25, 2024. One wetland was identified within the Project study area. A summary of the delineated feature is provided in Table 1, and a map of its location is provided on Figure 2. Wetland photographs are provided in Appendix A. Data forms documenting the investigations are provided in Appendix B. The resumes of the staff conducting the wetland delineations are provided in Appendix C.

## 5.0 References

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- United States Geological Survey. 2020. *National Hydrography Dataset (NHD)*. Available from <http://nhd.usgs.gov/data.html>
- United States Geological Survey. 1982a. New Moorefield, Ohio 7.5-Minute Topographic Quadrangle (1:24,000).
- United States Geological Survey. 1982b. Springfield, Ohio 7.5-Minute Topographic Quadrangle (1:24,000).

## **TABLES**

**Table 1**  
**Wetlands Identified Within the Project Study Area**

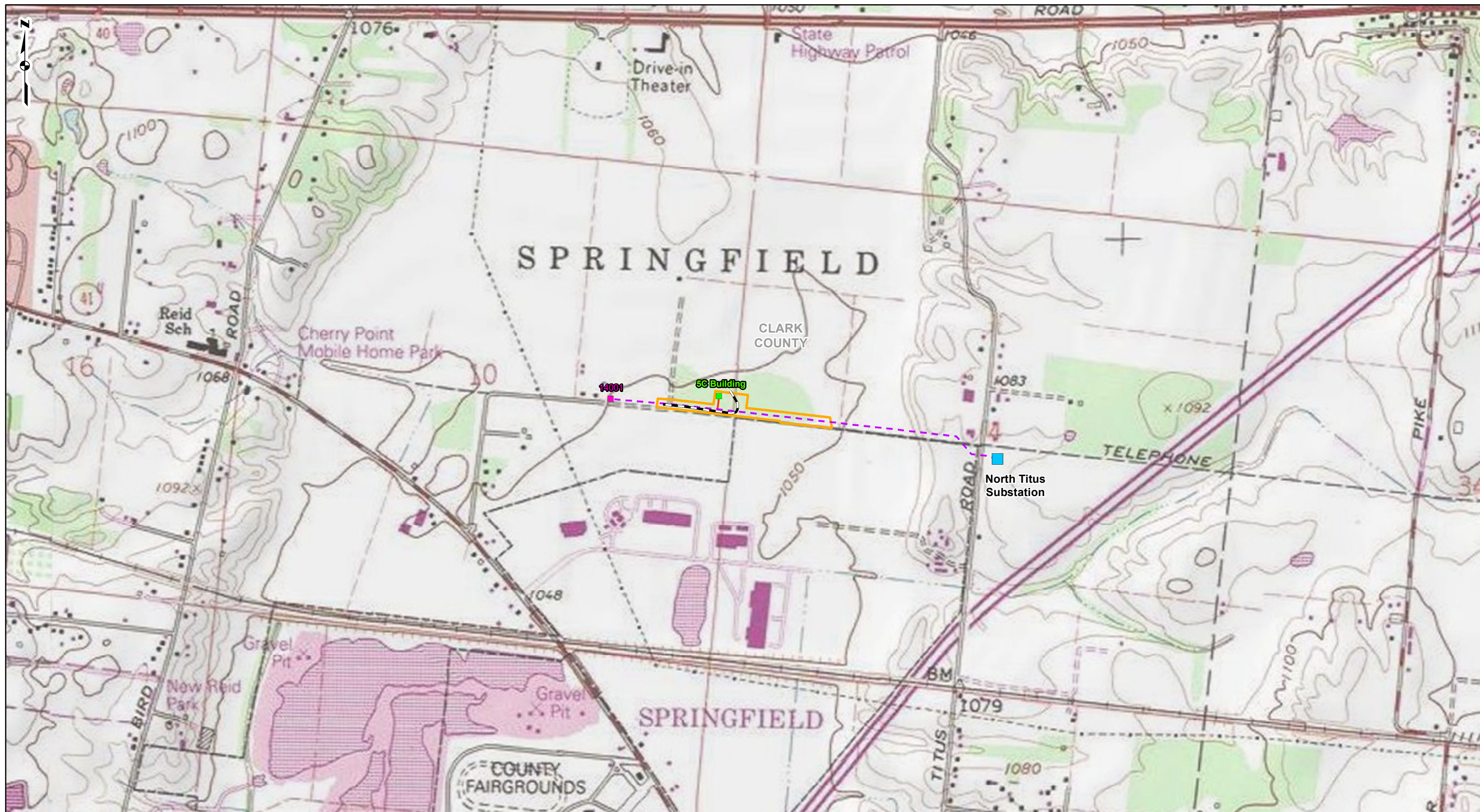
Wetland I.D. <sup>1</sup>	Latitude <sup>2</sup>	Longitude <sup>2</sup>	Proximal Waterbody	USACE Classification <sup>3</sup>	Cowardin Classification <sup>4</sup>	Size (acres) <sup>5</sup>	ORAM v. 5.0 Score <sup>6</sup>	ORAM Category <sup>7</sup>
WOH-KLV-001	39.910987	-83.720612	UNT to North Fork Little Miami River	Jurisdictional; Adjacent	PEM	0.174	22	1

