CONSTRUCTION NOTICE

FOR THE

Half Acre Substation Transmission Line Relocation Project

OPSB Case No. 21-348-EL-BNR

Submitted to:

The Ohio Power Siting Board

Pursuant to O.A.C. 4906-06

Submitted by:

Duke Energy Ohio, Inc.

June 2021

TABLE OF CONTENTS

ATTACHMENTS

CONSTRUCTION NOTICE

This Construction Notice has been prepared by Duke Energy Ohio, Inc., (hereafter Duke Energy Ohio or Company) in accordance with Ohio Administrative Code (O.A.C.) Section **4906-6-05** for review of the Accelerated Certificate Application for the Duke Energy Ohio Half Acre Substation Transmission Line Relocation Project. The following sections correspond to the administrative code sections for the requirements of a Construction Notice.

4906-06-05: ACCELERATED APPLICATION REQUIREMENTS

4906-6-05(B): General Information

4906-6-05(B)(1): Name, Reference Number, Brief Description, and Construction Notice Requirement

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

Name of Project:

Duke Energy Ohio Half Acre Substation Transmission Line Relocation Project (Project)

	Reference Numbers:
OPSB Filing Number:	The Project has been assigned Ohio Power Siting Board (OPSB) Case Number 21-348-EL-BNR.
PJM Number:	Construction of the Project will not change the model significantly. It therefore does not need reporting.
2020 LTFR:	The Project was included in the 2020 Long-Term Forecast Report (LTFR), FE-T8, page 87 and 88
Circuit Reference:	Circuit 8481.

Brief Description of the Project:

Duke Energy Ohio proposes to remove and replace six existing structures, install three new, permanent structures and four new mobile structures in conjunction with the Project. Specifically, the Project will include two self-supporting engineered steel poles, nine direct embed steel monopoles, and one h-frame structure, along with approximately 950 feet of new conductor per phase. The Project includes the temporary use of a mobile substation and transmission connection while the distribution Half Acre Substation is constructed. The Project is located entirely within an existing Duke Energy Ohio right of way (ROW) and easement.

The proposed Project is necessary in order to maintain the integrity of existing Duke Energy Ohio structures and ensure adequate power supplies to current and future utility customers in the area.

The Project is located north of the James A Rhodes Appalachian Highway (SR 32) and west of Half-Acre Road in Williamsburg Township, Clermont County, Ohio (Figures 1 and 2).

Construction Notice Requirement:

This Project qualifies as a Construction Notice filing because it meets the requirements outlined in O.A.C. 4906-1-01, Appendix A, item (2)(a). Item (2)(a) *Application Requirement Matrix for Electric Power Transmission Lines:*

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

   (a) Line(s) not greater than 0.2 miles in length.

4906-6-05(B)(2): Statement of Need

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

Reliability is a responsibility that Duke Energy Ohio takes very seriously. The Company is dedicated toward modernizing, improving, and upgrading the electric system to meet the growing energy needs of communities. As part of the Company's commitment to provide reliable energy for homes, schools, and businesses, Duke Energy Ohio is planning the construction for a new distribution substation in Clermont County, Ohio. An existing 138kV transmission line and associated structures will be relocated to provide electricity to a new electric distribution substation (Half Acre Substation). The relocated electric transmission line will provide electricity to the new distribution Half Acre Substation, which will reliably serve the growing energy needs of the community resulting in part from developing businesses in the area as the county continues to become an ideal attraction for new companies. The Project will be built on Duke Energy-owned property.

4906-6-05(B)(3): Project Location

The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the Project area.

The location of the Project is depicted in Attachment A: Figures 1 and 2. Figure 1 displays the Project's general vicinity depicted on a United States Geological Survey (USGS) quadrangle topographic map. Figure 2 depicts the planned transmission line location, associated GIS layers, and additional details depicted on an aerial imagery map.

The location of the Project in relationship to existing transmission lines and substations is shown on Figure 2.

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

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

The proposed Project will occur entirely within existing Duke Energy Ohio property and easements. No long-term impacts to adjacent properties are anticipated as a result of the Project. Other alternative routes were not considered because the Project was able to take advantage of existing easements and avoid further impacts to ecological resources.

