

Surface Water Delineation Report

**Fostoria Central – Lallendorf
345kV Line Structure Replacement
Project**

May 2024

**Troy Township in Wood County,
Ohio**

Prepared For:



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ACRONYMS AND DEFINITIONS

1987 Manual	United States Army Corps of Engineers 1987 Wetland Delineation Manual
CFR	Code of Federal Regulations
EPA	Environmental Protection Agency
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
FEMA FIRM	Federal Emergency Management Agency Flood Insurance Rate Map
FirstEnergy	FirstEnergy Corporation
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
HUC	Hydrologic Unit Code
NHD	National Hydrography Dataset
NWI	National Wetlands Inventory
NWP	Nationwide Permit
OAC	Ohio Administrative Code
OBL	Obligate Wetland
OEPA	Ohio Environmental Protection Agency
ORAM	Ohio Rapid Assessment Method
Project	Fostoria Central – Lallendorf 345kV Line Structure Replacement Project
Project Study Area	3.75-acres, located in Troy Township, in Wood County, Ohio
QHEI	Qualitative Habitat Evaluation Index
Redox	Redoximorphic
Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)
Report	Surface Water Delineation Report for the Fostoria Central – Lallendorf 345kV Line Structure Replacement Project
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

WOTUS

Waters of the United States

1.0 Introduction

On behalf of FirstEnergy Corporation (FirstEnergy), TRC Companies, Inc. (TRC) performed a surface water delineation for the Fostoria Central – Lallendorf 345kV Line Structure Replacement Project (Project). The Project is approximately 3.75-acres total in size, located in Troy Township in Wood County, Ohio (Project Study Area). The proposed Project involves the replacement of Structure 102-1 on the Fostoria Central – Lallendorf 345kV Line. TRC conducted the required field investigations and prepared this Surface Water Delineation Report (Report) for the Project. A location map of the proposed Project Study Area can be found in **Appendix A, Figure 1**.

On March 25, 2024, 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 northern coordinates: 41.473962, -83.444640 and western terminus: 41.472014, -83.453822; located east of Pemberville Road and west of Bradner Road in Troy Township, Wood County, Ohio. The Project Study Area occurs within an existing access road and maintained utility right-of-way, surrounded by agricultural land use, residential, and forested habitat. **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: Northcentral and Northeast 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:

- Evidence of wetland hydrology;
- Presence of hydric soils; and
- Predominance of hydrophytic vegetation as defined by *The National Wetland Plant List: 2020 Wetland Ratings* (USACE, 2023).

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 provide 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 *2022 National Wetland Plant List, Version 3.6* (USACE, 2023). There are five (5) 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 March 25, 2024. The surface water field investigations were conducted within the predetermined Project Study Area that was developed in accordance with the Project location information provided by FirstEnergy (**Appendix A, Figure 2**). 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 (USEPA, 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 (1) primary indicator (i.e., surface water, saturation, etc.) or two (2) secondary indicators (i.e., geomorphic position, stunted or stressed plants, etc.) are identified. One (1) primary indicator is sufficient to determine if hydrology is present; however, if these are absent then two (2) 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, until refusal, or positive hydric soil indicators were met below 22 inches, 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 on the data form 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 (1) 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 and a

Trimble R1, both 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 Northcentral and Northeast Region.” Data from the Global Positioning System (GPS) survey was downloaded and integrated into a Geographic Information Systems 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 (2) primary components of the ORAM are the Narrative Rating and the Quantitative Rating. If a wetland was identified during the fieldwork, 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 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) (OEPA, 2006) and/or the Headwater Habitat Evaluation Index (HHEI) (OEPA, 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 4.19.2: Ohio (USGS, 2022).

Following OEPA guidance, stream(s) 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 (6) 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 (≤ 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 .

If a stream with a drainage area of <1.0 square mile (2.6 square kilometers) was identified during the fieldwork, the HHEI was utilized to score those stream(s). Data collection would be completed on the HHEI form(s), as provided by the OEPA. The observational data regarding the physical nature of the stream corridor will include stream flow, riparian zone land use and buffer width, and channel modification. Measurements would include bankfull width, maximum pool depth, and substrate composition.

Stream(s) identified during the course of the investigation were classified as perennial, intermittent, or ephemeral waterways in accordance with the rationale defined by the USACE.

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 3.75-acres total in size, located in Troy Township in Wood County, Ohio within the Upper Toussaint Creek (12-Digit Hydrologic Unit Code (HUC) 04100010 0601) sub-watershed.

The Project Study Area is shown on the Pemberville, OH (USGS, 2023) United States Geological Survey (USGS) 7.5-minute series topographic quadrangles (**Appendix A, Figure 1**).

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 3**). **Table 1** provides a summary of the soils identified

within the Fostoria Central – Lallendorf 345kV Line Structure Replacement Project proposed Project Study Area.