Notes:

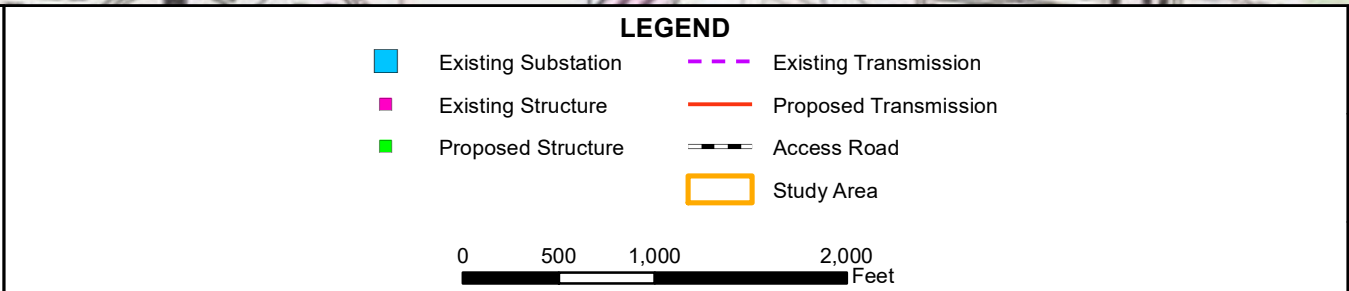
- <sup>1</sup> GAI map designation.
- <sup>2</sup> Coordinates provided in North American Datum, 1983.
- <sup>3</sup> Jurisdictional status is the opinion of GAI and must be confirmed by the USACE and state agencies through the JD process.
- <sup>4</sup> Based on Cowardin Classification system (Cowardin et al., 1979). PEM- Palustrine Emergent, PSS- Palustrine Scrub-Shrub; PFO- Palustrine Forested.
- <sup>5</sup> Wetland size as delineated in the field and measured using Geographic Information Systems within study area.
- <sup>6</sup> Interim scoring breakpoints for wetland regulatory categories for ORAM v 5.0 Score: Category 1 score 0 - 29.9; Category 1 or 2 gray zone ORAM score 30 - 34.9; Category modified 2 ORAM score 35 - 44.9; Category 2 ORAM score 45 - 59.9; Category 2 or 3 ORAM score 60 - 64.9; Category 3 ORAM score 65 - 100. OEPA Ecology Unit Division of Surface Water. *ORAM v. 5.0 Qualitative Score Calibration*. Dated August 15, 2000. [http://www.epa.ohio.gov/portals/35/401/oram50sc\\_s.pdf](http://www.epa.ohio.gov/portals/35/401/oram50sc_s.pdf).
- <sup>7</sup> OAC Rule 3745-1-54(C)(2) defines Category 1 wetlands as wetlands which "...support minimal wildlife habitat, and minimal hydrological and recreation functions," and as wetlands which have "...hydrologic isolation, low species diversity, a predominance of non-native species, no significant habitat or wildlife use, and limited potential to achieve beneficial wetland functions." Category 2 wetlands are defined as wetlands which "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Degraded but Restorable Category 2 Wetlands are according to OAC Rule 3745-1-54(C) states that wetlands that are assigned to Category 2 constitute the broad middle category that "...support moderate wildlife habitat, or hydrological or recreational functions," but also include "...wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." OAC Rule 3745-1-54(C)(2) defines Category 3 wetlands as wetlands which "...support superior habitat, or hydrological or recreational functions," and as wetlands which have "...high levels of diversity, a high proportion of native species, or high functional values."