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

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

The Project is located entirely on Duke Energy Ohio property (see Figure 2). Any impacted property owner(s) will be notified prior to construction activities. Further information on the ongoing status of this Project and other Duke Energy Projects can be found at the following website:

www.duke-energy.com/HalfAcre.

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

The applicant shall provide an anticipated construction schedule and proposed in-service date of the project.

Construction is scheduled to begin in October 2021 pending approval of this Construction Notice. The Project is anticipated to be completed and the line in service by October 2022.

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

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

Figures 1 and 2, in Attachment A – Figures, depict the general location of the Project. Figure 1 shows the general Project vicinity on a United States Geological Survey (USGS) quadrangle topographic map. Attachment A, Figure 2, depicts the structure replacement location on an aerial image, with associated GIS layers, and additional features in the Project vicinity.

4906-6-05(B)(8): Property Agreements

The applicant shall provide a list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the

facility and a list of the additional properties for which such agreements have not been obtained.

The proposed Project is located entirely within existing Duke Energy Ohio property and easements.

4906-6-05(B)(9): Technical Features

The Project involves the removal and replacement of six existing structures, installation of three new permanent structures and four new mobile structures. Specifically, the Project will include two self-supporting engineered steel poles, nine direct embed steel monopoles, one h-frame structure, along with approximately 950 feet of new conductor. The Project also includes a temporary connection from the 138 kV conductor to a mobile substation on three direct embed steel monopoles while the permanent distribution Half Acre Substation is constructed. The three direct embed steel poles to the mobile substation will be removed once the permanent connection is made to the Half Acre Substation. General transmission line alignment and structure locations are provided in Attachment A – Figures.

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

The applicant shall describe the following information regarding the technical features of the project:

Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

Voltage:	138-kV
Structure Type:	Direct embed steel monopole, direct embed steel h-frame, and engineered pole with foundation.
Conductors:	Existing conductor will be transferred which is three 954 AAC 45 strand; new taps will be three 954 ACSR 45x7 "Rail"; temporary mobile connection will be 4/0 ACSR 6X1 "Penguin"
Static Wire:	Existing 1/0 ACSR will be transferred. New tap will be one AlumaCore 99/669-27
Insulators:	138-kV glass insulators and 138-kV polymer post insulators
ROW Land Requirements:	Duke Energy Ohio owned property and existing easements

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

Information concerning the electric and magnetic fields are not required as the Project is not located within 100 feet of an occupied residence or institution.

4906-6-05(B)(9)(c): Project Cost

The estimated capital cost of the project.

The estimated cost for the Project is approximately $1,312,561.

4906-6-05(B)(10): Social and Ecological Impacts

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

4906-6-05(B)(10)(a): Land Use Characteristics

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

The Project is located in Williamsburg Township, Clermont County, Ohio. Williamsburg Township, which covers approximately 2.54 square miles, has a population of 5,746 people based on 2010 census data. The land use immediately surrounding the Project is predominantly undeveloped agricultural land.

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

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

The Project is located entirely in existing Duke Energy Ohio ROW and easement. Agricultural land dominates the majority of the Project area. No agricultural properties are registered as an agricultural district as defined by Chapter 929 of the Ohio Revised Code. Parcel Number 523508H110 encompassing approximately 7.46 acres of the Project Area is actively farmed and contains vacant land State Use Codes.

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

Provide a description of the applicant's investigation concerning the presence or absence of significant archaeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

Cardno conducted a Phase 1 archaeological reconnaissance for the Half Acre Substation Transmission Line Relocation Project in Clermont County, Ohio. Background research conducted in February 2021 focused on a 1.6 km (1 mi) study area around the proposed project footprint. The records check found no previously recorded cultural resources located in or adjacent to the proposed Project. A small portion of the Project Area was previously investigated in 1978; however, the survey methodology employed during this time period typically does not align with modern archaeological survey methodology.

Cardno conducted the Phase I fieldwork on May 21, 2021. The goal of this survey was to identify cultural resources that may be affected by the proposed Project activities. The Project Area consists of row crop agricultural land, remnant grassy areas, and roadside right-of-way. No new archaeological sites were identified during the Phase I survey. Based on the results of the field

reconnaissance and background research, no further archaeological work is recommended within the Project Area for the project to proceed as planned.