Table 1 Soils Type Summary within the Fostoria Central – Lallendorf 345kV Line Structure Replacement Project

Map Unit Symbol	Map Unit Name	Hydric Status	Acres Within Study Area	Percent Cover in Study Area
HcA	Hoytville silty clay loam, 0-1% slopes	Hydric	0.86	22.9%
NnA	Nappanee loam, 0-2% slopes	Non-Hydric with Hydric Inclusions	2.39	63.7%
SpA	Sloan silty clay loam, 0-1% slopes, frequently flooded	Non-Hydric with Hydric Inclusions	0.45	11.9%
SuB2	St. Clair silty clay loam, 2-6% slopes, eroded	Non-Hydric with Hydric Inclusions	0.05	1.4%
Note: Accessed online April 2024 at: http://websoilsurvey.sc.egov.usda.gov .				

There is one (1) United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded (R5UBH) feature mapped within the Project Study Area (**Appendix A, Figure 4**) (USFWS, 2022).

The USGS National Hydrography Dataset (NHD) (USGS, 2018) Downloadable Data Collection from The National Map (USGS, 2022) 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 4**).

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel (Panel No.: 3917C0180D, effective date: 9/2/2011) the Project Study Area has two locations within a mapped 100-year floodplain (**Appendix A, Figure 4**) (FEMA, 2023).

3.2 Surface Water Resource Field Delineations

TRC performed field investigations on March 25, 2024. Weather conditions were normal for the season, with temperatures ranging between 33 degrees to 65 degrees Fahrenheit, and partly cloudy skies. Both 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, two (2) wetlands were 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 – Northcentral and Northeast and a wetland functional assessment was completed for the delineated wetland using the ORAM (**Appendix C**). The delineated wetlands within the Project Study Area are summarized in **Table 2**.

Table 2 Delineated Wetland Feature Summary Table

Resource ID ¹	Cowardin Classification ²	Connection ³	Provisional Jurisdictional Status ⁴	ORAM Score	ORAM Category ⁵	Approximate Delineated Area within Project Study Area ⁶ (acres)
W-JMS-1	PEM	Abutting	USACE Jurisdictional, Wetland	35	Cat. 2	0.08
W-JMS-2	PEM	Adjacent	USACE Jurisdictional, Wetland	27	Cat. 1	0.58
TOTAL						0.66
¹ TRC resource identification. ² 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 ³ Connection to a jurisdictional waterway: Isolated, Abutting, or Adjacent as determined by TRC; subject to USACE verification. Wetland connection is pending an update from OEPA and USACE based on the EPA vs. Sackett case. ⁴ Jurisdiction status is based upon field observations and mapping review of apparent connectivity or adjacency of the resource to Waters of the United States or Waters of the State and the assumption that a preliminary jurisdictional determination process will be utilized for the project. ⁵ 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. ⁶ Area is rounded to nearest 0.01-acre, based upon GPS data.						

3.2.2 Waterbodies

During the field investigations, one (1) stream was delineated within the Project Study Area. A detailed summary of the waterbody resource 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 QHEI data

form. Representative photographs of the described waterbody identified within the Project Study Area can be found in **Appendix B**. The QHEI data form is provided within **Appendix C**.

Table 3 Delineated Waterbody Resources Summary Table

Waterbody ID ¹	Resource Name ²	Flow Regime	OEPA Use Designation ³	Existing Use Designation ⁴	HHEI Score ⁵	QHEI Score ⁶	Approximate Delineated Length and Area within the Project Study Area ⁷ (linear feet/acre)
S-JMS-1	UNT to Toussaint Creek	Perennial	-	Poor	-	38.5	11 feet (0.002-acre)
TOTAL							11 feet (0.002-acre)
Notes: ¹ TRC resource identification. ² UNT = Unnamed Tributary ³ Determined by OEPA and listed in OAC §3745-1-23 Portage River drainage basin (Ohio Administrative Code, 2020). ⁴ Determined by TRC, subject to verification by OEPA. PHW = Primary Headwater. ⁵ HHEI, for streams with drainage areas of less than 1.0 square mile and a maximum pool depth of less than 40 centimeters. ⁶ QHEI, for streams with drainage areas of greater than 1.0 square mile and a maximum pool depth greater than 40 centimeters. ⁷ Area is rounded to nearest 0.001-acre, based upon GPS data. Delineated length is rounded to the nearest whole foot.							

4.0 Permitting Considerations

It is anticipated that due to the nature of the Project, jurisdictional resources may be impacted by the proposed Project activities. As currently proposed, it is TRC's understanding that this Project falls under Nationwide Permit (NWP) 57 – Electric Utility Line and Telecommunications Activities as published in the Federal Register on January 13, 2021. NWP 57 authorizes activities required for the construction, maintenance, repair, and removal of electric utility lines, telecommunication lines, and associated facilities in Waters of the United States (WOTUS), provided the activity does not result in the loss of greater than ½-acre of WOTUS for each single and complete project. Nationwide Permit Regional General Conditions, specifically those triggering Pre-Construction Notification, were reviewed regarding this Project. This Project is in Troy Township in Wood County, Ohio, which is within the USACE Buffalo Regulatory District. None of the townships and/or waterways within Wood County are listed on Appendix 1 to Regional General Condition 5(a) (Endangered Species and Threatened Species). A Pre-Construction Notification must be made to the Buffalo District if the discharge of fill will result in the loss of greater than 1/10-acre of WOTUS.

