

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

**CONSTRUCTION NOTICE**

**SAMMIS-SOUTH CANTON  
345 kV TRANSMISSION LINE  
STRUCTURE REPLACEMENT PROJECT**

**OPSB Case No. 23-0951-EL-BNR**

**November 20, 2023**

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

**SAMMIS-SOUTH CANTON 345 kV TRANSMISSION LINE  
STRUCTURE REPLACEMENT 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 (“Board”) as a Construction Notice application.

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

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

Name of Project: Sammis–South Canton 345 kV Transmission Line  
Structure Replacement Project (“Project”)

Reference Number: 1014

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

In this Project, ATSI is proposing to replace existing steel lattice structure (Str. 40182) on the Sammis-South Canton 345 kV Transmission Line with two H-frame steel monopole structures on concrete foundations. The two H-frame structures will be installed on either side of the existing structure, approximately 400 feet to the east (Str. 40182A) and 240 feet to the west (Str. 40182B) to allow for the existing structure to be removed from an area of an eroding stream that has exposed the structure’s foundation.

This project is located in Sandy Township, Stark County, Ohio. The general location of the Project is shown in Exhibit 1, a partial copy of the United States Geologic Survey, Stark County, OH, Quad Map. Exhibit 2 provides a partial copy of ESRI aerial imagery showing the Project area. General Project layout is shown in Exhibit 3.

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

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

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

*(a) two miles or less*

The proposed Project is within the requirements of Item (2)(a) as it involves replacing structures with a different type of structure for a distance of less than two miles.

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

Existing Tower 40182 is located within a flood plain of a meandering stream. The stream has severely eroded around the northwest tower foundation, almost completely exposing the foundation. The tower has been temporarily stabilized by restoring/stabilizing the stream bank and installing guy wires. However, due to the meandering nature of the stream, the integrity of the tower remains jeopardized. It is anticipated, that in the coming years, the stream will oxbow and place the tower directly in the path of the stream. A failure of one tower may cause cascading failure along the line since the towers on the Sammis-South Canton 345 kV Transmission Line are of a vintage design circa 1962 that have a very narrow footprint, providing little longitudinal support.

The proposed solution is to replace Tower 40182 with 2 H-Frame steel pole structures, located one to the east and one to the west. They will be located outside of the flood plain. Structure 40182A will be designed as a dead-end structure capable of withstanding line loads from only one side and preventing cascading failure. This will improve the

reliability of the line and decrease outage times in the event of a failure on the adjacent towers/lines.

**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. 2023 Long-Term Forecast Report. This map was submitted to the Public Utilities Commission of Ohio (“PUCO”) in Case No. 23-0504-EL-FOR under Rule 4901:5-5:04 (C)(2)(b) of the Ohio Administrative Code. This map is incorporated by reference only. The general location of the Project area is shown in Exhibits 1 and 2. The general layout is shown in Exhibit 3. This project was not included in the 2023 Long-Term Forecast Report as it is a restoration project and does not impact ATSI’s long-term forecast. . Due to the nature of the project (maintenance/restoration), it was not presented to PJM.

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

Due to the nature of the eroding stream and the current structure location, there were no alternatives considered for this Project.

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

ATSI’s manager of External Affairs will advise local officials of the features and the status of the proposed Project, as necessary. ATSI has also established a Project website, through which a copy of this Construction Notice application can be accessed: [https://www.firstenergycorp.com/about/transmission\\_projects/ohio.html](https://www.firstenergycorp.com/about/transmission_projects/ohio.html). During all phases of this Project, the public may ask questions, submit comments or contact ATSI through the transmission projects hotline at 1-888-311-4737 or via email at: [transmissionprojects@firstenergycorp.com](mailto:transmissionprojects@firstenergycorp.com).

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

Construction on this Project is expected to begin on February 19, 2024, and be completed by May 2024.

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

Exhibit 1 and 2 depict the general location of the Project. Exhibit 1 provides a partial copy of the United States Geologic Survey, Stark County, OH, Quad Map. Exhibit 2 is a copy of ESRI aerial imagery of the Project area. This Project is located in Sandy Township, Stark County, Ohio.

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

The Project is located wholly within ATSI’s existing right-of-way on a single property (parcel ID 6400016). No new easements will be required for the completion of this Project.

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

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

The transmission line construction will have the following characteristics:

- Voltage: 345 kV
- Conductors: 954 kcmil 48/7 ACSR
- Static Wire: 7#8 Alumoweld
- Insulators: Porcelain and/or Glass
- ROW Width: 150’
- Structure Types: Exhibit 4: 345 kV Single Circuit Suspension H-Frame Structure (Str. 40182B)  
Exhibit 5: 345 kV Single Circuit Deadend H-Frame Structure (Str. 40182A)

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

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 capital cost for the proposed project is approximately \$920,000.

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

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

The Project is located in Sandy Township, Stark County, Ohio. The main land use around the Project is open land/flood plain. The Project is located within existing right-of-way, so no changes or impacts to the current land use are anticipated.

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

Agricultural land does not exist within the Project's disturbance area.

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

As part of the investigation for this Construction Notice, TRC Companies, Inc. ("TRC") performed a desktop review of the Ohio Historic Preservation Office ("OHPO") online database on August 1, 2023, to identify the existence of any significant archeological or cultural resource sites within 0.5 mile of the Project Area. A map of the results of the search is shown in Exhibit 6.

The OHPO database includes all Ohio listings on the National Register of Historic Places ("NRHP"), including districts, sites, building, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture. The results of the search indicate that no listed NRHP sites and no NRHP Districts were identified within the Project Area.

The OHPO database also includes listing of the Ohio Archaeological Inventory ("OAI"), the Ohio Historic Inventory ("OHI"), previous cultural resource surveys, and the Ohio Genealogical Society ("OGS") cemetery inventory. One (1) previous cultural resource survey was conducted within 0.5 miles of the Project Area and is identified in Table 1. There were zero (0) structural resources, zero (0) OAI, and zero (0) OGS cemeteries identified within the affected project area.

**Table 1. List of Previous Cultural & Historic Resource Survey**

<b>Year</b>	<b>Name</b>	<b>County</b>
2004	Phase I Cultural Resource Management Investigations within the 282 ha (697 ac.) American Landfill Property in Osnaburg and Sandy Townships, Stark County, Ohio	Stark

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

There were no government agency requirements at the time of filing.

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

TRC submitted a request to the Ohio Department of Natural Resources (“ODNR”) to conduct an Environmental Review of the Project area on November 4, 2022. As part of that Environmental Review, the ODNR Office of Real Estate searches the ODNR Division of Wildlife’s Natural Heritage Database in order to research the presence of any endangered, threatened, or rare species within one (1) mile of the Project Study Area. After the November 4, 2022, request submission to the ODNR, the Project Study Area was revised to include an additional 0.71-acre portion adjacent to the original Project Study Area (“Addition”). TRC resubmitted a request to the ODNR Office of Real Estate to conduct an updated Environmental Review for the Addition on October 18, 2023. As of October 31, 2023, a response has not yet been received but will be forwarded upon receipt. However, ODNR originally responded on November 30, 2022, stating there are no records of state or federally listed plants or animals within the Project Study Area as shown in Exhibit 7. ODNR went further to indicate that the Project 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; the tricolored bat (*Perimyotis subflavus*), a state endangered species; the Iowa darter (*Etheostoma exile*), a state endangered fish; the spotted turtle (*Clemmys guttata*), a state threatened species; and the northern harrier (*Circus hudsonis*). Due to the absence of rare species habitat, Project type, size and location, there will be no adverse effects to state/federally endangered, threatened, proposed species, or proposed designated habitat,

as a result of the Project's proposed activities. In assessing compliance with NWP General Condition 18, TRC determined that no tree clearing will occur during the construction of this Project. Therefore, no impacts to bat species will occur as a result of the construction of this Project. In addition, a desktop bat hibernacula assessment was completed on December 5, 2022, attached as Exhibit 8, per ODNR's 2022 request, and no bat habitat was observed within the Project Study Area.

Little Sandy Creek (Stream S-MRR-1) is an unlisted freshwater mussel stream, according to the 2022 and 2023 Ohio Mussel Survey Protocol (Protocol). Little Sandy Creek (Stream S-MRR-1) has a drainage area of 34.4 square miles. According to the Protocol, S-MRR-2 is an unlisted stream, with a drainage area of 0.15 square miles. A freshwater mussel reconnaissance survey is required for any unlisted streams with drainage areas being greater than 5 square miles. A freshwater mussel reconnaissance survey was completed on Little Sandy Creek (Stream S-MRR-1) in September 2022. The reconnaissance survey within Little Sandy Creek (Stream S-MRR-1) met all the requirements for reconnaissance surveys in Appendix B of the Protocol. During a total of 180 minutes of searching, no live mussels or mussel shells were observed within Little Sandy Creek (Stream S-MRR-1). This reconnaissance effort was coordinated with ODNR, and written concurrence was received on September 29, 2022, attached as Exhibit 9. The concurrence stated that a Group 1 mussel survey is not required within Little Sandy Creek (SMRR-1). In addition, no in-stream work is anticipated for this Project, therefore, no impacts to freshwater mussel will occur as a part of this proposed Project.

TRC also submitted a request to the US 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 Area. A copy of USFWS's Ecological Review response, dated October 27, 2023, is included as Exhibit 10. The response indicated that due to the project type, size, and location, the USFWS does not anticipate adverse effects to federally endangered, threatened, or proposed species or proposed or designated critical habitat.



A list of all endangered, threatened, and rare species, as identified by ODNR DOW and USFWS, is provided in Table 2.

**Table 2. List of Endangered, Threatened, and Rare Species**

Common Name	Scientific Name	Federal and State Listing Status	Affected Habitat
Indiana bat	<i>Myotis sodalis</i>	Federally and State Endangered	Trees and forests
Northern long-eared bat	<i>Myotis septentrionalis</i>	Federally and state Endangered	Trees and forests
Little Brown Bat	<i>Myotis lucifugus</i>	State Endangered	Trees and forests
Tricolored Bat	<i>Perimyotis subflavus</i>	State endangered	Trees and forests
Iowa Darter	<i>Etheostoma exile</i>	State Endangered	Perennial streams
Spotted Turtle	<i>Clemmys guttata</i>	State Threatened	Fens, bogs, marshes
Norther Harrier	<i>Circus hudsonis</i>	State Endangered	Marshes, Grasslands

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

The ODNR and USFWS comments did not identify any areas of ecological concern. On October 5, 2023, TRC biologists conducted a wetland and waterways delineation for additional acreage associated with the Sammis-South Canton Line 345kV Bank Stabilization (Project) in Sandy Township, Stark County, Ohio. This Addition is approximately 0.71-acres in size and is an add-on to the original Project Study Area delineated in September 2022, attached as Exhibit 11, resulting in a revised total Project Study Area of 5.12-acres. No ecological resources were observed within the Addition. As such, the total of water resources within the Project remains one (1) PEM wetland (W-MRR-1) and two (2) streams [Sandy Creek, (S-MRR-1), perennial; and S-MRR-2, intermittent].

The original Project Study Area and Addition, consists mainly of existing maintained utility right-of-way within open land/ flood plain. TRC did not observe the presence of any of the ODNR-listed species during the field investigation due to the highly maintained nature of the utility right-of-way and existing facility. Therefore, no impacts are anticipated to the listed reptiles, fish, or birds.

A review of the National Conservation Easement Database (www.conservationeasement.us) revealed no conservation easements in the Project Study Area.

**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 Transmittal and Availability for Public Review**

This Construction Notice is being sent concurrently with docketing to the following officials in Sandy Township, Stark County, Ohio. A copy will also be provided to the library for public review/reference.

**Stark County**

Ms. Janet Weir Creighton  
Stark County Commissioner  
110 Central Plaza South  
Canton, OH 44702

Mr. Alexander Zumbar  
Stark County Treasurer  
110 Central Plaza South  
Canton, OH 44702

Mr. Richard Regula  
Stark County Commissioner  
110 Central Plaza South  
Canton, OH 44702

Mr. Keith Bennett  
Stark County Engineer  
5165 Southway St. S.W.  
Canton, OH 44706

Mr. Bill Smith  
Stark County Commissioner  
110 Central Plaza South  
Canton, OH 44702

Mr. John Weedon  
Stark County SWCD Director  
2650 Richville Drive SE, Suite 100  
Massillon, OH 44646

**Sandy Township**

Mr. Robert Fallot  
Township Trustee  
8170 Waynesburg Drive SE  
Waynesburg, Ohio 44688

Mr. John Petro  
Township Trustee  
8170 Waynesburg Drive SE  
Waynesburg, Ohio 44688

Mr. Gary Offenberger  
Township Trustee  
8170 Waynesburg Drive SE  
Waynesburg, Ohio 44688

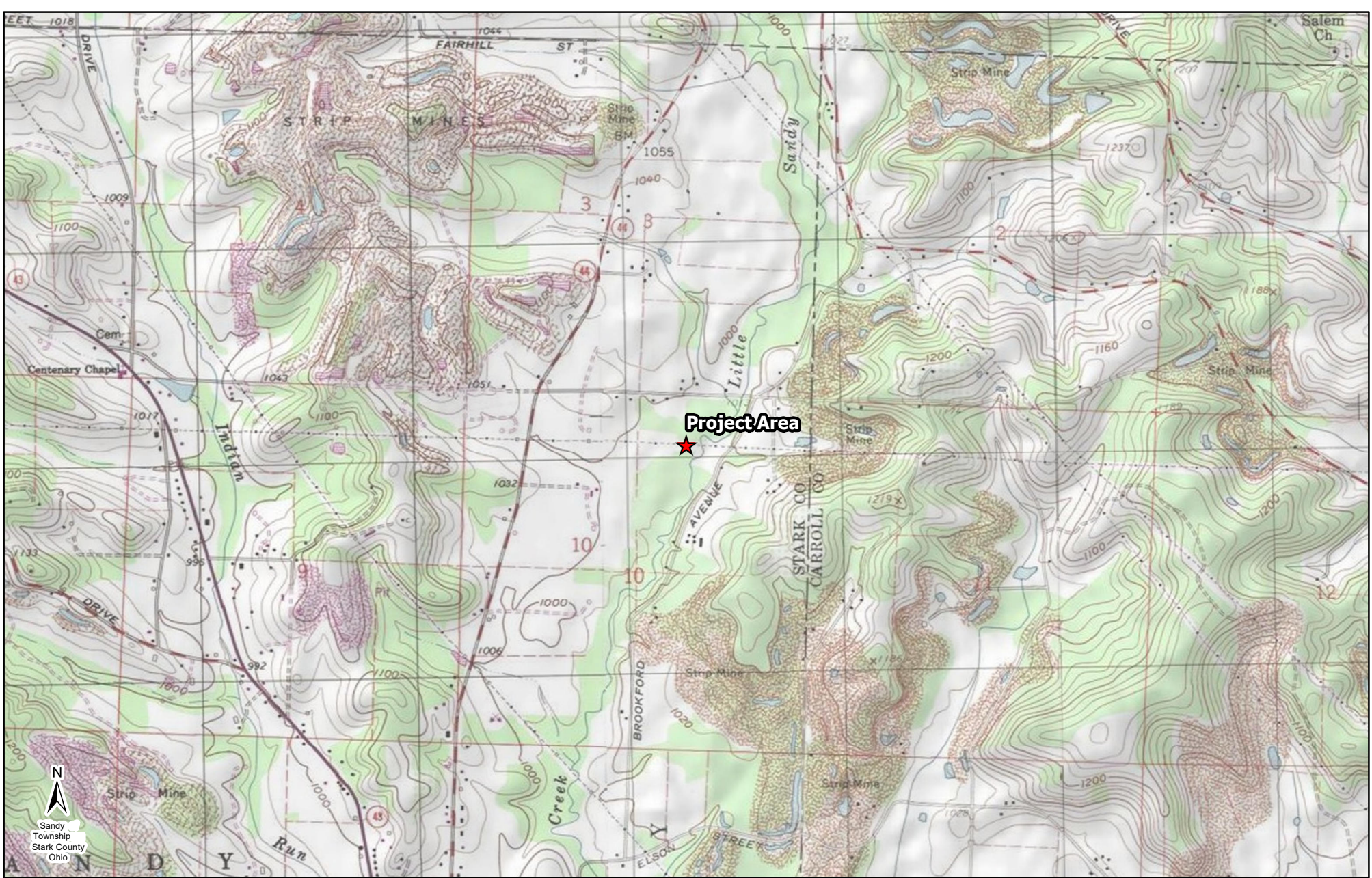
Ms. Cathy McKinney  
Township Fiscal Officer  
8170 Waynesburg Drive SE  
Waynesburg, Ohio 44688

**Library**

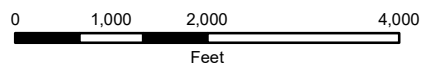
Ms. Alyssa Bender  
Sandy Valley Branch Manager  
Stark County District Library,  
9754 Cleveland Ave SE,  
Magnolia, OH 44643

Per OAC Rule 4906-6-07(B), an exemplar copy of 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 Board with proof of compliance for OAC Rule 4906-6-07(A)(3).