These recommendations are based on the following regulations. Pursuant to Ohio Revised Code §149.53, if archaeological artifacts or human remains are identified during project activities in any location, work within the area must stop and the OH-SHPO must be notified within two business days. In addition, recommendations are based on the current limits of construction. If Project plans should change, further archaeological work may be necessary. The full Cultural Resources Phase 1 archaeological reconnaissance report can be found in Attachment D.

Table 1-1 Previously Recorded Ohio Archaeological Inventory Sites in the 1.6 km (1 mi) study area

Site Number	Site Type	Site Age	NRHP Eligibility
33-CT-0728	Historic Scatter	Historic 19th to 20th Century	Ineligible
33-CT-0729	Prehistoric Isolate and Historic Scatter	Unidentified Prehistoric, Historic 20th Century	Ineligible

4906-6-05(B)(10)(d): Local, State, and Federal Agency Correspondence

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

An Isolated Wetland Permit from the Ohio Environmental Protection Agency (Ohio EPA) will be submitted upon receipt of the approved Jurisdictional Determination from the U.S. Army Corps of Engineers for the proposed filling of 0.08 acres of palustrine emergent wetland (Wetland 1) associated with the Half Acre Substation Transmission Line Relocation Project.

A National Pollutant Discharge Elimination System (NPDES) Construction Site General Permit from the Ohio EPA was submitted on June 1, 2021. A copy of the OEPA application receipt is available in Attachment E (Stormwater Pollution Prevention Plan, Appendix E).

A Site Development Permit from the Clermont County earth disturbing activities will be submitted in June 2021 for the purpose of developing a commercial, industrial, or subdivision development.

The Project area is not located within a 100-year floodplain therefore the Project will not require a "no rise" certification and/or elevation certificate from the Ohio Department of Natural Resources (ODNR) for development within the floodplain. Likewise, the Project will not require a Flood Plain Development Permit from the Clermont County Floodplain Administrator for development within the floodplain.

Duke Energy Ohio has reviewed the clearance requirement on the proposed structures through the Federal Aviation Administration (FAA) and the Ohio Department of Transportation (ODOT) for no-hazard determinations to navigable airspace and no permits are necessary for the proposed project.

No other local, state or federal permit or other authorizations are required for the Project.

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

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

Several sources of information were consulted to further define the potential habitat of listed species that occur within the county of the Project. Attachment B – Agency Coordination Letters, contains a list of the Rare Threatened Endangered (RTE) species known to occur within Clermont County and their potential to occur within the Project area based on their habitat requirements and observations during the field survey. Further, Duke Energy Ohio will conform to seasonal tree clearing (October 1 – March 31) restrictions and recommendations made by the USFWS during agency coordination.

Coordination with the U.S. Fish and Wildlife Service (USFWS) and the ODNR Division of Wildlife (DOW) was initiated on April 6, 2021. A copy of the USFWS response letter was received on April 13, 2021. A copy of the USFWS response letter and ODNR-DOW coordination receipt are included in Attachment B – Agency Coordination Letters.

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

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

Duke Energy Ohio hired Cardno to conduct an investigation for areas of ecological concern within the Project area. As a part of Cardno's investigation, a request was submitted to the ODNR Environmental Review Services and the USFWS on April 6, 2021, to research the presence of any unique ecological sites, geological features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forest, national wildlife refuges, or other protected areas within 1 mile of the Project, using the ODNR Natural Heritage Database. A copy of the USFWS response letter and ODNR-DOW coordination receipt are included in Attachment B – Agency Coordination Letters.

Cardno conducted a wetland delineation and stream assessment of the Project area. Cardno's investigation included approximately 9.44 acres of existing Duke Energy Ohio property. During the investigation, Cardno identified three wetlands within the Project area. Impacts to isolated 'waters of the State' are anticipated as a result of the Project. No impacts to RTE habitats are expected. See Attachment C, Regulated Waters Delineation Report.

Cardno also identified 100-year floodplains using the FEMA National Flood Hazard Layer within the Project area. No 100-year floodplains were identified within the Project area. Refer to Attachment A – Figures, Figure 2.