## FIGURES





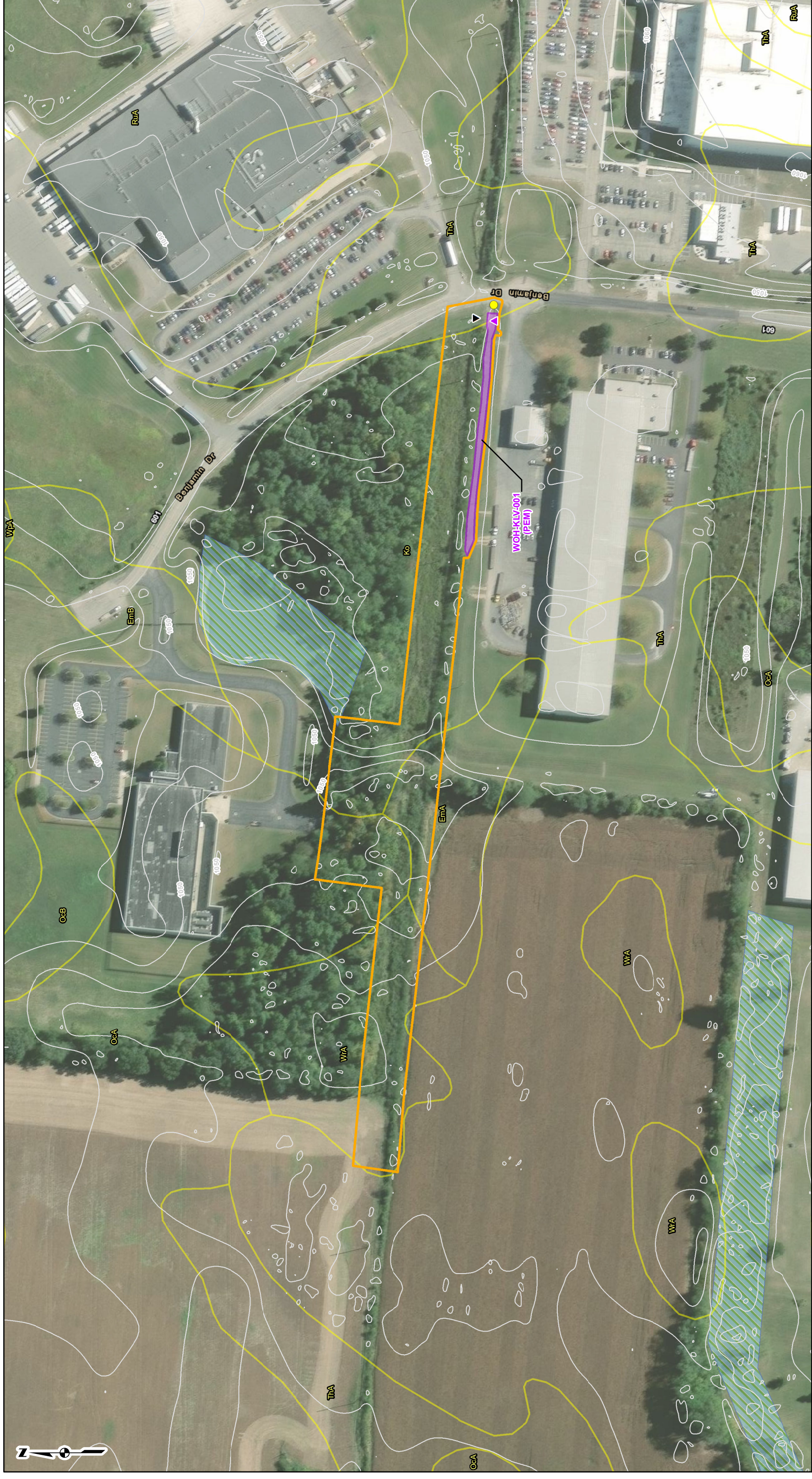
REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: NEW MOOREFIELD (1982) AND SPRINGFIELD (1982), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 07/2024.