**LEGEND:**  
 ★ Project Area



**Reference:**  
 USGS Topographical Overlay

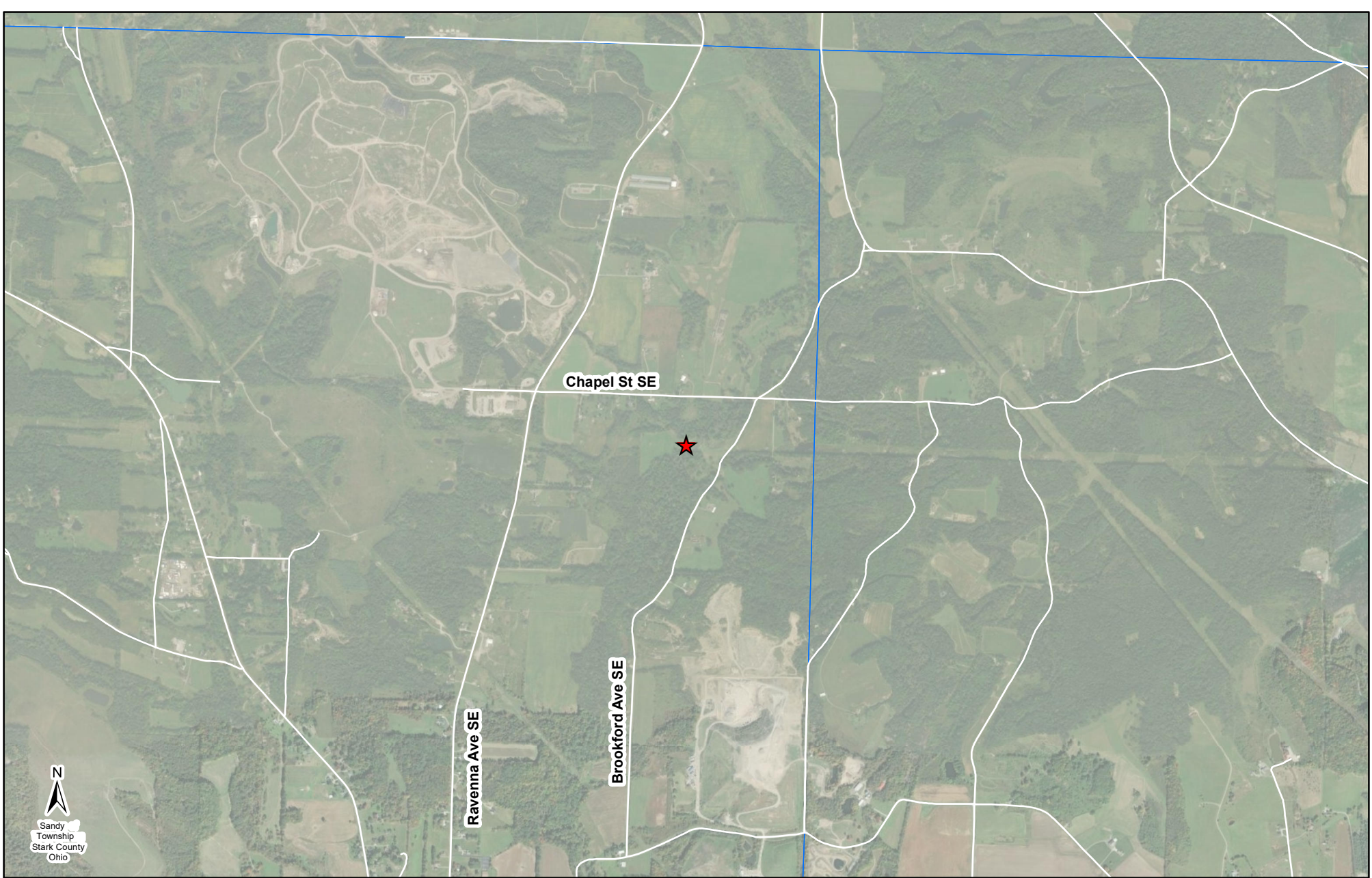
**Coordinate System:**  
 NAD 1983 StatePlane Ohio North FIPS 3401 Feet  
 Projection: Lambert Conformal Conic; Units: Foot US



**EXHIBIT 1**



**Sammis South Canton 345 kV  
 Transmission Line Structure Replacement Project**



Sandy  
Township  
Stark County  
Ohio


Ravenna Ave SE

Brookford Ave SE

Chapel St SE



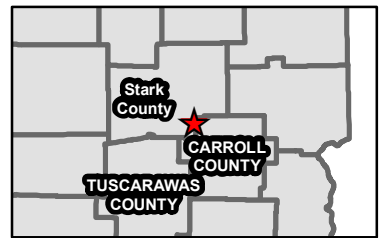
**LEGEND:**

 Project Area

0 1,000 2,000 4,000  
Feet

**Reference:**  
ESRI, Aerial Imagery, ODOT

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










**EXHIBIT 2**

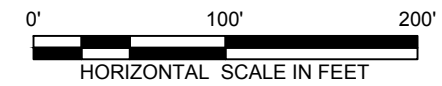
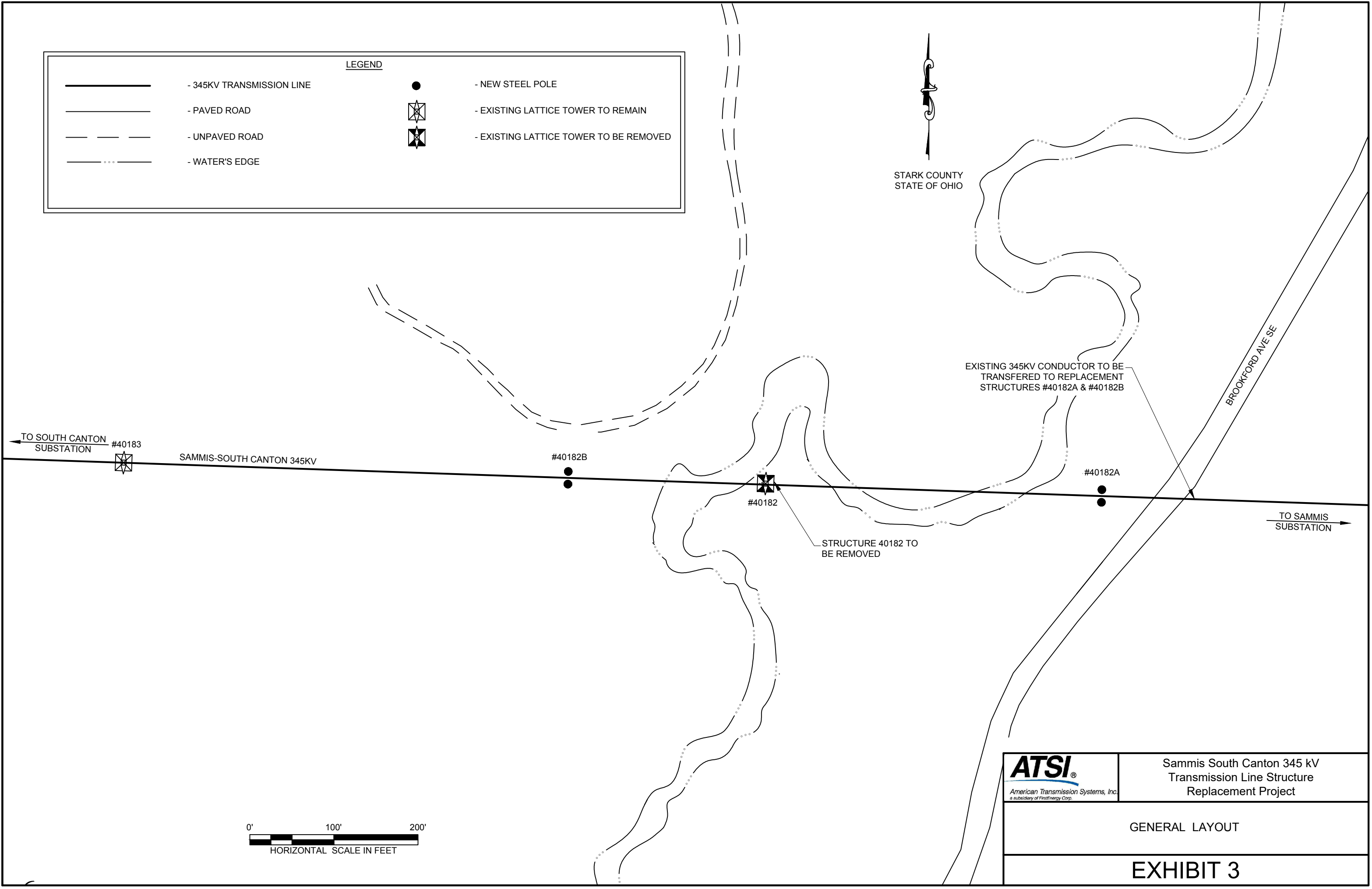
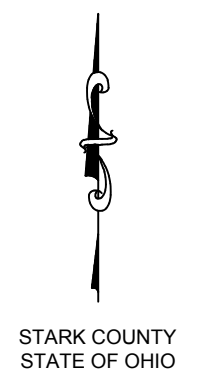
**ATSI**  
American Transmission Systems, Inc.  
a subsidiary of FirstEnergy Corp.


**Sammis South Canton 345 kV  
Transmission Line Structure Replacement Project**

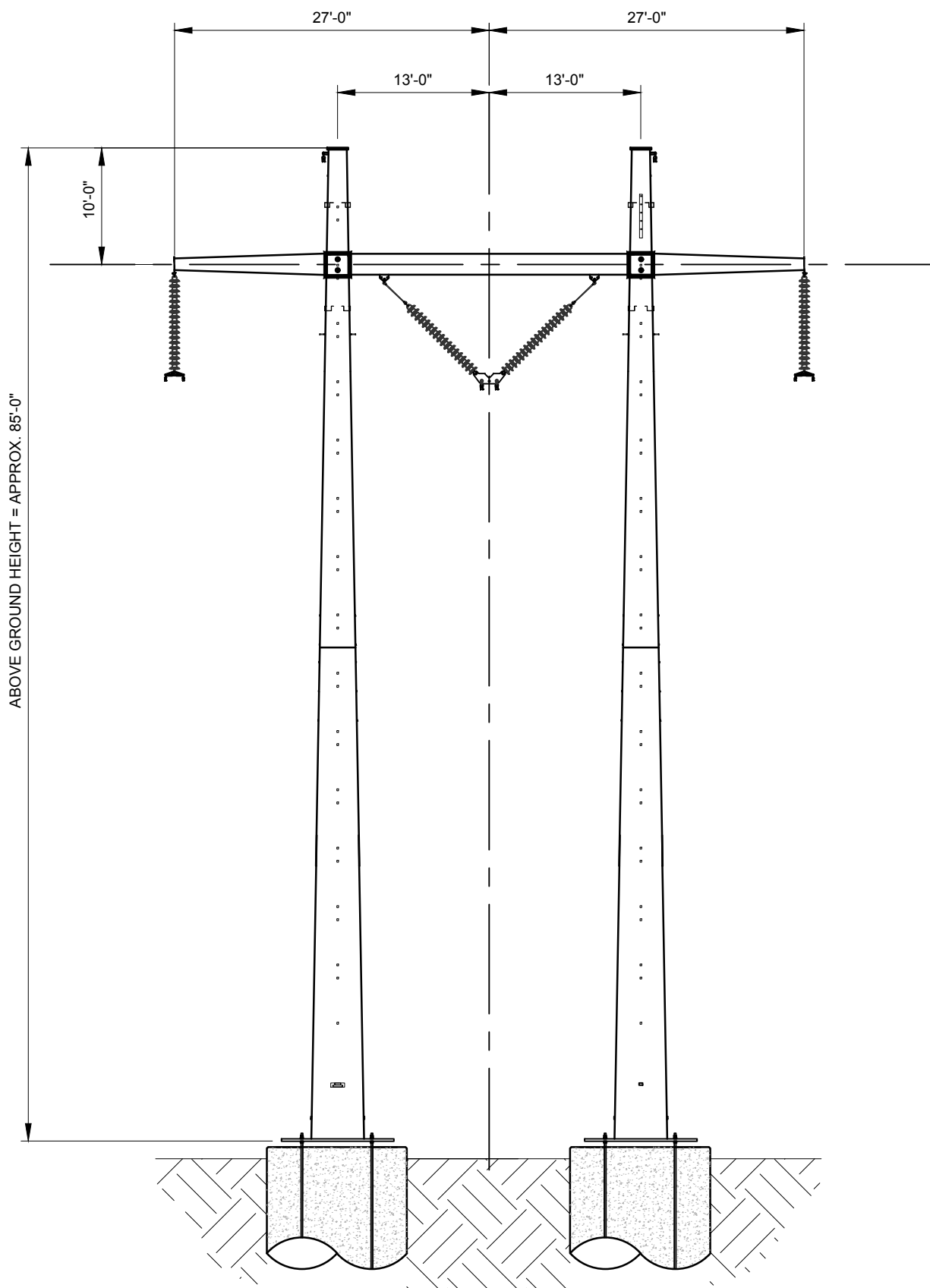
SAMMIS-SOUTH CANTON 345KV STR 40182 REPLACEMENT AND RELOCATION EX. 3

**LEGEND**

	- 345KV TRANSMISSION LINE		- NEW STEEL POLE
	- PAVED ROAD		- EXISTING LATTICE TOWER TO REMAIN
	- UNPAVED ROAD		- EXISTING LATTICE TOWER TO BE REMOVED
	- WATER'S EDGE		