4906-6-05(B)(10)(g): Unusual Conditions

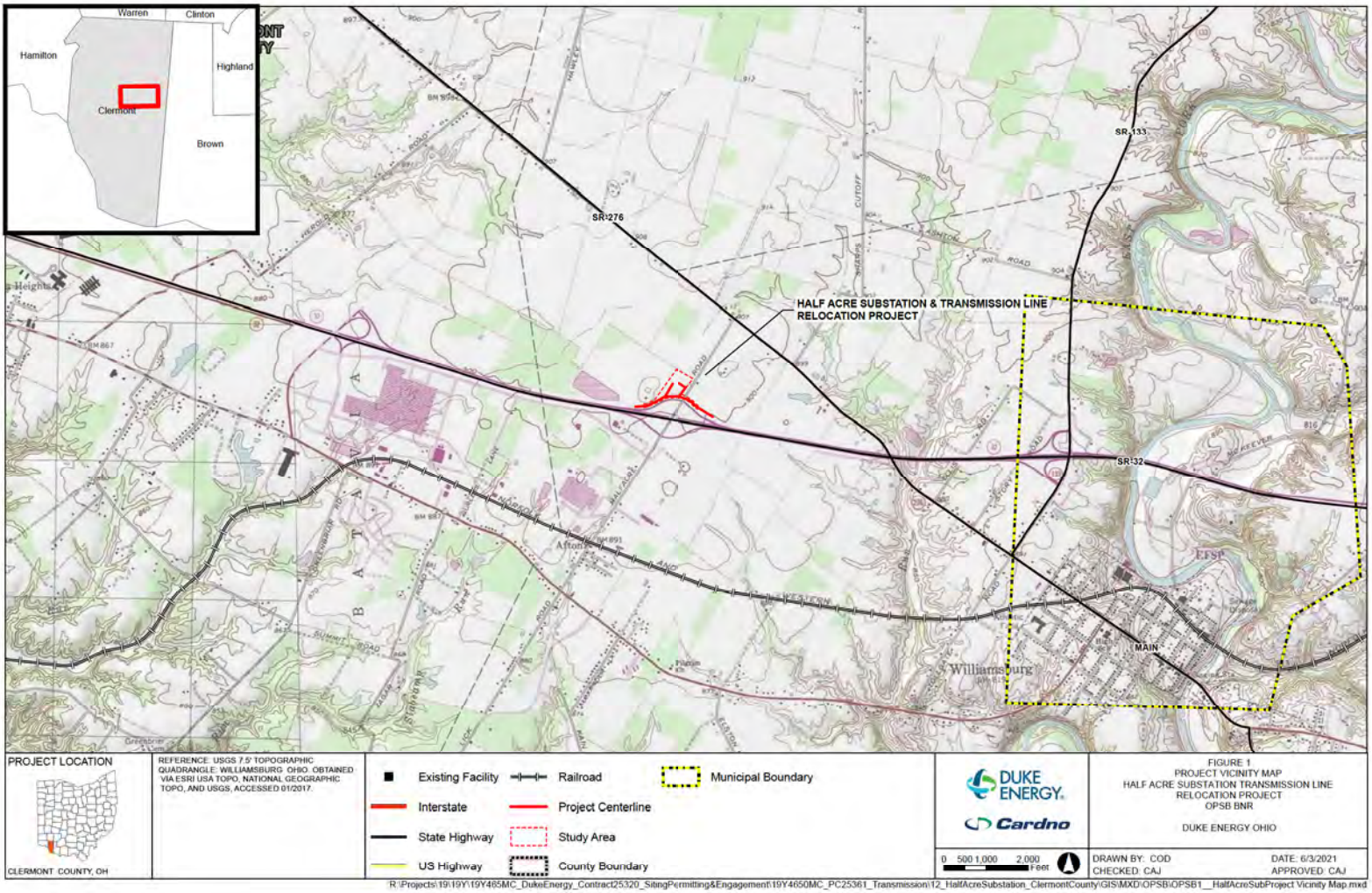
Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