The State of Ohio has waived 401 Water Quality Certification for NWP 57 and the Project is located within an "Eligible" area according to OEPA's Stream Eligibility for Nationwide Permit Program (OEPA, 2017) (**Appendix A, Figure 6**), therefore, the 401 Water Quality Certification would be covered by a NWP. The Ohio Department of Natural Resources' Division of Wildlife's In-Water Work Restrictions (March 15 -June 30) for all perennial streams would apply should work be proposed within S-JMS-1.

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 Water Quality Certification, 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.

6.0 References

Cowardin, L., Carter, V., Golet, F., & LaRoe, E. (1979). *Classification of Wetland and Deepwater Habitats of the United States*. 103 pp. U.S. Fish and Wildlife Service.

Federal Register. (1994, July 13). Changes in hydric soils of the United States.

FEMA. (2023, June). *FEMA Flood Map Service Center*. Retrieved from U.S. Department of Homeland Security: Federal Emergency Management Agency: <https://msc.fema.gov/portal>

Mack, J. (2000). ORAM v. 5.0 Quantitative Score Calibration. Columbus, Ohio: Ohio Environmental Protection Agency, Division of Surface Water, 401/Wetland Ecology Unit.

Mack, J. (2001). Ohio EPA Technical Report WET/201-1. Columbus, Ohio: Ohio Environmental Protection Agency, Division of Surface Water, 401/Wetland Ecology Unit.

Munsell Color Company. (2009). X-Rite Munsell Soil Color Book 2009 Revised Edition.

OEPA. (2006). *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. Columbus, OH: Division of Surface Water, Ohio Environmental Protection Agency.

OEPA. (2017). 401 Water Quality Certification for Nationwide Permit Eligibility Online Map. Retrieved November 2023, from <https://www.arcgis.com/apps/webappviewer/index.html?id=e6b46d29a38f46229c1eb47deefe49b6>

OEPA. (2020). *Field Methods for Evaluating Primary Headwater Streams in Ohio (Version 4.1) (HHEI)*. Columbus, OH: Division of Surface Water, Ohio Environmental Protection Agency.

Ohio Administrative Code. (2020, May). Rule 3745-1-23 (n.d.) Portage River Drainage Basin, Table 23. *Use Designation for Water Bodies in the Portage River Drainage Basin*.

Rankin, E. T. (1989, November 6). The Qualitative Habitat Evaluation Index (QHEI): Rationale, Methods, and Application. Columbus, Ohio: Ohio Environmental Protection Agency, Division of Surface Water.

USACE. (1987). *Corps of Engineers Wetlands Delineation Manual*. Vicksburg, MS: Environmental Laboratory U.S. Army Corps of Engineers.

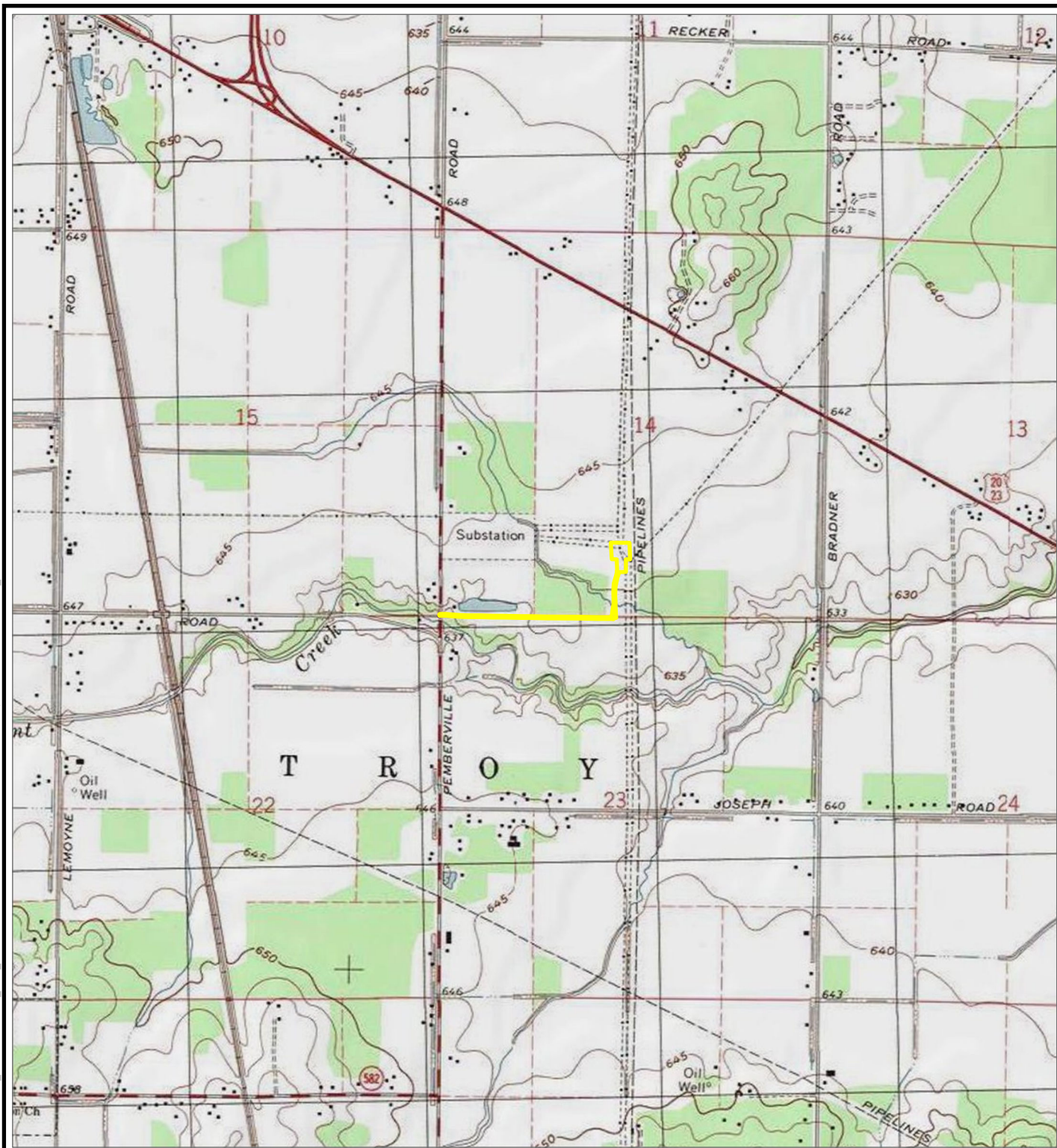
USACE. (2008, June 26). Regulatory Guidance Letter, Subject: Jurisdictional Determinations.