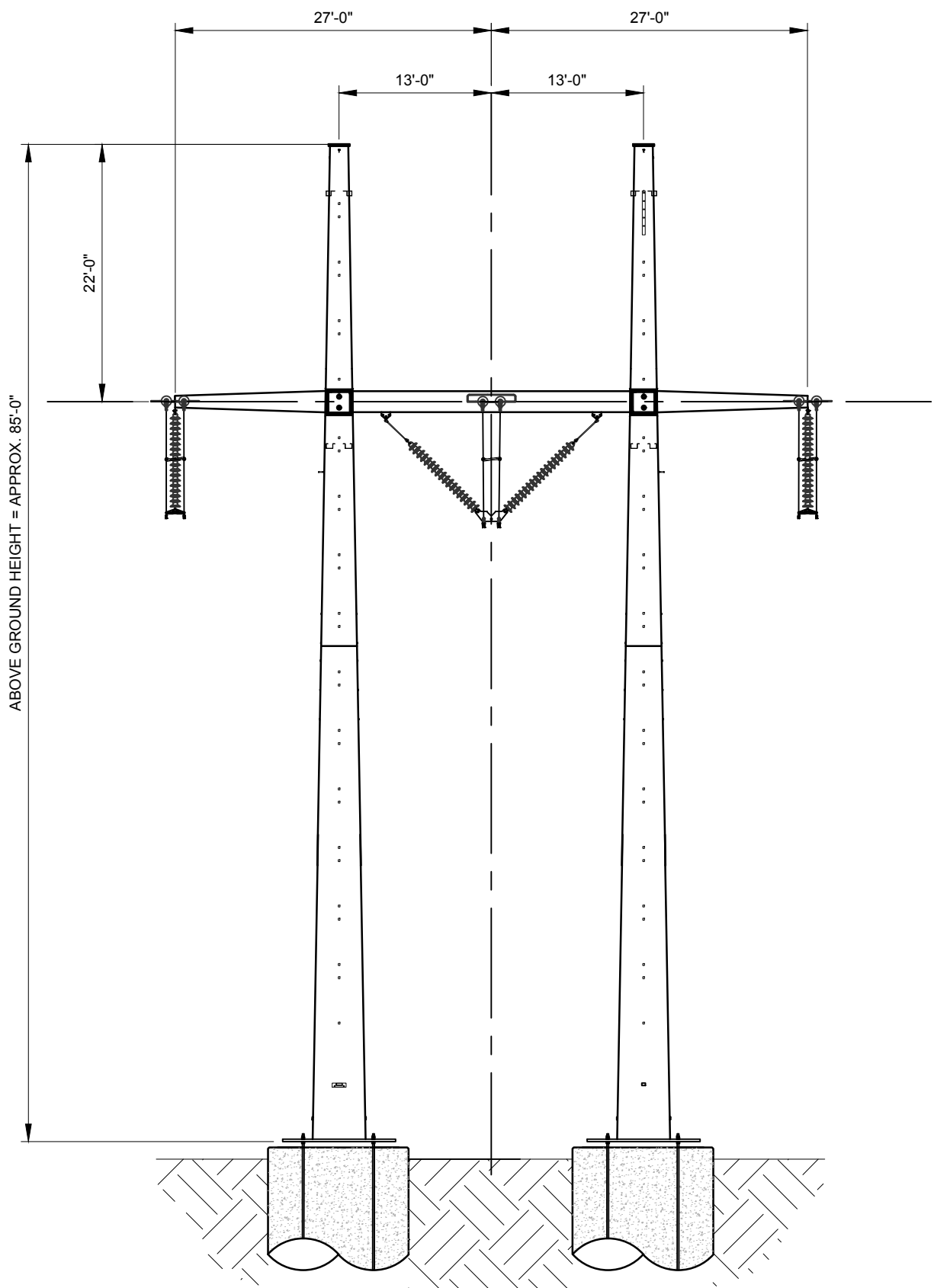
 American Transmission Systems, Inc. <small>a subsidiary of FirstEnergy Corp.</small>	Sammis South Canton 345 kV Transmission Line Structure Replacement Project
	GENERAL LAYOUT
<b>EXHIBIT 3</b>	



Sammis South Canton 345 kV  
Transmission Line Structure  
Replacement Project

345KV SINGLE CIRCUIT 2-POLE TUBULAR STEEL  
SUSPENSION H-FRAME STRUCTURE  
STRUCTURE #40182B

**EXHIBIT 4**



ABOVE GROUND HEIGHT = APPROX. 85'-0"



Sammis South Canton 345 kV  
Transmission Line Structure  
Replacement Project

345KV SINGLE CIRCUIT 2-POLE TUBULAR STEEL  
DEADEND H-FRAME STRUCTURE  
STRUCTURE 40182A

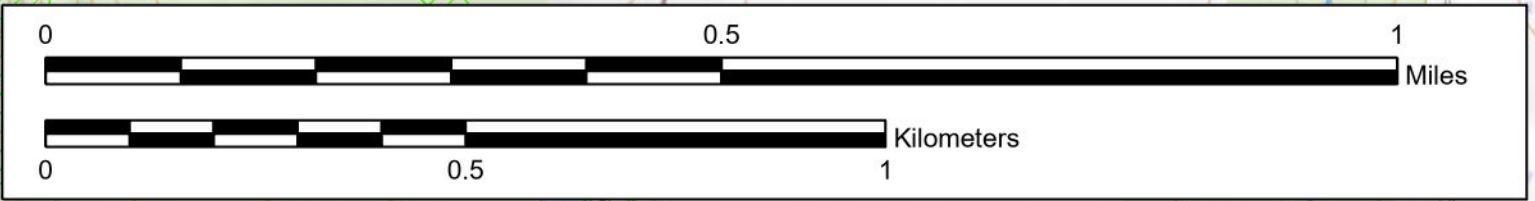
**EXHIBIT 5**



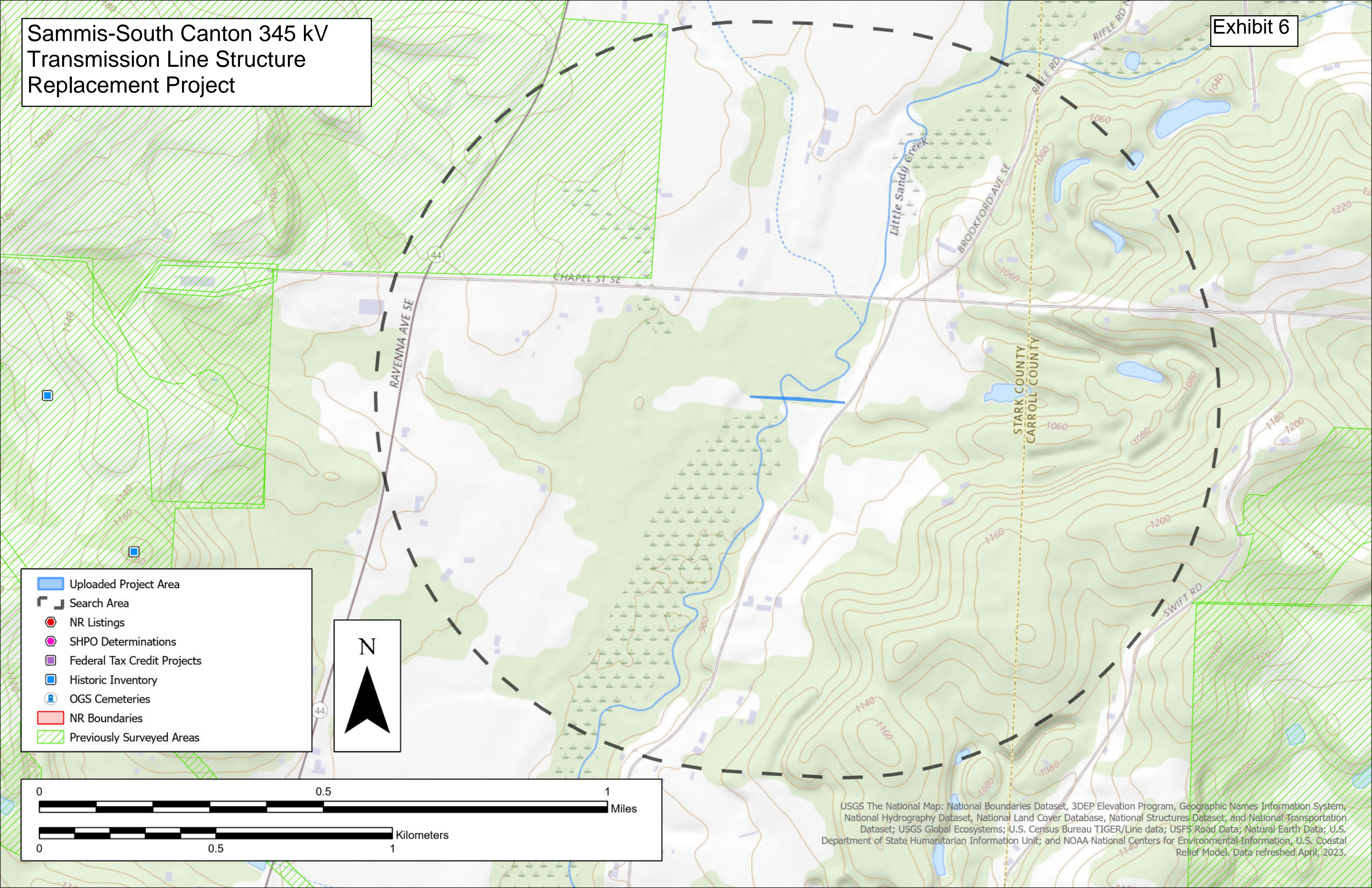
# Sammis-South Canton 345 kV Transmission Line Structure Replacement Project

Exhibit 6

- Uploaded Project Area
- Search Area
- NR Listings
- SHPO Determinations
- Federal Tax Credit Projects
- Historic Inventory
- OGS Cemeteries
- NR Boundaries
- Previously Surveyed Areas



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed April, 2023.





# Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR

MARY MERTZ, DIRECTOR

**Office of Real Estate**

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

November 30, 2022

Jenna Slabe  
 TRC Companies  
 1382 W 9th St, Suite 400  
 Cleveland, OH 44113

**Re:** 22-1112; Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Project

**Project:** The proposed project involves the stabilization of the left descending bank of Little Sandy Creek due to severe erosion, threatening the integrity of Structure 40182 of the Sammis-South Canton Line.

**Location:** The proposed project is located in Sandy Township, Stark County, Ohio.

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

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

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

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

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

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

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH  $\geq 20$  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.

This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2022), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the [Ohio Mussel Survey Protocol](#). If there is no in-water work proposed, impacts to mussels are not likely.

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

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

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

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

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

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

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

Mike Pettegrew  
Environmental Services Administrator



December 5, 2022

**Desktop Assessment for potential hibernaculum for the Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Project located in Sandy Township, Stark County, Ohio (TRC Project No. 429847.0036.0000)**

TRC Companies, Inc. (TRC), at the recommendation of the Ohio Department of Natural Resources (ODNR), completed a desktop habitat assessment, on behalf the FirstEnergy Corporation (FirstEnergy), to determine if potential hibernaculum is present within the proposed Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Project (Project) Study Area. The proposed Project is located in Sandy Township, Stark County, Ohio (**Appendix A, Figure 1** and **Figure 2**). The land within the Project Study Area consists of maintained utility right-of-way and agricultural land use, totaling 4.41 acres (**Appendix A, Figure 3**).

During the recommended desktop habitat assessment, secondary source information was utilized to determine if past or present underground resources were present within 0.25-mile of the Project Study Area. The secondary source information utilized included but was not limited to: aerial imagery mapping (GoogleEarth, 2022), karst topography mapping (ODNR, 2021a), mine data mapping (ODNR, 2021b), and land cover dataset mapping (USGS, 2016).

The desktop habitat assessment indicated that no potential bat hibernaculum is present within 0.25-miles of the Project Study Area (**Appendix A, Figure 4**). No mining activities were identified within 0.25-mile of the Project Study Area. The closest active mining operation is located approximately 6.6 miles northeast of the Project Study Area. The Project Study Area is not located within a karst region. The nearest karst region is 86.2 miles to the west of the Project Study Area.

In addition, a surface water delineation was conducted by TRC on September 26, 2022, at which time summer and winter bat habitat was concurrently assessed. Based on the field investigations, no summer or winter bat habitat was identified within the Project Study Area. During field investigations, photographs of the Project Study Area were taken, which depict the site conditions (**Appendix B**).

No summer or winter bat habitat was identified within the Project Study Area and potential bat hibernaculum is not likely present within 0.25-mile of the Project Study Area; therefore, it is TRC's opinion that federally- or state- listed bats species are not likely to be impacted by this proposed Project. In addition, no tree-clearing is anticipated within the Project Study Area. We kindly request your concurrence that potential bat hibernaculum is not likely present within 0.25 mile of the Project Study Area.