**FIGURE 1  
PROJECT LOCATION MAP**

**5C DATA CENTER PROJECT**  
 FIRSTENERGY CORPORATION

DRAWN BY: ATG	DATE: 7/18/2024
CHECKED: JAP	APPROVED:



**REFERENCE:** WORLD IMAGERY, MAXAR (2023), ESRI, ARCGIS ONLINE, ACCESSED 07/2024, WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 07/2024, NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2022, NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2022, SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE, USDA/NRCS, 2023, FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2024, CONTOUR DATA, DERIVED FROM USGS DEMs, DOWNLOADED 2024.

**FIGURE 2**

**RESOURCE LOCATION MAP**

5C DATA CENTER PROJECT  
FIRSTENERGY CORPORATION

DRAWN BY: ATG      DATE: 7/18/2024  
CHECKED: JAP      APPROVED:

**LEGEND**

- ▲ Upland Data Point
- ▼ Wetland Data Point
- Existing Culvert
- ▭ Wetland
- ▭ Study Area
- ▭ 2-Ft Contour
- ▭ NHD Stream
- ▭ Soil Type Boundary
- ▭ NWI Wetland
- ▭ 100-Year FEMA Floodplain

0    100    200    400  
Feet

## **APPENDIX A**

### **Wetland Photographs**



**WOH-KLV-001 (PEM)  
Facing East (06/25/2024)**



**WOH-KLV-001 (PEM)  
Facing East (06/25/2024)**



**WOH-KLV-001 (PEM)  
Facing East (06/25/2024)**



**WOH-KLV-001 (PEM)  
Facing West (06/25/2024)**

## **APPENDIX B**

### **Wetland Delineation Identification Forms and Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms**

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_  
 Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_  
 Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_  
 Slope (%): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present?	Yes _____ No _____	<b>Is the Sampled Area within a Wetland?</b>	Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____		
Wetland Hydrology Present?	Yes _____ No _____		
Remarks:			

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____ )				Prevalence Index worksheet:
1. _____	_____	_____	_____	_____ Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum (Plot size: _____ )				Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	___ 1 - Rapid Test for Hydrophytic Vegetation
2. _____	_____	_____	_____	___ 2 - Dominance Test is >50%
3. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
4. _____	_____	_____	_____	___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
5. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____ )				Hydrophytic Vegetation Present?
1. _____	_____	_____	_____	Yes _____ No _____
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				



## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_  
 Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_  
 Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_  
 Slope (%): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

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

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

Hydrophytic Vegetation Present?	Yes _____ No _____	<b>Is the Sampled Area within a Wetland?</b>	
Hydric Soil Present?	Yes _____ No _____		Yes _____ No _____
Wetland Hydrology Present?	Yes _____ No _____		
Remarks:			