-
- USACE. (2012). *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*. Vicksburg: U.S. Army Engineer Research and Development Center Environmental Laboratory: U.S. Army Corps of Engineers.
- USACE. (2023). *2022 National Wetland Plant List, Version 3.6*. Retrieved from <http://wetland-plants.usace.army.mil/>
- USDA, NRCS. (2018). *Field Indicators of Hydric Soils in the United States, Version 8.2*. (L. Vasilas, G. Hurt, & C. Noble, Editors)
- USDA-NRCS. (2016). *Web Soil Survey*. Retrieved November 2023, from <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>
- USEPA, USACE. (2007, June 5). Clean Water Act Jurisdiction Following Supreme Court's Decision in *Rapanos V. United States & Carabell v. United States*.
- USFWS. (2022). *National Wetlands Inventory*. Retrieved November 2023, from <http://www.fws.gov/wetlands/Data/Mapper.html>
- USGS. (2018). *National Hydrography Dataset*. Retrieved November 2023, from <https://nhd.usgs.gov/data.html>
- USGS. (2022). *StreamStats, v 4.19.2*. (U.S. Geological Survey) Retrieved November 2023, from StreamStats Ohio: <https://streamstats.usgs.gov/ss/>
- USGS. (2022, February). *The National Map*. Retrieved November 2023, from <https://apps.nationalmap.gov/viewer/>
- USGS. (2023). *Topographical Quadrangle (7.5 Minute Series)*. Retrieved from Pemberville, OH 7.5-minute Quadrangle.
- Williams, A. (1992). Memorandum: Clarification and Interpretation of the 1987 Manual. U.S. Army Corps of Engineers.

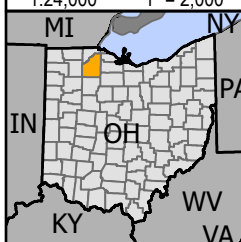
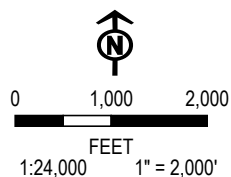
Appendix A

Figures

COORDINATE SYSTEM: NAD 1983 STATEPLANE OHIO NORTH RIPS 3401 FEET, MAP ROTATION: 0
- SAVED BY: MOPEL ON 4/8/2024, 11:06:15 AM, FILE PATH: T:\1-PROJECTS\FIRST ENERGY\429847_0092_FOSTORICENTRALLALLENDORF2-APRX\WDR.APRX, LAYOUT NAME: FIG01_SLM



 PROJECT STUDY AREA



BASE MAP: USA TOPO MAPS MAP SERVICE, PEMBERVILLE QUAD

PROJECT
**FIRSTENERGY - FOSTORIA CENTRAL-LALLENDORF
LINE 345KV STRUCTURE REPLACEMENT PROJECT
WOOD COUNTY, OH**

TITLE:

SITE LOCATION MAP

DRAWN BY: M. OPEL

PROJ. NO.: 429847.0092

CHECKED BY: M. MOLNAR

APPROVED BY: B. FALKINBURG

DATE: APRIL 2024

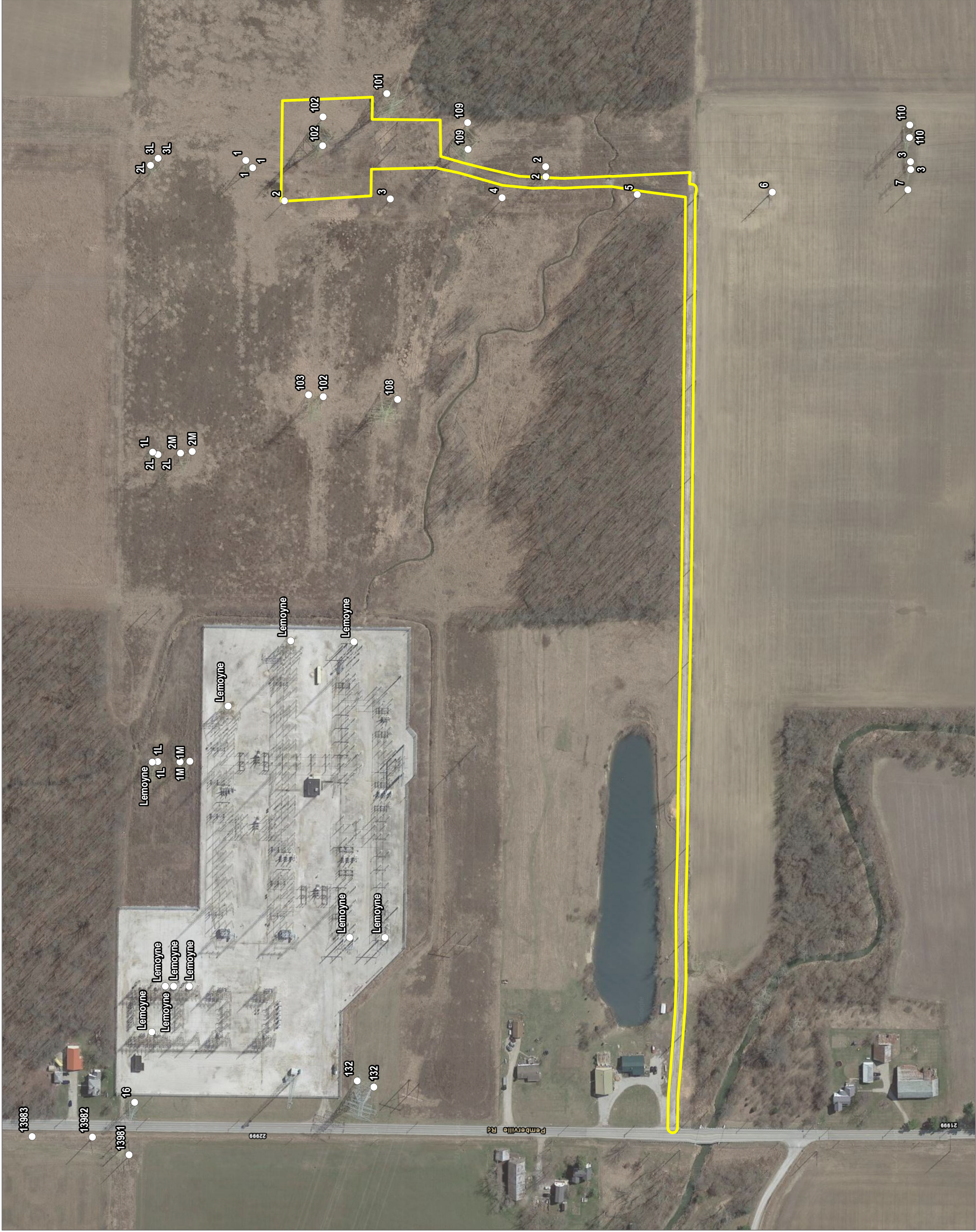
FIGURE 1



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

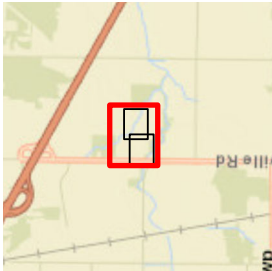
FILE:

WDR



PROJECT STUDY AREA
EXISTING STRUCTURE

BASE MAP: GOOGLE MAPS.




1:3,000
1" = 250'