**Appendices:**

Appendix A: Figures

Figure 1: Site Location Map

Figure 2: Aerial Map

Figure 3: National Land Cover Database Map

Figure 4: Mine/Karst Map

Appendix B: Photographic Record

## References

Google Earth. (2022). Google Earth Images of Project Area. *Date accessed December, 2022.*

ODNR. (2021a). *Karst Interactive Map, ODNR Division of Geological Survey*. Retrieved from OhioDNR: [https://gis.ohiodnr.gov/website/dgs/karst\\_interactivemap/](https://gis.ohiodnr.gov/website/dgs/karst_interactivemap/)

ODNR. (2021b). *Mines of Ohio, ODNR Division of Mineral Resources*. Retrieved from OhioDNR: <https://gis.ohiodnr.gov/MapView/?config=OhioMines>

USGS. (2016). *National Land Cover Database*. Retrieved from [https://www.usgs.gov/centers/eros/science/national-land-cover-database?qt-science\\_center\\_objects=0#qt-science\\_center\\_objects](https://www.usgs.gov/centers/eros/science/national-land-cover-database?qt-science_center_objects=0#qt-science_center_objects)



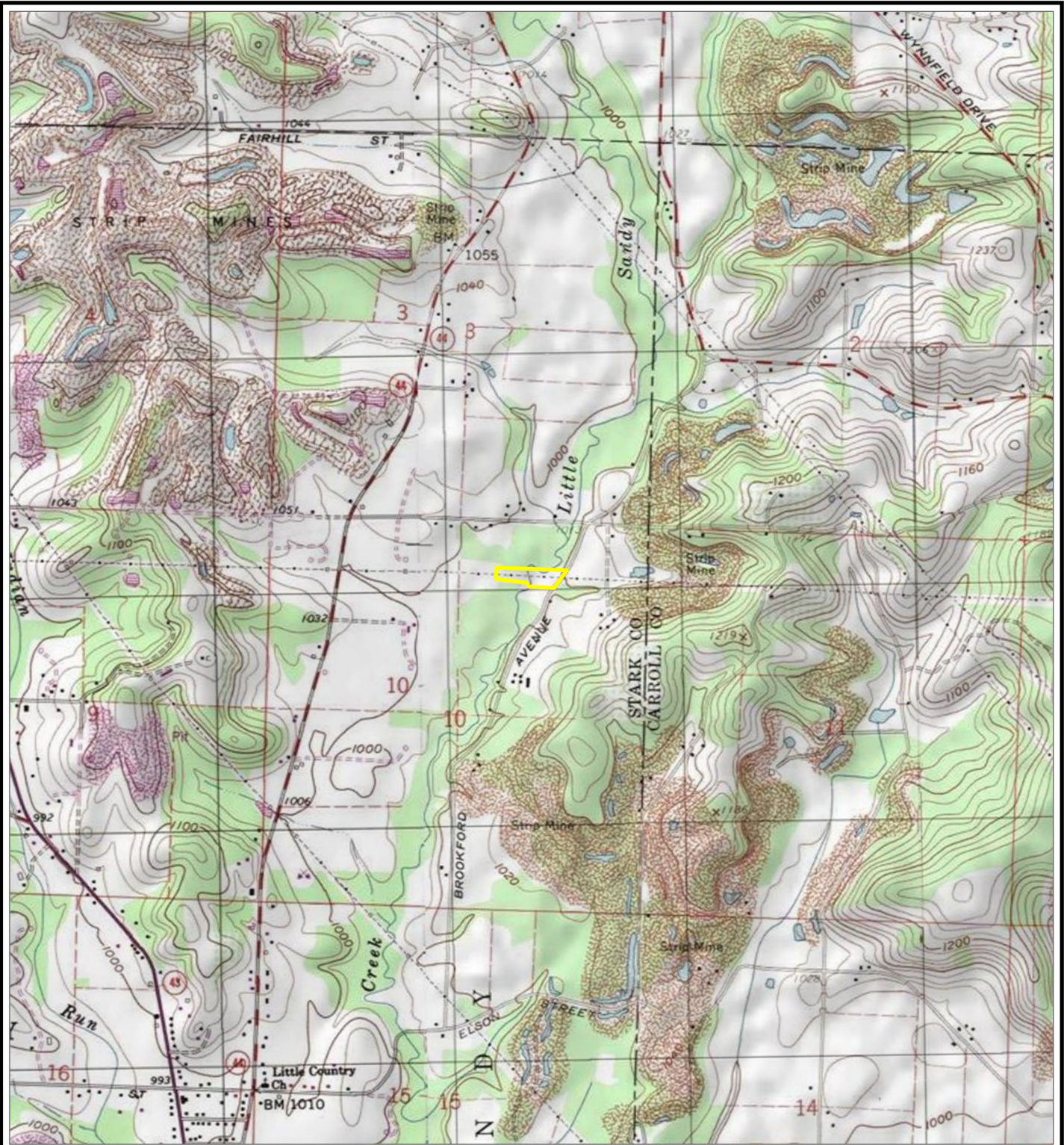
1382 W Ninth St., Suite 400  
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T 216.344.3072  
[TRCcompanies.com](http://TRCcompanies.com)

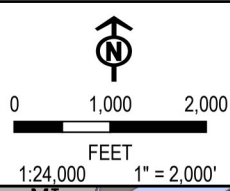
## **APPENDIX A**

### **Figures**

COORDINATE SYSTEM: NAD 1983 STATEPLANE OHIO NORTH FIPS 3401 FEET, MAP ROTATION: 0  
 -- SAVED BY: MOPEL ON 12/22/2022, 10:23:24 AM. FILE PATH: T:\1-PROJECTS\FIRST\_ENERGY\429847\_0036\_SAMMISSCANTON\2-APRX\HIBERNACULA\ASSESSMENT\APRX\_LAYOUT\NAME\_FIG01\_SLM



PROJECT STUDY AREA



BASE MAP: USA TOPO MAPS MAP SERVICE, MALVERN QUAD

PROJECT: **FIRSTENERGY**  
**SAMMISS-SOUTH CANTON LINE 345KV BANK**  
**STABILIZATION AT STRUCTURE 40182 PROJECT**  
**STARK COUNTY, OH**

TITLE: **SITE LOCATION MAP**

DRAWN BY: M. OPEL	PROJ. NO.: 429847.0036
CHECKED BY: T. RADFORD	<b>FIGURE 1</b>
APPROVED BY: B. FALKENBURG	
DATE: DECEMBER 2022	

**TRC** 1382 WEST NINTH STREET  
 SUITE 400  
 CLEVELAND, OH 44113  
 PHONE: 216-344-3072

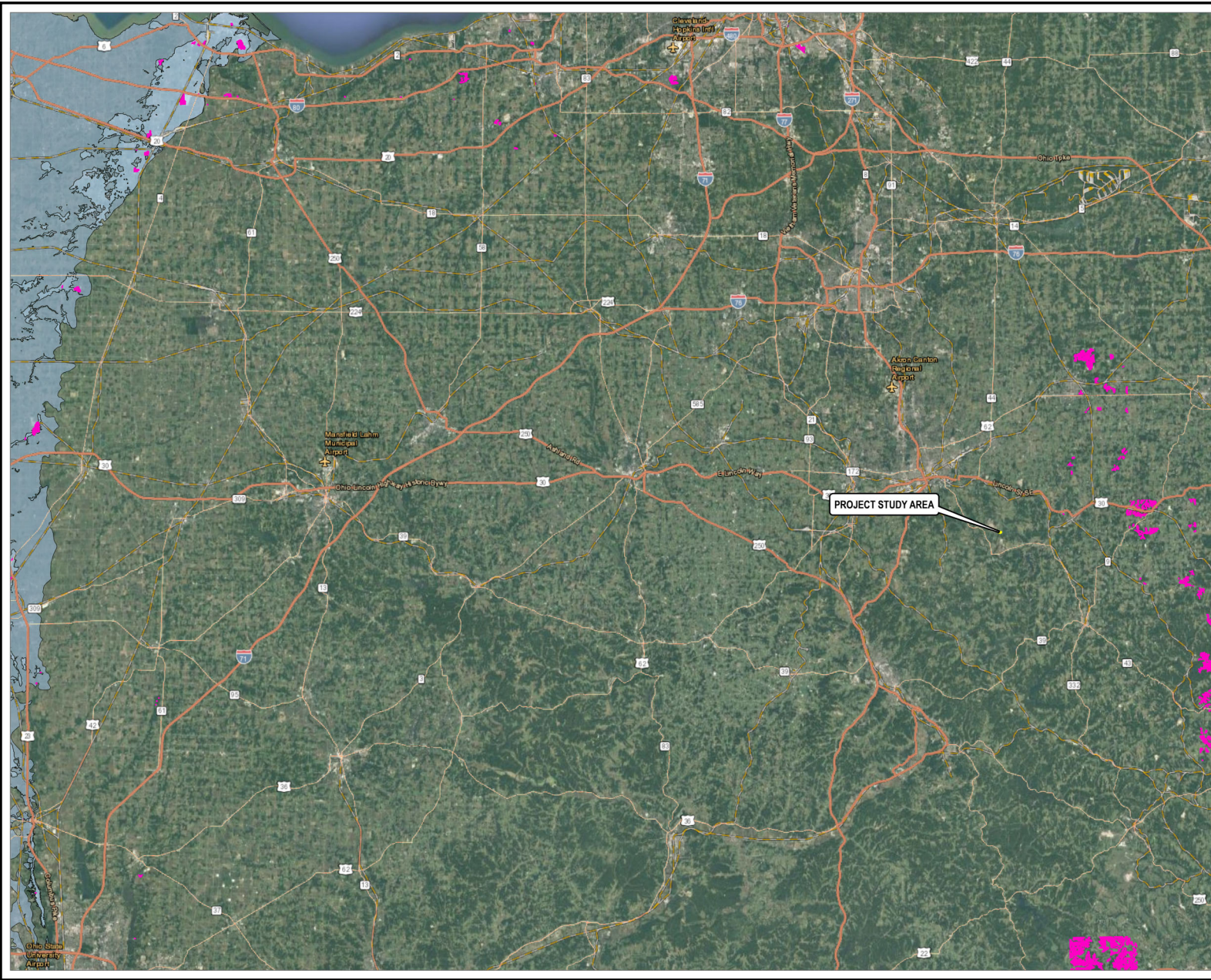
FILE: HIBERNACULAASSESSMENT





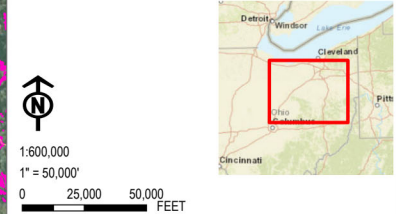


Coordinate System: NAD 1983 StatePlane Ohio North FIPS 3401 Feet - Map Rotation: 0  
 Source File: H:\Projects\429847\GIS\Map\_Series\429847\_004\_SammisSouth345KV\HibernaculaAssessment.aprx - Legend Name: EDC\_Maps.aprx



- PROJECT STUDY AREA
- MINE POLYGON FROM BEDROCK GEOLOGIC MAPS
- KARST GEOLOGY**
- SILURIAN- AND DEVONIAN-AGE CARBONATE BEDROCK OVERLAIN BY LESS THAN 20 FEET OF GLACIAL DRIFT AND/OR ALLUVIUM
- SILURIAN- AND DEVONIAN-AGE CARBONATE BEDROCK OVERLAIN BY MORE THAN 20 FEET OF GLACIAL DRIFT AND/OR ALLUVIUM

BASE MAP: GOOGLE MAPS.  
 DATA SOURCES: MINE/KARST DATA ACQUIRED FROM THE OHIO DEPARTMENT OF NATURAL RESOURCES.



PROJECT: <b>FIRSTENERGY SAMMIS-SOUTH CANTON LINE 345KV BANK STABILIZATION AT STRUCTURE 40182 PROJECT STARK COUNTY, OH</b>	
TITLE: <b>MINE/KARST MAP</b>	
DRAWN BY: M. OPEL	PROJ. NO.: 429847.0036
CHECKED BY: T. RADFORD	<b>FIGURE 4</b>
APPROVED BY: B. FALKINBURG	
DATE: DECEMBER 2022	
<span style="float: right; font-size: small;">1382 WEST NINTH STREET SUITE 400 CLEVELAND, OH 44113 PHONE: 216-344-3072</span>	
FILE:	HibernaculaAssessment.aprx



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Cleveland, OH 44113

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[TRCcompanies.com](http://TRCcompanies.com)

**APPENDIX B**  
**Photographic Record**

<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
------------------------------------	---	---

<b>Photo No. 1.</b>
<b>Photo Date:</b> 9/26/2022
<b>Description:</b>  Wetland W-MRR-1, facing north.



<b>Photo No. 2.</b>
<b>Photo Date:</b> 9/26/2022
<b>Description:</b>  Wetland W-MRR-1, facing east.



<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.</b> 429847.0036.0000
------------------------------------	---	--

<b>Photo No. 3.</b>
<b>Photo Date:</b> 9/26/2022
<b>Description:</b>  Wetland W-MRR-1, facing south.



<b>Photo No. 4.</b>
<b>Photo Date:</b> 9/26/2022
<b>Description:</b>  Wetland W-MRR-1, facing west.



<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
------------------------------------	---	---

**Photo No. 5.**

**Photo Date:**  
9/26/2022

**Description:**  
S-MRR-1 (Little Sandy Creek) looking upstream, facing east.



**Photo No. 6.**

**Photo Date:**  
9/26/2022

**Description:**  
S-MRR-1 (Little Sandy Creek) looking downstream, facing west.

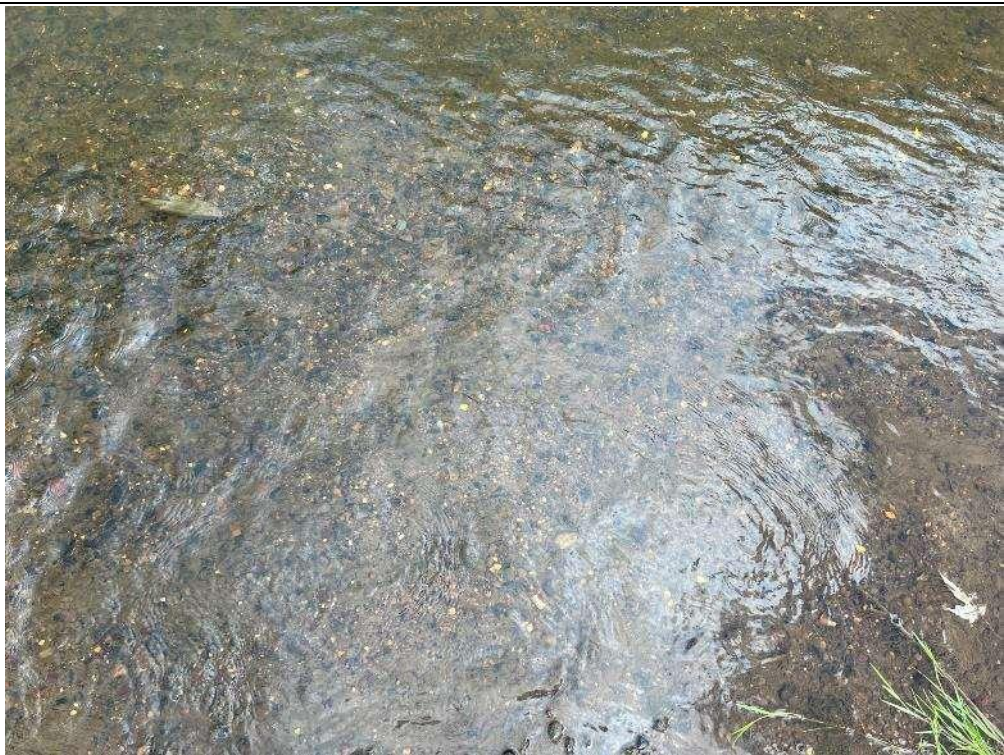


<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
------------------------------------	---	---

**Photo No. 7.**

**Photo Date:**  
9/26/2022

**Description:**  
View of the substrate within S-MRR-1 (Little Sandy Creek).



**Photo No. 8.**

**Photo Date:**  
9/26/2022

**Description:**  
S-MRR-2 looking upstream, facing southeast.





<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
------------------------------------	---	---

**Photo No. 9.**

**Photo Date:**  
9/26/2022

**Description:**  
S-MRR-2 looking downstream, facing northwest.



**Photo No. 10.**

**Photo Date:**  
9/26/2022

**Description:**  
View of the substrate within S-MRR-2.



<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
------------------------------------	---	---

**Photo No. 11.**

**Photo Date:**  
9/26/2022

**Description:**

Looking at the exposed foundation of Structure 40182 along the left descending bank of S-MRR-1, facing north.