### VEGETATION – Use scientific names of plants.

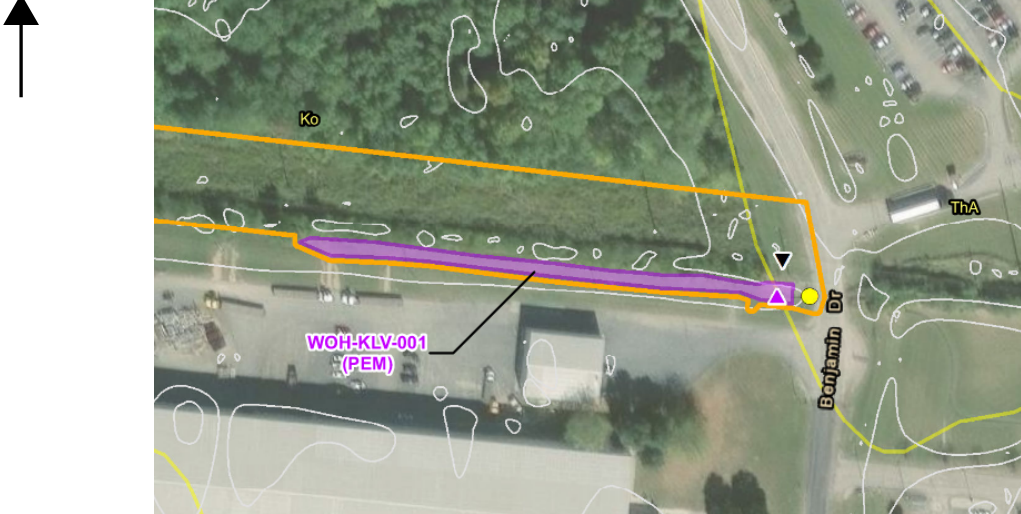
<u>Tree Stratum</u> (Plot size: _____ )	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
Sapling/Shrub Stratum	(Plot size: _____ )			
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum	(Plot size: _____ )			
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum	(Plot size: _____ )			
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				





# Background Information

<b>Name:</b>	
<b>Date:</b>	
<b>Affiliation:</b>	
<b>Address:</b>	
<b>Phone Number:</b>	
<b>e-mail address:</b>	
<b>Name of Wetland:</b>	
<b>Vegetation Communit(ies):</b>	
<b>HGM Class(es):</b>	
<b>Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.</b>	
Lat/Long or UTM Coordinate	
USGS Quad Name	
County	
Township	
Section and Subsection	
Hydrologic Unit Code	
Site Visit	
National Wetland Inventory Map	
Ohio Wetland Inventory Map	
Soil Survey	
Delineation report/map	

Name of Wetland:	
Wetland Size (acres, hectares):	
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
	
Comments, Narrative Discussion, Justification of Category Changes:	
Final score :	Category:

## Scoring Boundary Worksheet

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

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

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

## Narrative Rating

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

#	Question	Circle one	
1	<b>Critical Habitat.</b> Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 2	<input checked="" type="radio"/> NO  Go to Question 2
2	<b>Threatened or Endangered Species.</b> Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES  Wetland is a Category 3 wetland.  Go to Question 3	<input checked="" type="radio"/> NO  Go to Question 3
3	<b>Documented High Quality Wetland.</b> Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES  Wetland is a Category 3 wetland  Go to Question 4	<input checked="" type="radio"/> NO  Go to Question 4
4	<b>Significant Breeding or Concentration Area.</b> Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES  Wetland is a Category 3 wetland  Go to Question 5	<input checked="" type="radio"/> NO  Go to Question 5
5	<b>Category 1 Wetlands.</b> Is the wetland less than 0.5 hectares (1 acre) in size and <b>hydrologically isolated</b> and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES  Wetland is a Category 1 wetland  Go to Question 6	<input checked="" type="radio"/> NO  Go to Question 6
6	<b>Bogs.</b> Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES  Wetland is a Category 3 wetland  Go to Question 7	<input checked="" type="radio"/> NO  Go to Question 7
7	<b>Fens.</b> Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES  Wetland is a Category 3 wetland  Go to Question 8a	<input checked="" type="radio"/> NO  Go to Question 8a
8a	<b>"Old Growth Forest."</b> Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES  Wetland is a Category 3 wetland.  Go to Question 8b	<input checked="" type="radio"/> NO  Go to Question 8b

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

**Table 1. Characteristic plant species.**

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

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

<b>Site:</b>	<b>Rater(s):</b>	<b>Date:</b>
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max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

max 30 pts.	subtotal

### Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select only one and assign score.