0 250 500 FEET

PROJECT: FIRSTENERGY - FOSTORIA CENTRAL-LALLENDORF
LINE 345KV STRUCTURE REPLACEMENT PROJECT
WOOD COUNTY, OH

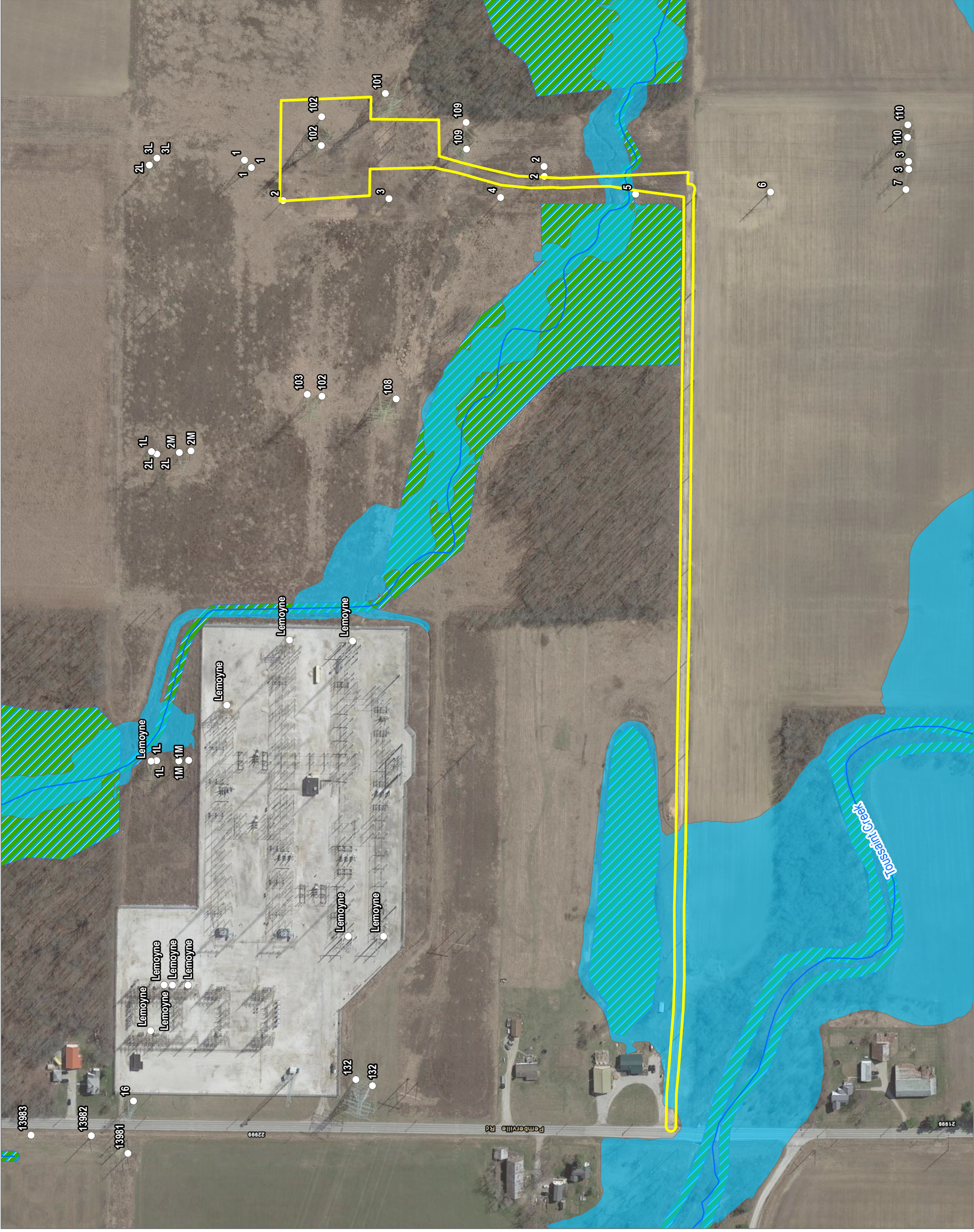
TITLE:			
AERIAL MAP			
DRAWN BY:	M. OPEL	PROJ. NO.:	429847.0092
CHECKED BY:	M. MOLNAR	FIGURE 2	
APPROVED BY:	B. FALKINBURG		
DATE:	APRIL 2024		



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

FILE: WDR.aprx






- PROJECT STUDY AREA
- EXISTING STRUCTURE
- NATIONAL HYDROGRAPHY DATASET (NHD) STREAM
- NATIONAL WETLANDS INVENTORY (NWI) FEATURE
- 100-YEAR FLOOD ZONE