**Photo No. 12.**

**Photo Date:**  
9/26/2022

**Description:**

Looking at the exposed foundation of Structure 40182 along the left descending bank of S-MRR-1, facing west.



## Ohio Mussel Habitat Assessment Form

**Project Information**

Project Name: Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Project  
 County: Stark Township: Sandy  
 Latitude (DD.DDDD): 40.707143 Longitude (DD.DDDD): -81.244454  
 Stream Name: Little Sandy Creek Group # (From Appendix A): Unlisted

**Methods**

Name of Surveyor(s): Tom Radford and Matthew Ray  
 Qualification of Surveyor(s):  USFWS Approved  ODNR Approved  Aquatic Biologist (minimum)  
 Date of Survey: 9/26/2022 Distance Surveyed (ft.): 600  
 Total Survey Time (min. x people): 90 x 2 Scientific Collector's Permit Number(s): SC220109

Note any deviations from the Ohio Mussel Habitat Assessment Methods :

**Habitat Description of Survey Area**

Drainage Area at Survey Location (mi<sup>2</sup>): 34.4 Water Temp. (°F): 62 Air Temp. (°F): 67

Substrate Types (include %):

<input type="checkbox"/> Boulder <u>    </u>	<input checked="" type="checkbox"/> Gravel <u>40</u>	<input type="checkbox"/> Bedrock <u>    </u>	<input type="checkbox"/> Detritus <u>    </u>	<input type="checkbox"/> Silt <u>    </u>
<input checked="" type="checkbox"/> Cobble <u>10</u>	<input checked="" type="checkbox"/> Sand <u>40</u>	<input type="checkbox"/> Hardpan <u>    </u>	<input checked="" type="checkbox"/> Muck <u>10</u>	<input type="checkbox"/> Artificial <u>    </u>

Water Level:  High  Up  Normal  Low  Dry/Interstitial

Visibility:  0-15 cm  15-30 cm  30-50 cm  >50 cm  Visible to Bottom

Average Depth (cm): Riffle 15 Run 35 Pool 75

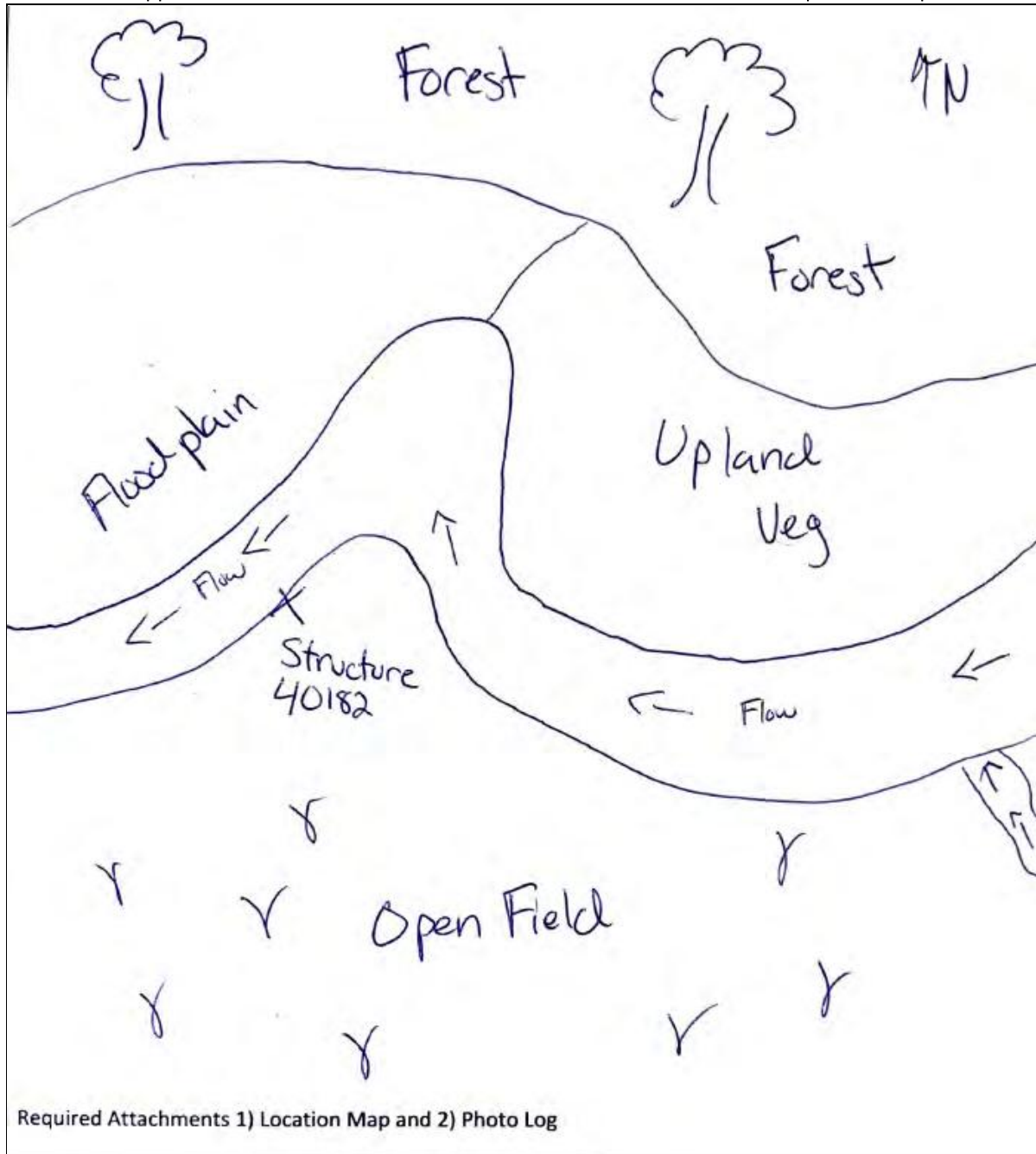
Max Depth (cm): Riffle 30 Run 50 Pool 90

**Results**

Evidence of Mussels: Presence of fresh dead mussel shells and living mussels will trigger a full mussel survey

- None
- Mussel Shell Only - Subfossil
- Mussel Shell Only - Weathered Dead
- Mussel Shell Only - Fresh Dead
- Living Mussels

Site Sketch. Approximate numbers and locations of shells and live mussels. Include species list if possible.



**From:** [John.Navarro@dnr.ohio.gov](mailto:John.Navarro@dnr.ohio.gov)  
**To:** [Radford, Thomas](#)  
**Cc:** [Falkinburg, Brad](#); [Ray, Matthew](#)  
**Subject:** [EXTERNAL] RE: FirstEnergy Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Mussel Reconnaissance Ohio Habitat Assessment Form  
**Date:** Thursday, September 29, 2022 9:12:50 AM  
**Attachments:** [image001.png](#)

---

This is an **EXTERNAL** email. Do not click links or open attachments unless you validate the sender and know the content is safe.

**ALWAYS** hover over the link to preview the actual URL/site and confirm its legitimacy.

Report accepted, project can proceed

**John Navarro**

Aquatic Stewardship Program Administrator  
Ohio Department of Natural Resources  
Division of Wildlife  
2045 Morse Rd, Columbus, Ohio 43229  
614-265-6346  
[John.navarro@dnr.state.oh.us](mailto:John.navarro@dnr.state.oh.us)

---

**From:** Radford, Thomas <TRadford@trccompanies.com>  
**Sent:** Wednesday, September 28, 2022 11:19 AM  
**To:** Navarro, John <John.Navarro@dnr.ohio.gov>  
**Cc:** Falkinburg, Brad <BFalkinburg@trccompanies.com>; Ray, Matthew <MRay@trccompanies.com>  
**Subject:** FirstEnergy Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Mussel Reconnaissance Ohio Habitat Assessment Form

Good morning John,

Please see the attached Ohio Habitat Assessment Form and accompanying documents for a mussel reconnaissance survey done for FirstEnergy's Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Project in Sandy Township, Stark County, Ohio.

Little Sandy Creek is an Unlisted stream according to the 2022 Ohio Mussel Survey Protocol. The survey met all the requirements for reconnaissance surveys in Appendix B of the 2022 Protocol. The drainage area at the location is 34.4 mi<sup>2</sup>. Please see the attached for further information on the stream and mussel reconnaissance effort.

During a total of 180 minutes of searching no live mussels or mussel shells were observed within the Study Area for the above mentioned Project.

TRC is requesting written concurrence that a Group 1 mussel survey is not required at this location.

Best,

**Tom Radford**

Biologist/ Field Ecologist  
Planning, Permitting, and Licensing



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# 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



November 4, 2022

Re: Sammis-South Canton Line 345kV Bank Stabilization

Project Code: 2023-0000534

Dear Ms. Slabe:

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

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

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

Sincerely,

Patrice Ashfield  
Field Office Supervisor



# Surface Water Delineation Report

**Sammis-South Canton Line 345kV  
Bank Stabilization at Structure  
40182 Project**

**November 10, 2022**

**Sandy Township, Stark County, Ohio**

Prepared For:



**FirstEnergy Corporation**  
341 White Pond Drive, Building B3  
Akron, Ohio 44320

Prepared By:  
**TRC Companies, Inc.**  
1382 West Ninth Street, Suite 400  
Cleveland, Ohio 44113

TRC Project Number: 429847.0036.0000





## TABLE OF CONTENTS

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>1</b>
<b>2.0</b>	<b>METHODOLOGY.....</b>	<b>1</b>
2.1	Wetland Parameters .....	1
2.1.1	Hydrology .....	2
2.1.2	Hydric Soils .....	2
2.1.3	Hydrophytic Vegetation .....	2
2.2	USACE Wetland Delineation .....	3
2.3	Ohio Environmental Protection Agency’s Ohio Rapid Assessment Method.....	4
2.4	USACE Waterbody Identification .....	4
<b>3.0</b>	<b>RESULTS .....</b>	<b>5</b>
3.1	Site Description .....	5
3.2	Surface Water Resource Field Delineations .....	6
3.2.1	Wetlands .....	6
3.2.2	Waterbodies .....	7
<b>4.0</b>	<b>PERMITTING CONSIDERATIONS .....</b>	<b>8</b>
4.1	USACE Verification .....	8
<b>5.0</b>	<b>LIMITATIONS .....</b>	<b>8</b>
<b>6.0</b>	<b>REFERENCES.....</b>	<b>9</b>

### TABLES

Table 1. Soils Type Summary .....	6
Table 2. Delineated Wetland Features Summary Table .....	7
Table 3. Waterbody Resource Details.....	7

### APPENDICES

- Appendix A Figures
- Appendix B Photographic Record
- Appendix C Data Forms

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## ACRONYMS AND DEFINITIONS

CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FirstEnergy	FirstEnergy Corporation
GIS	Geographic Information Systems
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
HUC	Hydrologic Unit Code
NHD	National Hydrography Dataset
NWI	National Wetlands Inventory
OAC	Ohio Administrative Code
OBL	Obligate Wetland
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary High Water Mark
ORAM	Ohio Rapid Assessment Method
Project	Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Project
Project Study Area	4.41-acres, located in Sandy Township, Stark County, Ohio
QHEI	Qualitative Habitat Evaluation Index
Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0)
Report	Surface Water Delineation Report
TNM	The National Map
TRC	TRC Companies, Inc.
UPL	Obligate Upland
USACE	United States Army Corps of Engineers
USDA-NRCS	United States Department of Agriculture – Natural Resources Conservation Service
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WQC	Water Quality Certification
1987 Manual	United States Army Corps of Engineers 1987 Wetland Delineation Manual

---

## 1.0 Introduction

On behalf of FirstEnergy Corporation (FirstEnergy), TRC Companies, Inc. (TRC) performed a surface water delineation for the Sammis-South Canton Line 345kV Bank Stabilization at Structure 40182 Project (Project). The proposed Project Study Area is approximately 4.41-acres, located in Sandy Township, Stark County, Ohio. The proposed Project involves the stabilization of sever erosion along the left descending bank of Little Sandy Creek, which has the potential to undermine the integrity of Structure 40182. On behalf of FirstEnergy, TRC has prepared this Surface Water Delineation Report (Report) for the Project. A site location map of the Project Study Area can be found in **Appendix A, Figure 1**.

On September 26, 2022, TRC personnel performed field investigations to evaluate and delineate surface water resources (i.e., wetlands and streams) located within the Project Study Area. The delineations were conducted by qualified wetland scientists in accordance with the United States Army Corps of Engineers (USACE) parameters. The objective was to evaluate and delineate potential surface water resources within the Project Study Area, such that the resources could be considered during each phase of the Project. This Report describes the surface water delineation methodology implemented and the existing surface water resources identified within the Project Study Area during field investigations.

The Project Study Area is located at the following approximate centroid coordinates: 40.707069, -81.244218; located in Sandy Township, Stark County, Ohio. The Project Study Area occurs within maintained utility right-of-way. **Appendix A, Figure 1** and **Figure 2**, provides further information on the location of the proposed Project Study Area.

## 2.0 Methodology

To complete the surface water delineation and evaluation of the Project Study Area, TRC followed the guidelines and methods outlined by the USACE and Ohio Environmental Protection Agency (OEPA), as described within this section.

### 2.1 Wetland Parameters

The *USACE 1987 Wetland Delineation Manual (1987 Manual)* (USACE, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0) (Regional Supplement)* (USACE, 2012), and the March 6, 1992 guidance memorandum (Williams, 1992) emphasize a three parameter approach to wetland boundary determination in the field. This approach involves the following:

- i. Evidence of wetland hydrology;
- ii. Presence of hydric soils; and
- iii. Predominance of hydrophytic vegetation as defined by *The National Wetland Plant List: 2020 Wetland Ratings* (USACE, 2020).

Positive indicators of all three parameters are normally present in wetlands and serve to distinguish between both dry land and transitional plant communities.

### **2.1.1 Hydrology**

The *1987 Manual and Regional Supplement* provides guidelines for determining the presence of wetland hydrology. Criteria for wetland hydrology are met if the area is inundated or saturated at the soil surface during the growing season for a time sufficient to develop hydric soils and to support hydrophytic vegetation.

### **2.1.2 Hydric Soils**

Hydric soils are defined as soils “that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil” (Federal Register, 1994). Hydric soil indicators described in the *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils Version 8.2* (USDA, NRCS, 2018) were used to identify and document hydric soils as described in the *Regional Supplement*.

### **2.1.3 Hydrophytic Vegetation**

To determine the presence of hydrophytic vegetation, the dominant and non-dominant species in each major vegetative stratum (e.g., tree, shrub/sapling, herbaceous, and woody vine) were identified and recorded.

Plants are placed into indicator status categories depending on their probability of occurring in a wetland in accordance with the USACE’s *The National Wetland Plant List: 2020 wetland ratings* (USACE, 2020). There are five indicator status categories for plants:

1. Obligate wetland plants (OBL): plants that occur almost always (>99%) in wetlands in natural conditions, but which may also occur rarely (<1%) in non-wetlands;
2. Facultative wetland plants (FACW): plants that occur usually (>67-99%) in wetlands but also occur (1-33%) in non-wetlands;
3. Facultative plants (FAC): plants with a similar likelihood (33-67%) of occurring in both wetlands and non-wetlands;
4. Facultative upland plants (FACU): plants that occur sometimes (1-<33%) in wetlands, but occur more often (>67-99%) in non-wetlands; and
5. Obligate upland plants (UPL): plants that occur rarely (<1%) in wetlands but occur almost always (>99%) in non-wetlands under natural conditions.