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

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

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

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

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

Check all disturbances observed

<input type="checkbox"/> ditch <input type="checkbox"/> tile <input type="checkbox"/> dike <input type="checkbox"/> weir <input type="checkbox"/> stormwater input	<input type="checkbox"/> point source (nonstormwater) <input type="checkbox"/> filling/grading <input type="checkbox"/> road bed/RR track <input type="checkbox"/> dredging <input type="checkbox"/> other _____
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max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> clearcutting <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> farming <input type="checkbox"/> nutrient enrichment
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subtotal this page



<b>Site:</b>	<b>Rater(s):</b>	<b>Date:</b>
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subtotal first page

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max 10 pts.      subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

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max 20 pts.      subtotal

## Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- Emergent
- Shrub
- Forest
- Mudflats
- Open water
- Other \_\_\_\_\_

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

**End of Quantitative Rating. Complete Categorization Worksheets.**

# ORAM Summary Worksheet

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

**Complete Wetland Categorization Worksheet.**

## Wetland Categorization Worksheet

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

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

**End of Ohio Rapid Assessment Method for Wetlands.**

## **APPENDIX D**

### **Resume of Staff Conducting the Wetland Delineations**



## Kristen Vonderwish

Senior Project Environmental Specialist

### Education

BS, Environment and Natural Resources,  
2009, Ohio State University

AAS, Recreation and Wildlife Management,  
2005, Hocking College

### Skills

Wetland Delineation

Environmental Permitting

Mitigation Monitoring

Forest Resource Management

Aquatic Ecology Studies

### Certifications/Training

U.S. Army Corps of Engineers Wetland  
Delineation Training.

24-hour MSHA Training

10-Hour Occupational Safety and Health  
Training

Ohio Rapid Assessment for Wetlands  
Training

OH Department of Transportation  
Waterway Permits Training

OH Department of Transportation  
Ecological Training

OH Department of Transportation  
Categorical Exclusion Training

### Industry Experience

GAI Consultants, Inc., 2016-Present

Buckeye Mineral Services, Inc. /Mine  
Services, Inc., 2010-2016

URS Corporation, 2010

United States Department of Agriculture:  
U.S. Forest Service, Wayne National  
Forest, 2009

### Professional Summary

Ms. Vonderwish specializes in environmental investigations. She has conducted and led field investigations that included wetland and stream delineations, threatened and endangered species surveys, macroinvertebrate surveys, and mitigation monitoring. She is familiar with current Ohio (OH) and federal regulations including the Section 401 and 404 permitting process (Clean Water Act). She has successfully prepared applications and technical reports for natural resource related projects.

### Professional Experience

- Ohio Mitigation Bank Project, located in Guernsey County, Ohio (OH) for a Confidential Client. Conducted biological sampling for the project. GAI is responsible for collecting physical, chemical, and biological data necessary for calculation of Ohio Stream and Wetland Valuation Metric and preparation of the Conceptual Mitigation Plan for approximately 2,000 linear feet of stream within a Mitigation Bank area.
- Performed and led field efforts concerning surface water determinations, delineations, and additional assessments for projects involving surface coal mining, industrial mineral mining, the construction of pipelines, new transmission lines, reconstruction or modification of existing transmission lines, and associated access roads.
- Conducted wetland delineations and vegetation surveys for several constructed compensatory wetland sites in OH to evaluate and report fulfillment of mitigation success criteria.
- Conducted routine (monthly) monitoring of compensatory wetlands and streams in OH to satisfy mitigation monitoring conditions for surface coal mining specific projects. Routine assessments involved water sampling, benthic macroinvertebrate sampling, amphibian surveys, various vegetation surveys, and annual wetland determinations.
- Implemented and performed bi-annual water quality assessments (Sections 404 and 401 compliance) for a proposed surface mine project that included habitat assessments, water quality sampling, fish surveys, and benthic macroinvertebrate surveys following the OH Department of Environmental Protection and U.S. Army Corps of Engineers protocols.
- Prepared Section 404 and 401 Permits (individual permits and nationwide permits) for several surface coal mining projects in Southeastern OH.

- OH stream and wetland classification using the Headwater Habitat Evaluation Index, Qualitative Habitat Evaluation Index, Rapid Bioassessment Protocols for Use in Streams and Wadeable Rivers, and the OH Rapid Assessment Method respectively.
- Performed forest stand exams for the United States Forest Service.
- Conducted a timber cruise on a 20,000-acre tract in northeast OH. Determined volume of merchantable timber, species composition, accessibility, and environmental constraints.