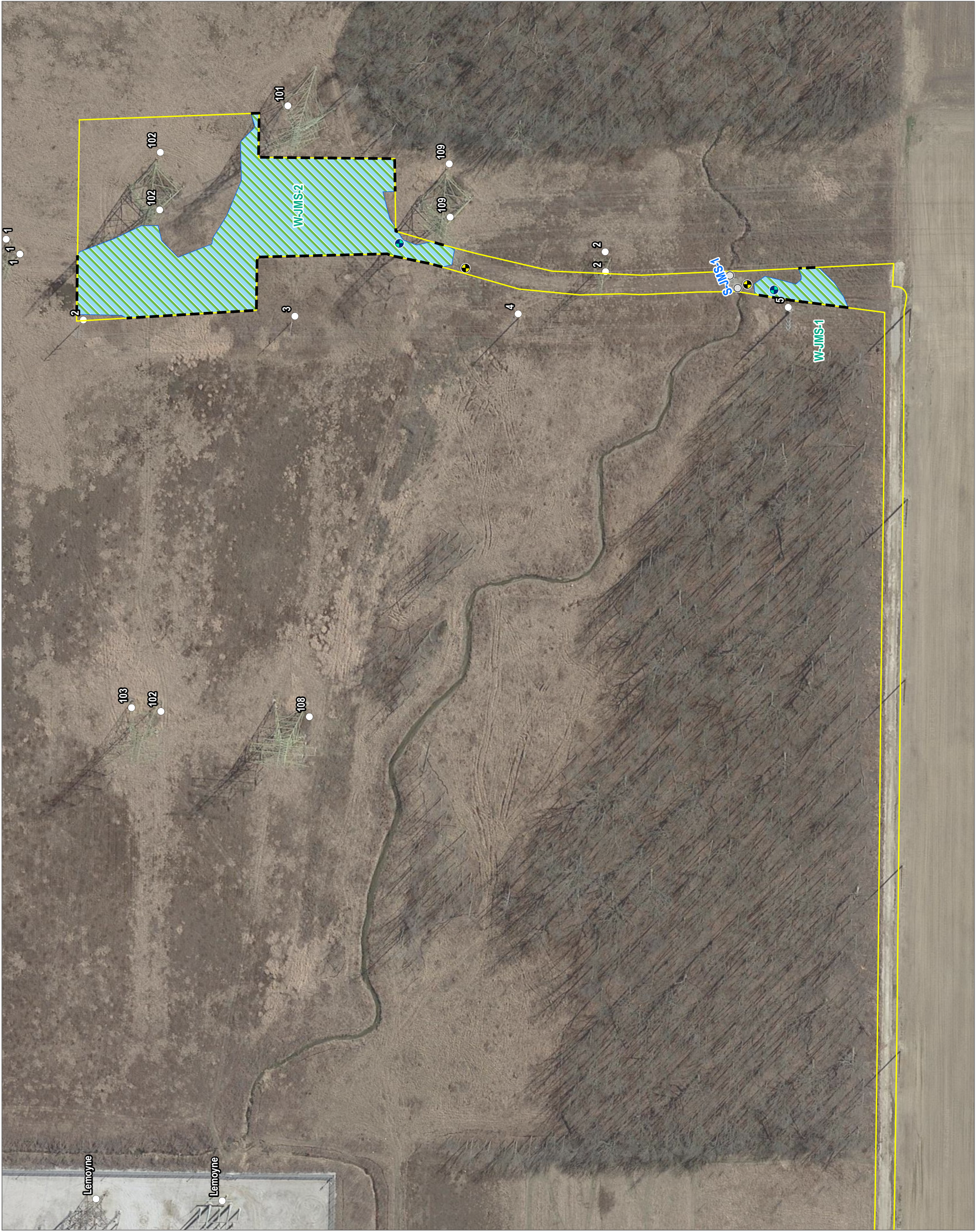
BASE MAP: GOOGLE MAPS.
DATA SOURCES: WETLAND DATA ACQUIRED FROM U.S. FISH & WILDLIFE SERVICE; NATIONAL WETLANDS INVENTORY (NWI). STREAM DATA ACQUIRED FROM USGS; NATIONAL HYDROGRAPHY DATASET (NHD). FLOOD DATA ACQUIRED FROM FEMA; NATIONAL FLOOD HAZARD LAYER (NFHL).



1:3,000
1" = 250'

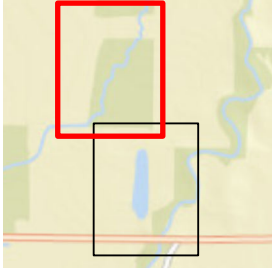


PROJECT: FIRSTENERGY - FOSTORIA CENTRAL-LALLENDORF LINE 345KV STRUCTURE REPLACEMENT PROJECT WOOD COUNTY, OH		TITLE: NHD, NWI AND FEMA FLOODPLAIN MAP	
DRAWN BY:	M. OPEL	PROJ. NO.:	429847.0092
CHECKED BY:	M. MOLNAR	FIGURE 4	
APPROVED BY:	B. FALKINBURG		
DATE:	APRIL 2024		
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FILE:		WDR.aprx	



- PROJECT STUDY AREA
- EXISTING STRUCTURE
- CULVERT
- PERENNIAL STREAM
- PEM WETLAND
- WETLAND CONTINUES
- WETLAND DATA POINT
- UPLAND DATA POINT

BASE MAP: GOOGLE MAPS.
DATA SOURCES: TRC WETLAND DELINEATION COMPLETED MARCH 25, 2024.



1:1,500
1" = 125'

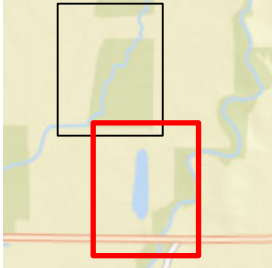


PROJECT: FIRSTENERGY - FOSTORIA CENTRAL-LALLENDORF LINE 345KV STRUCTURE REPLACEMENT PROJECT WOOD COUNTY, OH	
TITLE: DELINEATED RESOURCES MAP	
DRAWN BY: M. OPEL	PROJ. NO.: 429847.0092
CHECKED BY: M. MOLNAR	
APPROVED BY: B. FALKINBURG	FIGURE 5 (PAGE 1 OF 2)
DATE: APRIL 2024	
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TRC	
FILE: WDR.aprx	



- PROJECT STUDY AREA
- EXISTING STRUCTURE
- CULVERT
- PERENNIAL STREAM
- PEM WETLAND
- WETLAND CONTINUUES
- WETLAND DATA POINT
- UPLAND DATA POINT