A prevalence of dominant species that are FAC, FACW, and/or OBL indicates the presence of hydrophytic vegetation.

---

## 2.2 USACE Wetland Delineation

Qualified wetland scientists from TRC conducted surface water field investigations on September 26, 2022. The surface water field investigations were conducted within the predetermined Project Study Area (**Appendix A, Figure 1**) that was developed in accordance with the Project location information provided by FirstEnergy. Surface water delineations were conducted using the Federal Routine Determination Method presented in the *1987 Manual* and *Regional Supplement*, including clarifications and interpretations provided in the March 6, 1992 guidance memorandum, and the USACE and Environmental Protection Agency (EPA) guidance on jurisdictional forms (EPA and USACE, 2007 and USACE, 2008).

Hydrology was determined based on a number of indicators that are divided into two categories, primary and secondary. The *1987 Manual* defines hydrology as present when at least one primary indicator (i.e., surface water, saturation, etc.) or two secondary indicators (i.e., geomorphic position, stunted or stressed plants, etc.) are identified. One primary indicator is sufficient to determine if hydrology is present; however, if these are absent then two or more of the secondary indicators are required to determine hydrology. If other probable hydrologic evidence was found, then this was subsequently documented on the data form.

Soils were examined in the field by using a tile spade, generally to a depth of at least 22 inches below the soil surface or until refusal, whichever was shallower. Soil coloration was identified using a *Munsell Soil Color Chart* (Munsell Color Company, 2009). Other characteristics, such as the presence of redoximorphic (Redox) concentrations and depletions and soil texture were also recorded. Redox concentrations and depletions are created when the soil is saturated and has anaerobic conditions (without oxygen gas) which leads to changes in the chemical processes in the soil that produce visible color changes in the soil. Hydric characteristics such as organic soil layers, depleted matrix, gleying, and hydrogen sulfide odor, were noted when observed. Soils at both wetland (if present) and dry land data plot locations were characterized and recorded on the data form.

The presence of hydrophytic vegetation was determined using the procedures described in the *Regional Supplement* and recorded on the data form. Vegetation in both dry land and wetland communities was characterized using a real dominance method, with a radius of 30-feet around the soil sample location for trees and woody vines, 15-foot radius for saplings and shrubs, and a 5-foot radius for herbaceous plants. Plant communities meeting the “50/20” Rule or meeting one of the other indicators set forth in the *1987 Manual*, *Regional Supplement*, and guidance memorandums are considered hydrophytic for the purposes of the wetland classification criteria. In areas where the vegetation was disturbed or not identifiable due to seasonal conditions, soil and hydrology characteristics, and professional judgment/experience were utilized in assessing the primary determining factors for classification as wetlands.

If the soils, hydrology, and vegetation characteristics at a survey point indicated that it was within a wetland, the boundary of the wetland was determined, and the approximate boundary was flagged using wetland flagging and recorded using a handheld Juniper Systems Geode with sub-meter accuracy. Areas observed to have problematic or difficult situations were delineated

utilizing the procedures identified in the *Regional Supplement*, Section 5 – “Difficult Wetland Situations in the Eastern Mountains and Piedmont Region.” Data from the Global Positioning System (GPS) survey was downloaded and integrated into a Geographic Information System (GIS) database for the proposed work areas and used to make the accompanying figures. Identified wetlands were classified according to Cowardin et al. (Cowardin, Carter, Golet, & LaRoe, 1979). Photographs are included in **Appendix B**.

### **2.3 Ohio Environmental Protection Agency’s Ohio Rapid Assessment Method**

According to the Ohio Wetland Water Quality Standards, a wetland quality category (Category 1, Category 2, or Category 3) must be assigned for each wetland if a project will require discharge of dredged or fill material into jurisdictional wetlands. In general, Category 1 wetlands are considered to be of “low quality”, Category 2 wetlands are considered to be of “moderate quality” and Category 3 wetlands are considered to be of “high quality.”

The OEPA has developed the Ohio Rapid Assessment Method (ORAM), which can be utilized to evaluate wetland habitat quality based on the apparent functions and values of the wetland resource. The two primary components of the ORAM are the Narrative Rating and the Quantitative Rating. Each delineated wetland resource received a provisional category designation based on the results of the ORAM Narrative and Quantitative Ratings and review of narrative criteria in the Ohio Administrative Code (OAC) 3745-1-54(C) (Mack, 2000).

### **2.4 USACE Waterbody Identification**

During field investigations, other waterbody features including streams, ponds, lakes, etc. were investigated. Streams within the Project Study Area were identified by the presence of an ordinary high water mark (OHWM) and scoured channel or defined bed and banks. All streams identified in the Project Study Area that were wider than five feet were demarcated via GPS from bank-to-bank. Streams that were less than five feet wide had the centerline demarcated.

Identified streams were evaluated utilizing OEPA approved methods for stream habitat assessment which include the Qualitative Habitat Evaluation Index (QHEI) (Ohio EPA, 2006) and/or the Headwater Habitat Evaluation Index (HHEI) (Ohio EPA, 2020) assessment method. These approved assessment methods provide an empirical, quantified evaluation of streams as required by the State of Ohio for permitting and mitigation purposes. These methods assess stream habitat to provide a qualitative index (or score) to determine the level of compensatory mitigation that may be needed for impacts to waters of the U.S. (i.e., streams).

Use of the QHEI or HHEI assessment method is determined based on the size of the stream’s drainage area and/or the stream’s pool depths. Where coverage was available, the drainage area was calculated using automated basin characteristics from StreamStats v 4.10.1: Ohio (USGS, 2021).

Following OEPA guidance, streams with a drainage area of greater than 1.0 square mile (2.6 square kilometers) or which have pools with maximum depths over 15.8 inches (40.0 centimeters), as determined by measuring pool depth within the stream, were evaluated using

the QHEI. Data on these streams were collected on the QHEI form provided by the OEPA. The QHEI is composed of six principal metrics: substrate, instream cover, channel morphology, riparian zone and bank erosion, pool/glide and riffle-run quality, and map gradient. Each metric is scored separately and summed to obtain the total QHEI score. Using the scoring methods associated with these forms, the stream is placed into the following general narrative ranges, dependent on stream size; for smaller streams ( $\leq 20$  sq. mi): Excellent  $>70$ , Good 55-69, Fair 43-54, Poor 30-42, and Very Poor  $<30$ ; for larger streams ( $>20$  sq. mi): Excellent  $>75$ , Good 60-74, Fair 45-59, Poor 30-44, and Very Poor  $<30$ .

The HHEI was utilized to score streams with a drainage area of  $<1.0$  square mile (2.6 square kilometers). Data on these streams were collected on the HHEI forms, provided by the OEPA. Observational data regarding the physical nature of the stream corridor including stream flow, riparian zone land use and buffer width, and channel modification were recorded. Measurements included bankfull width, maximum pool depth and substrate composition.

Streams identified during the course of the investigation were classified as perennial, intermittent, or ephemeral waterways in accordance with the rationale defined by the USACE Huntington District.

The Project Study Area was also investigated for areas that were considered “open water” by the USACE. According to the USACE an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” may include rivers, lakes, and ponds. Artificial “open water” features may include stormwater retention basins, fish hatchery ponds, drainage tile pump stations, etc.

## 3.0 Results

### 3.1 Site Description

The Project Study Area is approximately 4.41-acres located in Sandy Township, Stark County, Ohio; within the Little Sandy Creek watershed (12-Digit Hydrologic Unit Code [HUC]: 050400010604) (USGS, 2022).

The Project Study Area is shown on the Malvern, Ohio (2019) United States Geological Survey (USGS) 7.5-minute series topographic quadrangle (**Appendix A, Figure 1**).

There are three (3) United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) features mapped within the Project Study Area, including two (2) riverine features and one (1) freshwater forest/shrub wetland (**Appendix A, Figure 3**) (USFWS, 2022).

The USGS National Hydrography Dataset (NHD) (USGS, 2018) Downloadable Data Collection from The National Map (TNM) is a comprehensive set of digital spatial data that encodes information about naturally occurring and constructed bodies of surface water (e.g., lakes, ponds, and reservoirs), paths through which water flows (e.g., canals, ditches, streams, and rivers) and

related entities such as point features (e.g., springs, wells, stream gages, and dams). There is one (1) NHD stream mapped within the Project Study Area (**Appendix A, Figure 3**).

According to Federal Emergency Management Agency Flood Insurance Rate Map (39151C0405E; eff. 9/29/2011), the proposed Project is located within a regulated 100-year floodplain (**Appendix A, Figure 3**) (FEMA, 2021).

The United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey (USDA-NRCS, 2016) was used to identify the soil types contained within the Project Study Area (**Appendix A, Figure 4**). **Table 1** provides a summary of the soils identified within proposed Project Study Area.

**Table 1. Soils Type Summary**

Map Unit Symbol	Map Unit Name	Hydric Status	Acres Within Study Area	Percent Cover in Study Area
CpB	Chili silt loam, 2 to 6 percent slopes	Non-Hydric	0.15	3.3%
PIB	Plainfield loamy sand, 0 to 6 percent slopes	Non-Hydric	0.32	7.3%
Wd	Wayland silt loam	Hydric	1.00	22.8%
Sh	Shoals silt loam	Non-Hydric with Hydric Inclusions	2.94	66.6%
<b>TOTAL</b>			<b>4.41</b>	<b>100%</b>
<b>Notes:</b> Accessed online September 2022 at: <a href="http://websoilsurvey.sc.egov.usda.gov">http://websoilsurvey.sc.egov.usda.gov</a> .				

### 3.2 Surface Water Resource Field Delineations

TRC performed the field investigation on September 26, 2022. Weather conditions were normal for the season, with temperatures ranging between 54 degrees to 64 degrees Fahrenheit, and partly cloudy skies. Native and non-native herbaceous vegetation was observed within the Project Study Area. The USACE maintains the final authority that determines jurisdiction; therefore, statements about jurisdiction within this Report are preliminary and subject to final determination by the USACE and OEPA.

#### 3.2.1 Wetlands

During the field investigation, one (1) wetland was identified and delineated within the Project Study Area. The delineated wetland boundaries and sample points are shown on Figure 5 in **Appendix A**. Representative photographs of sample points and other areas of interest are provided in **Appendix B**. Data was collected and recorded on the USACE Wetland Determination Data Forms – Eastern Mountains and Piedmont (**Appendix C**) and wetland functional assessments were completed for each delineated wetland using the ORAM (**Appendix C**). Delineated wetlands within the Project Study Area are summarized in **Table 2**.



**Table 2: Delineated Wetland Features Summary Table**

Resource ID <sup>1</sup>	Cowardin Classification <sup>2</sup>	Connection <sup>3</sup>	Provisional Jurisdictional Status <sup>4</sup>	ORAM Score	ORAM Category <sup>5</sup>	Approximate Delineated Area within Project Study Area <sup>6</sup> (acres)
W-MRR-1	PEM	Abutting	USACE Jurisdictional, Wetland	42	Cat. 2	0.75
					<b>Total</b>	<b>0.75</b>

<sup>1</sup> TRC resource identification.  
<sup>2</sup> Cowardin Wetland Classification (approximation based upon field identification and delineation) (Cowardin, Carter, Golet, & LaRoe, 1979): PEM – Palustrine Emergent, PSS – Palustrine Scrub-Shrub, PFO – Palustrine Forested  
<sup>3</sup> Connection to a jurisdictional waterway: Isolated, Abutting, or Adjacent as determined by TRC; subject to USACE verification.  
<sup>4</sup> Jurisdiction status is based upon field observations and mapping review of apparent connectivity or adjacency of the resource to Waters of the United States and the assumption that a preliminary jurisdictional determination process will be utilized for the project.  
<sup>5</sup> ORAM Category based on scoring breakpoints from Table 2 of the ORAM v. 5.0 Quantitative Score Calibration; scores falling within a “gray zone” or “modified” category were rounded up.  
<sup>6</sup> Area is rounded to nearest 0.01-acre, based upon GPS data.

### 3.2.2 Waterbodies

During the field investigations, two (2) streams were delineated within the Project Study Area. A detailed summary of the waterbody resources identified is provided in **Table 3** and **Appendix A, Figure 5**. Data points were recorded to provide a characterization of the delineated waterbody resources located within the Project Study Area, which were recorded on the OEPA HHEI and QHEI data forms. HHEI and QHEI data forms are provided within **Appendix C**. Representative photographs of the described waterbodies identified within the Project Study Area can be found in **Appendix B**.

**Table 3. Waterbody Resource Details**

Waterbody ID <sup>1</sup>	Resource Name	Flow Regime	OEPA Use Designation <sup>2</sup>	Existing Use Designation <sup>3</sup>	HHEI Score <sup>4</sup>	QHEI Score <sup>5</sup>	Approximate Delineated Area within Project Study Area <sup>6</sup> (acres)
S-MRR-1	Little Sandy Creek	Perennial	WWH	-	-	55.5	0.46
S-MRR-2	UNT To Little Sandy Creek	Intermittent	-	Modified Class II PHWH	32	-	0.01
						<b>TOTAL</b>	<b>0.47</b>

**Notes:**  
<sup>1</sup> TRC resource identification.  
<sup>2</sup> Determined by OEPA and listed in OAC §3745-1-24 Muskingum River drainage basin.  
<sup>3</sup> Determined by TRC, subject to verification by Ohio EPA.  
<sup>4</sup> HHEI, for streams with drainage areas of less than 1.0 square mile and a maximum pool depth of less than 40 centimeters.  
<sup>5</sup> QHEI, for streams with drainage areas of greater than 1.0 square mile and a maximum pool depth greater than 40 centimeters.  
<sup>6</sup> Area is rounded to nearest 0.01-acre, based upon GPS data. Resources comprising <0.01-acre are tabulated within the total as 0.01-acre.

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## 4.0 Permitting Considerations

It is anticipated that due to the nature of the Project, Little Sandy Creek will be impacted by the proposed Project activities. As currently proposed, it is TRC's understanding that this Project falls under Nationwide Permit 13 – Bank Stabilization (February 23, 2022 NWP). This Project is located in Sandy Township, Stark County, Ohio, which is within the USACE Huntington Regulatory District. Sandy Township in Stark County is not listed in Appendix 1 to Regional General Condition 5(a) (Endangered Species and Threatened Species) triggering the need for Section 404 Pre-Construction Notification (PCN) assuming the NWP 13 thresholds are met and not exceeded.

The Project is located within an “Eligible” area according to Ohio EPA’s Stream Eligibility for Nationwide Permit Program (OEPA, 2017) and therefore is eligible for coverage under the OEPA 401 Water Quality Certification (WQC) for Nationwide Permits (**Appendix A, Figure 6**).

### 4.1 USACE Verification

The USACE has the authority to determine and/or verify the geographical boundaries of Waters of the United States in accordance with 33 Code of Federal Regulations (CFR) 328 and 33 CFR 329; therefore, the results of this Report are termed “preliminary” until verified and accepted by the USACE. This verification is part of the Jurisdictional Determination process, which is required for approval under Section 404 Clean Water Act, Section 401 WQC, and/or isolated wetland permitting process through OEPA. It is the responsibility of any party that intends to discharge dredge or fill material into Waters of the United States to comply with all applicable regulations.

## 5.0 Limitations

This Report is limited in scope to the specific terms of the Agreement previously entered into between TRC and FirstEnergy. This Report represents the conditions within the Project Study Area identified herein, as of the inspection dates.

Should the Project change from the scope described herein, TRC should be immediately notified such that additional investigations may be conducted to amend the content of the Report herein. Human-induced and/or natural changes within the Project Study Area may occur after the date of this investigation and may result in changes to the presence, extent, and classification of the surface water resources identified within this Report.

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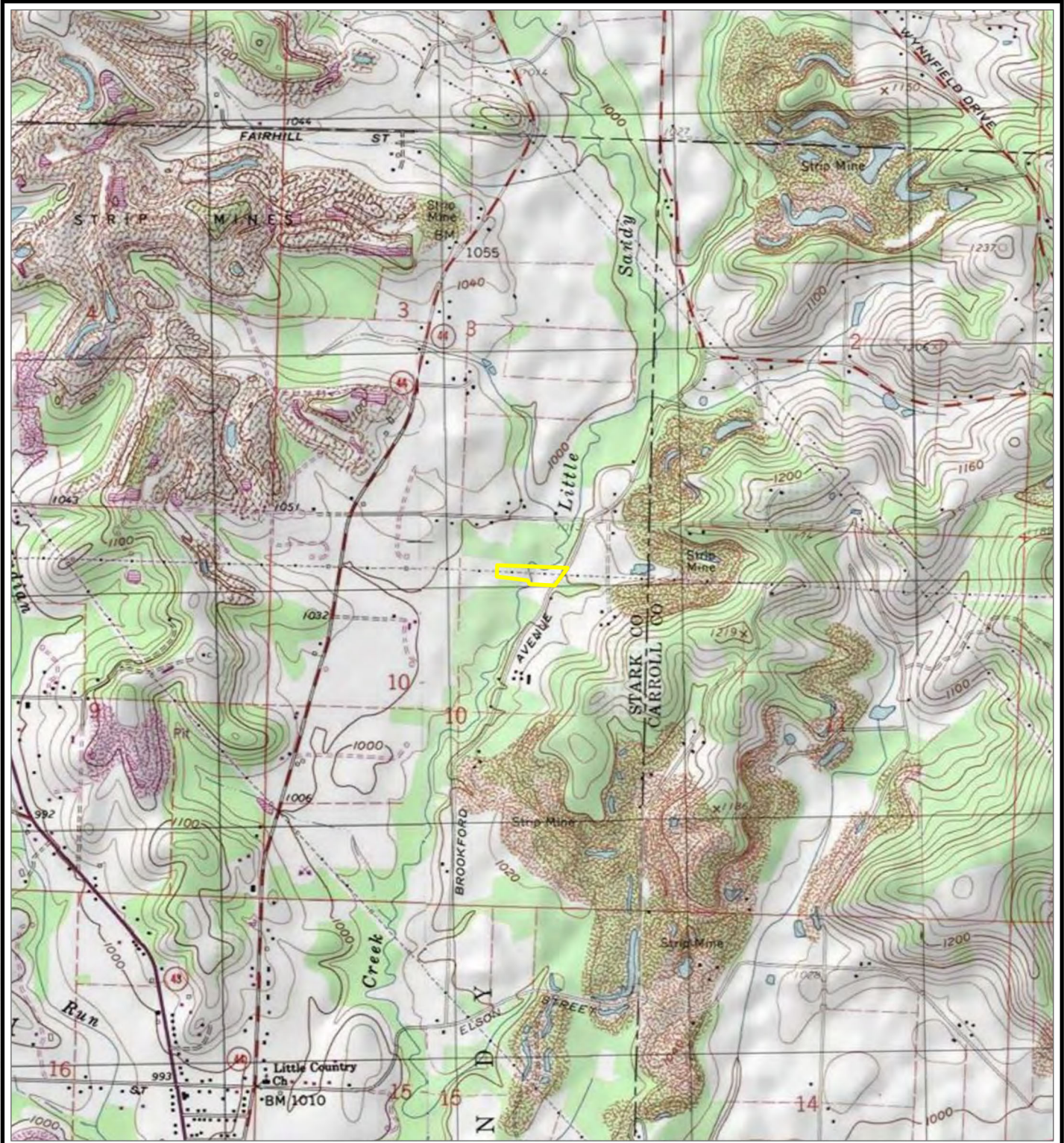
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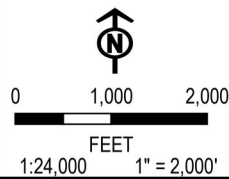
## **Appendix A**

### **Figures**

COORDINATE SYSTEM: NAD 1983 STATEPLANE OHIO NORTH FIPS 3401 FEET, MAP ROTATION: 0  
 -- SAVED BY: MOPEL ON 9/30/2022, 15:13:42 PM, FILE PATH: T:\1-PROJECTS\FIRST\_ENERGY\429847\_0036\_SAMMISSCANTON\2-APRX\WDR.APRX, LAYOUT NAME: FIG01\_SLM



 PROJECT STUDY AREA



BASE MAP: USA TOPO MAPS MAP SERVICE, MALVERN QUAD  
 DATA SOURCES: TRC

PROJECT: **FIRSTENERGY**  
**SAMMISS-SOUTH CANTON LINE 345KV BANK**  
**STABILIZATION AT STRUCTURE 40182 PROJECT**

TITLE: **SITE LOCATION MAP**

DRAWN BY: M. OPEL	PROJ. NO.: 429847.0036
CHECKED BY: M. RAY	<b>FIGURE 1</b>
APPROVED BY: B. FALKINBURG	
DATE: SEPTEMBER 2022	



1382 WEST NINTH STREET  
 SUITE 400  
 CLEVELAND, OH 44113  
 PHONE: 216-344-3072

FILE: \_\_\_\_\_ WDR













## **Appendix B**

### **Photographic Record**

<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
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<b>Photo No. 1.</b>
<b>Photo Date:</b> 9/26/2022
<b>Description:</b>  Wetland W-MRR-1, facing north.



<b>Photo No. 2.</b>
<b>Photo Date:</b> 9/26/2022
<b>Description:</b>  Wetland W-MRR-1, facing east.



<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
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**Photo No. 3.**

**Photo Date:**  
9/26/2022

**Description:**  
Wetland W-MRR-1,  
facing south.



**Photo No. 4.**

**Photo Date:**  
9/26/2022

**Description:**  
Wetland W-MRR-1,  
facing west.



<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
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**Photo No. 5.**

**Photo Date:**  
9/26/2022

**Description:**  
S-MRR-1 (Little Sandy Creek) looking upstream, facing east.



**Photo No. 6.**

**Photo Date:**  
9/26/2022

**Description:**  
S-MRR-1 (Little Sandy Creek) looking downstream, facing west.



<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
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**Photo No. 7.**

**Photo Date:**  
9/26/2022

**Description:**  
View of the substrate within S-MRR-1 (Little Sandy Creek).



**Photo No. 8.**

**Photo Date:**  
9/26/2022

**Description:**  
S-MRR-2 looking upstream, facing southeast.





<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
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**Photo No. 9.**

**Photo Date:**  
9/26/2022

**Description:**  
S-MRR-2 looking downstream, facing northwest.



**Photo No. 10.**

**Photo Date:**  
9/26/2022

**Description:**  
View of the substrate within S-MRR-2.



<b>Client Name:</b> FirstEnergy	<b>Site Location:</b> Sandy Township, Stark County, Ohio	<b>Project No.:</b> 429847.0036.0000
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**Photo No. 11.**

**Photo Date:**  
9/26/2022

**Description:**

Looking at the exposed foundation of Structure 40182 along the left descending bank of S-MRR-1, facing north.



**Photo No. 12.**

**Photo Date:**  
9/26/2022

**Description:**

Looking at the exposed foundation of Structure 40182 along the left descending bank of S-MRR-1, facing west.



## **Appendix C**

### **Data Forms**



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**USACE Wetland Determination Data Forms – Eastern Mountains and  
Piedmont Region**

Project/Site: FE Sammis-South Canton Line 345kV Project City/County: Stark County Sampling Date: 9/26/2022  
 Applicant/Owner: FirstEnergy State: OH Sampling Point: W-MRR-1  
 Investigator(s): Matthew Ray; PWS, Tom Radford Section, Township, Range: Section 10, T17N, R7W  
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR or MLRA): LRR N, MLRA 124 Lat: 40.707088 Long: -81.245345 Datum: WGS1984  
 Soil Map Unit Name: Wayland silt loam (Wd) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation N, Soil N, or Hydrology N 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 <u>X</u> No <u>    </u> Hydric Soil Present? Yes <u>X</u> No <u>    </u> Wetland Hydrology Present? Yes <u>X</u> No <u>    </u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No <u>    </u>
Remarks: 3 of 3 criterion have been met. Area is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators</u> (minimum of one is required; check all that apply)	<u>Secondary Indicators</u> (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No <u>    </u>
--	---

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

Remarks:  
 Hydrology criterion has been met.

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: W-MRR-1

Tree Stratum (Plot size: <u>30ft radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>100</u></td> <td>x 2 = <u>200</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>200</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>2.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>100</u>	x 2 = <u>200</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>200</u> (B)	Prevalence Index = B/A = <u>2.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>100</u>	x 2 = <u>200</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>200</u> (B)																			
Prevalence Index = B/A = <u>2.00</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15ft radius</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
=Total Cover				<b>Definitions of Four Vegetation Strata:</b> <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.																
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5ft radius</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>50</u>		20% of total cover: <u>20</u>																		
Woody Vine Stratum (Plot size: <u>30ft radius</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation criterion has been met.																				

**SOIL**

Sampling Point: W-MRR-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-18	10YR 3/2	95	10YR 5/6	5	C	M	Loamy/Clayey	Prominent redox concentrations
18-22	10YR 5/2	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?      Yes X      No \_\_\_\_\_

Remarks:

Hydric soil criterion has been met.

Project/Site: FE Sammis-South Canton Line 345kV Project City/County: Stark County Sampling Date: 9/26/2022  
 Applicant/Owner: FirstEnergy State: OH Sampling Point: U-MRR-1  
 Investigator(s): Matthew Ray; PWS, Tom Radford Section, Township, Range: Section 10, T17N, R7W  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): LRR N, MLRA 124 Lat: 40.707217 Long: -81.245717 Datum: WGS1984  
 Soil Map Unit Name: Wayland silt loam (Wd) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation N, Soil N, or Hydrology N 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 <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: 0 of 3 criterion have been met. Area is a not wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Hydrology criterion has not been met.	



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: U-MRR-1

Tree Stratum (Plot size: <u>30ft radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>15ft radius</u> )				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: center;">Total % Cover of:</td> <td style="width:50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>400</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>400</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>100</u>	x 4 = <u>400</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>400</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Herb Stratum (Plot size: <u>5ft radius</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Lolium perenne</u>	100	Yes	FACU																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																				
Woody Vine Stratum (Plot size: <u>30ft radius</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<b>Hydrophytic Vegetation Present?</b> Yes _____      No <u>X</u>																				
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation criterion has not been met.																				

**SOIL**

Sampling Point: U-MRR-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-22	10YR 3/3	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?      Yes       No

Remarks:

Hydric soil criterion has not been met.

Project/Site: FE Sammis-South Canton Line 345kV Project City/County: Stark County Sampling Date: 9/26/2022  
 Applicant/Owner: FirstEnergy State: OH Sampling Point: DP-TJR-1  
 Investigator(s): Matthew Ray; PWS, Tom Radford Section, Township, Range: Section 10, T17N, R7W  
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 1  
 Subregion (LRR or MLRA): LRR N, MLRA 124 Lat: 40.706938 Long: -81.244592 Datum: WGS1984  
 Soil Map Unit Name: Wayland silt loam (Wd) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No      (If no, explain in Remarks.)  
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No       
 Are Vegetation N, Soil N, or Hydrology N 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 <u>    </u> No <u>X</u> Hydric Soil Present? Yes <u>    </u> No <u>X</u> Wetland Hydrology Present? Yes <u>    </u> No <u>X</u>	<b>Is the Sampled Area within a Wetland?</b> Yes <u>    </u> No <u>X</u>
Remarks: 0 of 3 criterion have been met. Area is a not wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ True Aquatic Plants (B14) ___ High Water Table (A2)      ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)      ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)      ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
---	--

<b>Field Observations:</b> Surface Water Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Water Table Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> Saturation Present? Yes <u>    </u> No <u>X</u> Depth (inches): <u>    </u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>    </u> No <u>X</u>
--	---

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

Remarks:  
 Hydrology criterion has not been met.



**SOIL**

Sampling Point: DP-TJR-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-22	10YR 3/3	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?      Yes       No

Remarks:

Hydric soil criterion has not been met.

Project/Site: FE Sammis-South Canton Line 345kV Project City/County: Stark County Sampling Date: 9/26/2022  
 Applicant/Owner: FirstEnergy State: OH Sampling Point: DP-TJR-2  
 Investigator(s): Matthew Ray; PWS, Tom Radford Section, Township, Range: Section 10, T17N, R7W  
 Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 2  
 Subregion (LRR or MLRA): LRR N, MLRA 124 Lat: 40.707136 Long: -81.243759 Datum: WGS1984  
 Soil Map Unit Name: Wayland silt loam (Wd) NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: 1 of 3 criterion have been met. Area is a not wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
--	---

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

Remarks:  
 Hydrology criterion has not been met.

**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DP-TJR-2

<u>Tree Stratum</u> (Plot size: <u>30ft radius</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: center;">Total % Cover of:</td> <td style="width:50%; text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>220</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.20</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>220</u> (B)	Prevalence Index = B/A = <u>2.20</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>80</u>	x 2 = <u>160</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>220</u> (B)																			
Prevalence Index = B/A = <u>2.20</u>																				
50% of total cover: _____ 20% of total cover: _____																				
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15ft radius</u> )				<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
<u>Herb Stratum</u> (Plot size: <u>5ft radius</u> )				<b>Definitions of Four Vegetation Strata:</b> <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.																
1. <u>Phalaris arundinacea</u>	<u>80</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Verbesina alternifolia</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																				
<u>Woody Vine Stratum</u> (Plot size: <u>30ft radius</u> )				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Remarks: (Include photo numbers here or on a separate sheet.) Vegetation criterion has been met.																				

**SOIL**

Sampling Point: DP-TJR-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-22	10YR 3/3	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?      Yes       No

Remarks:

Hydric soil criterion has not been met.