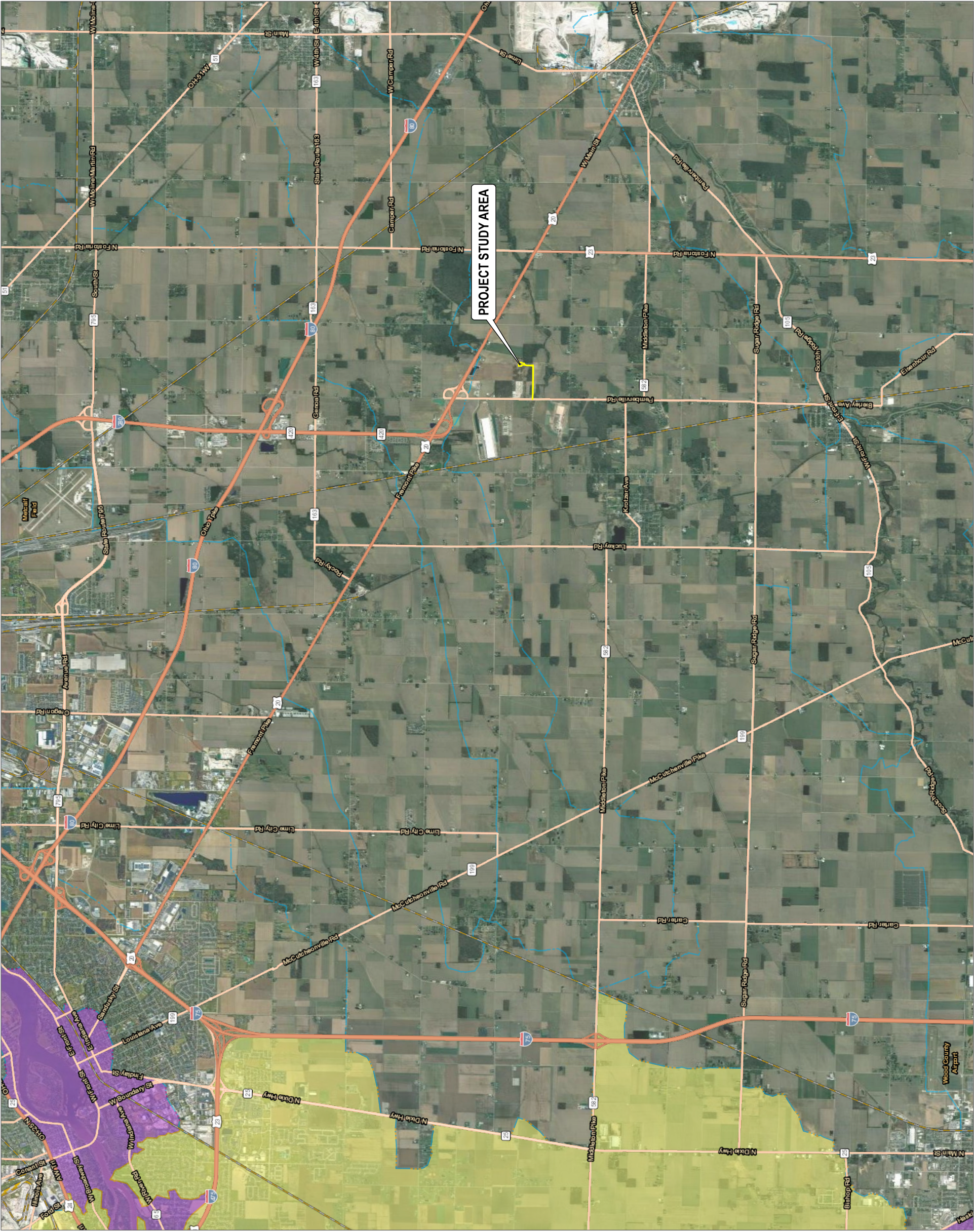
BASE MAP: GOOGLE MAPS.
DATA SOURCES: TRC WETLAND DELINEATION COMPLETED MARCH 25, 2024.



1:1,500
1" = 125'



PROJECT: FIRSTENERGY - FOSTORIA CENTRAL-LALLENDORF LINE 345KV STRUCTURE REPLACEMENT PROJECT WOOD COUNTY, OH			
TITLE: DELINEATED RESOURCES MAP			
DRAWN BY:	M. OPEL	PROJ. NO.:	429847_0092
CHECKED BY:	M. MOLNAR	FIGURE 5 (PAGE 2 OF 2)	
APPROVED BY:	B. FALKINBURG		
DATE:	APRIL 2024		
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- PROJECT STUDY AREA
- OHIO EPA 401 WATER QUALITY CERTIFICATION FOR NATIONWIDE PERMIT ELIGIBILITY
- INELIGIBLE
- POSSIBLY ELIGIBLE
- ELIGIBLE


BASE MAP: GOOGLE MAPS.
DATA SOURCES: NATIONWIDE PERMITS STREAM DATA ACQUIRED FROM THE OHIO EPA.



1:84,000
1" = 7,000'



PROJECT FIRSTENERGY - FOSTORIA CENTRAL-LALLENDORF LINE 345KV STRUCTURE REPLACEMENT PROJECT WOOD COUNTY, OH			
TITLE: NATIONWIDE PERMITS STREAM ELIGIBILITY MAP			
DRAWN BY:	M. OPEL	PROJ. NO.:	429847.0092
CHECKED BY:	M. MOLNAR	FIGURE 6	
APPROVED BY:	B. FALKINBURG		
DATE:	APRIL 2024		



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