## **OEPA ORAM Field Forms**

## Background Information

<b>Name:</b> Matthew Ray	
<b>Date:</b> 09/26/2022	
<b>Affiliation:</b> TRC Companies, Inc.	
<b>Address:</b> 1382 West Ninth Street, Suite 400	
<b>Phone Number:</b> 216-344-3027	
<b>e-mail address:</b> MRay@TRCCompanies.com	
<b>Name of Wetland:</b> W-MRR-1	
<b>Vegetation Communit(ies):</b> PEM	
<b>HGM Class(es):</b> Depression (I)	
<b>Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.</b>  See Report	
Lat/Long or UTM Coordinate	40.707088, -81.245345
USGS Quad Name	Malvern
County	Stark
Township	Sandy
Section and Subsection	T17N, R7W, 10
Hydrologic Unit Code	050400010604
Site Visit	09/26/2022
National Wetland Inventory Map	See Report
Ohio Wetland Inventory Map	See Report
Soil Survey	See Report
Delineation report/map	See Report

<b>Name of Wetland:</b> W-MRR-1	
<b>Wetland Size (acres, hectares):</b>	>40 AC
<b>Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.</b> See Report	
<b>Comments, Narrative Discussion, Justification of Category Changes:</b>	
<b>Final score :</b> 42	<b>Category:</b> 2

## 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.	X	
<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.	X	
<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.	X	
<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.	X	
<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.		X
<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.	X	

**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	<b>NO</b>  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	<b>NO</b>  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	<b>NO</b>  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	<b>NO</b>  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 viridicarinatum</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> W-MRR-1, FE Sammis-South Canton Project	<b>Rater(s):</b> Matthew Ray & Tom Radford	<b>Date:</b> 9/26/2022
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<b>5</b>	<b>5</b>
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)

<b>5</b>	<b>10</b>
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)

<b>16</b>	<b>26</b>
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 checked="" type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input checked="" type="checkbox"/> stormwater input	<input type="checkbox"/> other _____

<b>11</b>	<b>37</b>
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"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input checked="" type="checkbox"/> sedimentation
<input checked="" type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

<b>37</b>
subtotal this page



<b>Site:</b> W-MRR-1, FE Sammis-South Canton Project	<b>Rater(s):</b> Matthew Ray & Tom Radford	<b>Date:</b> 09/26/2022
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37

subtotal first page

0	37
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)

5	42
max 20 pts.	subtotal

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

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- Aquatic bed
- 1 Emergent
- Shrub
- 1 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
- 1 Coarse woody debris >15cm (6in)
- 1 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

42

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

# ORAM Summary Worksheet

		circle answer or insert score	Result
Narrative Rating	Question 1. Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.	
Quantitative Rating	Metric 1. Size	5	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	16	
	Metric 4. Habitat	11	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	5	
	TOTAL SCORE	42	Category based on score breakpoints 2

**Complete Wetland Categorization Worksheet.**

## Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions:  Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES  Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO	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
Did you answer "Yes" to any of the following questions:  Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES  Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to  Narrative Rating No. 5	YES  Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO	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
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	<input checked="" type="radio"/> YES  Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES  Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/> NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit <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?	YES  Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	<input checked="" type="radio"/> NO	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

### Final Category

Choose one	Category 1	<input checked="" type="radio"/> Category 2	Category 3
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**End of Ohio Rapid Assessment Method for Wetlands.**

## Stream Forms

Stream & Location: S-MRR-1 (Little Sandy Creek)

RM: 3.90 Date: 9/26/2022

Scorers Full Name & Affiliation: T. Radford, TRC, M. Ray, TRC

River Code:

STORET #:

Lat./ Long.: 40.707102 / -81.244084

Office verified location

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

Substrate assessment form with categories: BEST TYPES, OTHER TYPES, ORIGIN, QUALITY. Includes checkboxes for BLDR/SLABS, BOULDER, COBBLE, GRAVEL, SAND, BEDROCK, etc.

Substrate 14 Maximum 20

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts

AMOUNT

Check ONE (Or 2 & average)

Instream Cover assessment form with categories: UNDERCUT BANKS, OVERHANGING VEGETATION, SHALLOWS, ROOTMATS, POOLS > 70cm, ROOTWADS, BOULDERS, OXBOWS, BACKWATERS, AQUATIC MACROPHYTES, LOGS OR WOODY DEBRIS.

Cover Maximum 20 10

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

Channel Morphology assessment form with categories: SINUOSITY, DEVELOPMENT, CHANNELIZATION, STABILITY.

Channel Maximum 20 10

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

Bank Erosion and Riparian Zone assessment form with categories: EROSION, RIPARIAN WIDTH, FLOOD PLAIN QUALITY, CONSERVATION TILLAGE, URBAN OR INDUSTRIAL, MINING / CONSTRUCTION.

Riparian Maximum 10 6.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

Pool / Glide and Riffle / Run Quality assessment form with checkboxes for depth, width, and velocity categories.

Recreation Potential Primary Contact Secondary Contact

Pool / Current Maximum 12 7

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

NO RIFFLE [metric=0]

Riffle assessment form with categories: RIFFLE DEPTH, RUN DEPTH, RIFFLE / RUN SUBSTRATE, RIFFLE / RUN EMBEDDEDNESS.

Riffle / Run Maximum 8 4

6] GRADIENT (4.53 ft/mi) DRAINAGE AREA (34.4 mi^2) VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]

%POOL: 10 %GLIDE: 30 %RUN: 30 %RIFFLE: 30

Gradient Maximum 10 4

**A) SAMPLED REACH**

Check ALL that apply

Comment RE: Reach consistency/Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

pH: 7.97

Temp: 16.6 C

**METHOD**

- BOAT
- WADE
- L. LINE
- OTHER

**STAGE**

- 1st-sample pass-- 2nd
- HIGH
- UP
- NORMAL
- LOW
- DRY

**DISTANCE**

- 0.5 Km
- 0.2 Km
- 0.15 Km
- 0.12 Km
- OTHER

meters

**CANOPY**

- > 85%- OPEN
- 55%-<85%
- 30%-<55%
- 10%-<30%
- <10%- CLOSED

**CLARITY**

- 1st --sample pass-- 2nd
- < 20 cm
- 20-<40 cm
- 40-70 cm
- > 70 cm/ CTB
- SECCHI DEPTH

**B) AESTHETICS**

- NUISANCE ALGAE
- INVASIVE MACROPHYTES
- EXCESS TURBIDITY
- DISCOLORATION
- FOAM / SCUM
- OIL SHEEN
- TRASH / LITTER
- NUISANCE ODOR
- SLUDGE DEPOSITS
- CSOS/SSOS/OUTFALLS

**D) MAINTENANCE**

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMORED / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

**E) ISSUES**

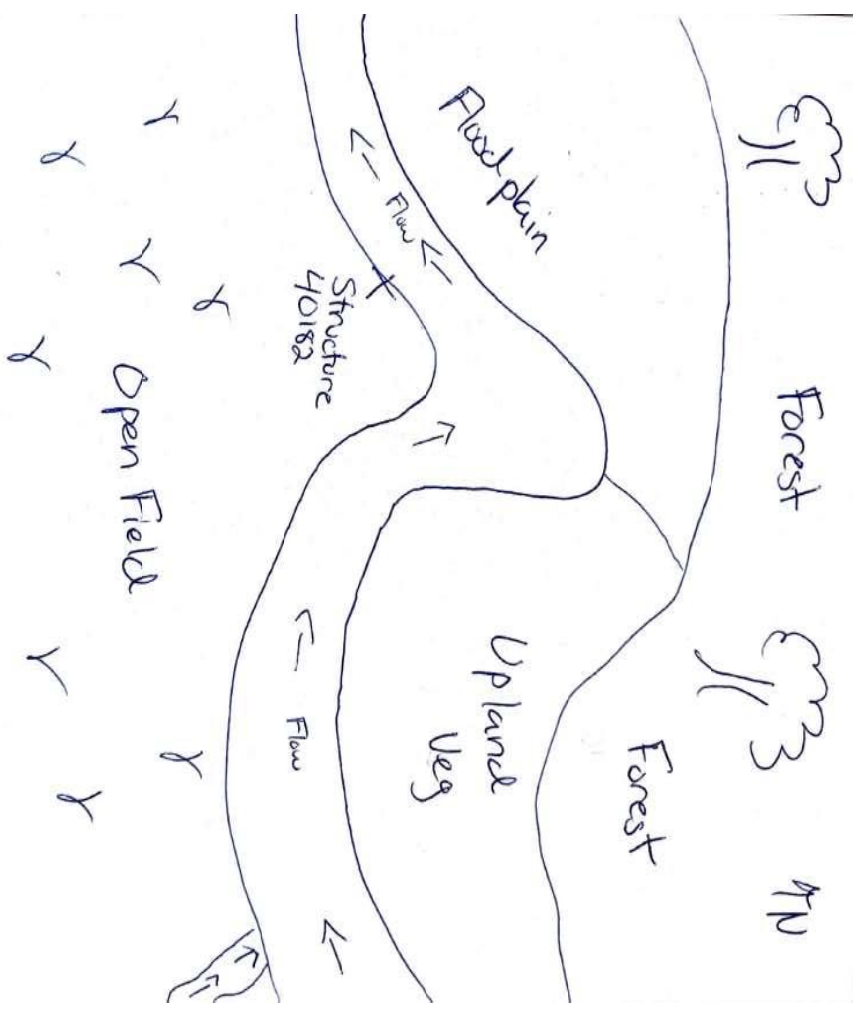
- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

**F) MEASUREMENTS**

- $\bar{x}$  width 15 ft
- $\bar{x}$  depth 4 ft
- max. depth
- $\bar{x}$  bankfull width 25 ft
- bankfull  $\bar{x}$  depth 12 ft
- W/D ratio
- bankfull max. depth
- floodprone  $\bar{x}^2$  width
- entrench. ratio

Legacy Tree:

**Stream Drawing:**



SITE NAME/LOCATION S-MRR-2 (UNT to Little Sandy Creek)  
 SITE NUMBER NA RIVER BASIN Tuscarawas River RIVER CODE NA DRAINAGE AREA (mi<sup>2</sup>) 0.15  
 LENGTH OF STREAM REACH (ft) 200 LAT 40.707006 LONG -81.243291 RIVER MILE N/A  
 DATE 9/26/2022 SCORER T. Radford/M. Ray COMMENTS Culvert

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

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

<b>1. SUBSTRATE (Estimate percent of every type present).</b> Check <u>ONLY two</u> predominant substrate <i>TYPE</i> boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B				<b>HHEI Metric Points</b>  Substrate Max = 40  <div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto;">12</div> A + B																												
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">TYPE</th> <th style="text-align: left;">PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> BLDR SLABS [16 pts]</td><td>_____</td></tr> <tr><td><input type="checkbox"/> BOULDER (&gt;256 mm) [16 pts]</td><td>_____</td></tr> <tr><td><input type="checkbox"/> BEDROCK [16 pts]</td><td>_____</td></tr> <tr><td><input type="checkbox"/> COBBLE (65-256 mm) [12 pts]</td><td>_____</td></tr> <tr><td><input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]</td><td style="text-align: center;">10</td></tr> <tr><td><input checked="" type="checkbox"/> SAND (&lt;2 mm) [6 pts]</td><td style="text-align: center;">60</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> BLDR SLABS [16 pts]		_____	<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> BEDROCK [16 pts]	_____	<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	_____	<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	10	<input checked="" type="checkbox"/> SAND (<2 mm) [6 pts]	60	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">TYPE</th> <th style="text-align: left;">PERCENT</th> </tr> </thead> <tbody> <tr><td><input type="checkbox"/> SILT [3 pt]</td><td>_____</td></tr> <tr><td><input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]</td><td>_____</td></tr> <tr><td><input checked="" type="checkbox"/> FINE DETRITUS [3 pts]</td><td style="text-align: center;">30</td></tr> <tr><td><input type="checkbox"/> CLAY or HARDPAN [0 pt]</td><td>_____</td></tr> <tr><td><input type="checkbox"/> MUCK [0 pts]</td><td>_____</td></tr> <tr><td><input type="checkbox"/> ARTIFICIAL [3 pts]</td><td>_____</td></tr> </tbody> </table>	TYPE	PERCENT	<input type="checkbox"/> SILT [3 pt]	_____	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	_____	<input checked="" type="checkbox"/> FINE DETRITUS [3 pts]	30	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	_____	<input type="checkbox"/> MUCK [0 pts]	_____	<input type="checkbox"/> ARTIFICIAL [3 pts]	_____	Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock _____ (A) <span style="border: 1px solid black; padding: 2px;">9</span> (B) <span style="border: 1px solid black; padding: 2px;">3</span>	
TYPE	PERCENT																															
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<b>SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:</b> <span style="border: 1px solid black; padding: 2px;">9</span> <b>TOTAL NUMBER OF SUBSTRATE TYPES:</b> <span style="border: 1px solid black; padding: 2px;">3</span>																																
<b>2. Maximum Pool Depth (Measure the <u>maximum</u> pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check <u>ONLY</u> one box):</b>				<b>Pool Depth Max = 30</b>  <div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto;">15</div>																												
<input type="checkbox"/> > 30 centimeters [20 pts] <input type="checkbox"/> > 22.5 - 30 cm [30 pts] <input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> 5 cm - 10 cm [15 pts] <input type="checkbox"/> < 5 cm [5pts] <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0pts]	COMMENTS _____ <b>MAXIMUM POOL DEPTH (centimeters):</b> <span style="border: 1px solid black; padding: 2px;">9</span>																														
<b>3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check <u>ONLY</u> one box):</b>				<b>Bankfull Width Max=30</b>  <div style="border: 1px solid black; padding: 5px; width: 40px; margin: 0 auto;">5</div>																												
<input type="checkbox"/> > 4.0 meters (> 13') [30 pts] <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] <input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] <input checked="" type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]	COMMENTS _____ <b>AVERAGE BANKFULL WIDTH (meters)</b> <span style="border: 1px solid black; padding: 2px;">1</span>																														

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS \_\_\_\_\_

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

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

COMMENTS \_\_\_\_\_

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

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

**STREAM GRADIENT ESTIMATE**

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

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

**QHEI PERFORMED?**  Yes  No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI form)

**DOWNSTREAM DESIGNATED USE(S)**

- WWH Name: Little Sandy Creek Distance from Evaluated Stream 50ft  
 CWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_  
 EWH Name: \_\_\_\_\_ Distance from Evaluated Stream \_\_\_\_\_

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

USGS Quadrangle Name: Malvern NRCS Soil Map Page: NA NRCS Soil Map Stream Order: NA  
County: Stark Township/City: \_\_\_\_\_

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 9/23/2022 Quantity: 0.03 inches  
Photo-documentation Notes: See report  
Elevated Turbidity? (Y/N): N Canopy (% open): 100  
Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): NA  
Field Measures: Temp (°C) 16.6 Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) 7.97 Conductivity (umhos/cm) \_\_\_\_\_  
Is the sampling reach representative of the stream (Y/N) Y If not, explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOLOGICAL OBSERVATIONS**

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): \_\_\_\_\_  
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): \_\_\_\_\_  
Salamanders Observed? (Y/N) N Species observed (if known): \_\_\_\_\_  
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): \_\_\_\_\_  
Comments Regarding Biology: \_\_\_\_\_

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

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