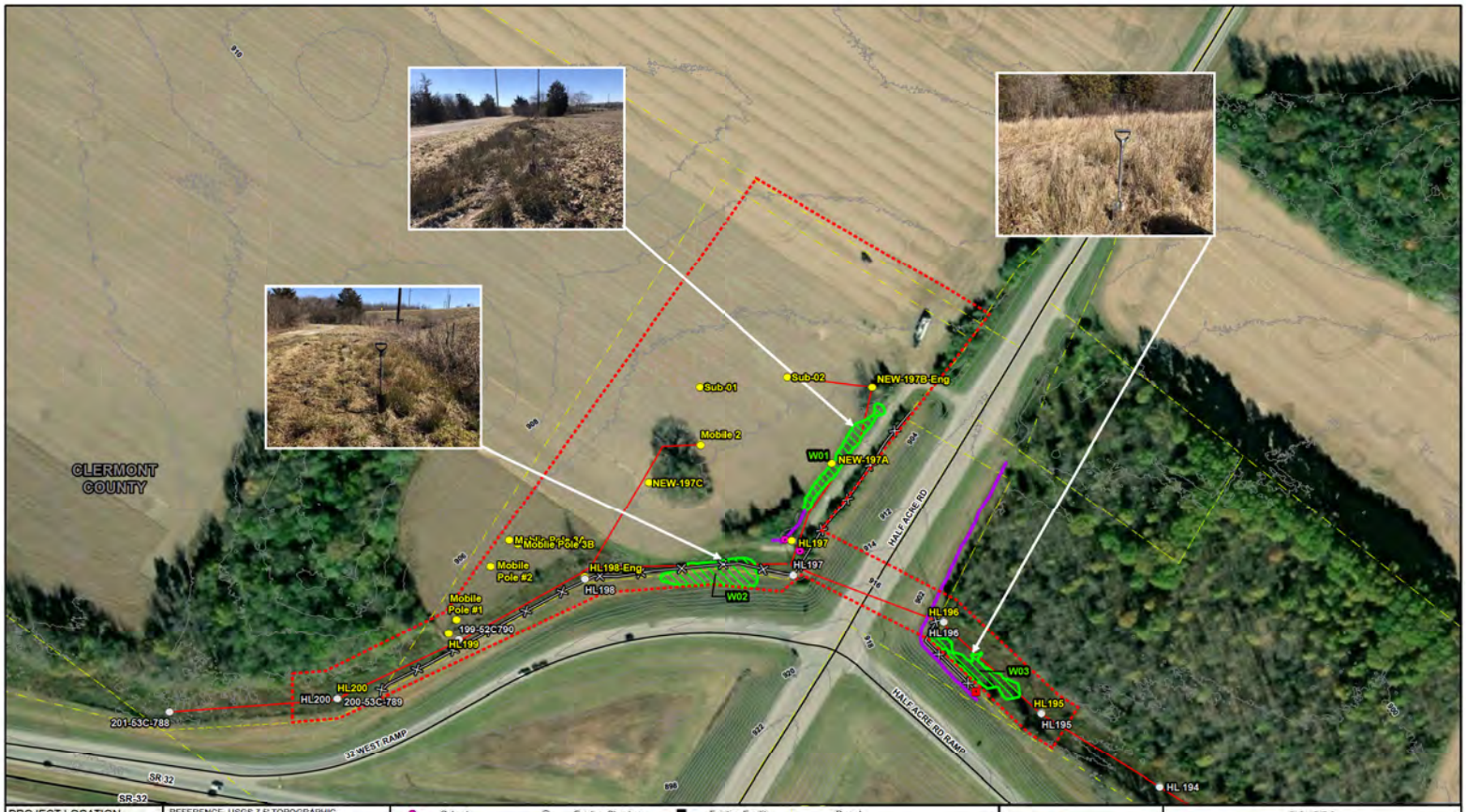
To the best of Duke Energy Ohio's knowledge, no unusual conditions exist that would result in environmental, social, health, or safety impacts. Construction and operation of the proposed Project will meet all applicable safety standards established by the Occupational Safety and Health Administration and will be in accordance with the requirements specified in the latest revision of the National Electric Safety Code as adopted by the Public Utilities Commission of Ohio.

4906-6-07: Service and Public Distribution of Accelerated Certification Applications

Copies of this Construction Notice will be sent to the appropriate Clermont County public officials as well as to the Clermont County Public Library - Williamsburg Branch, prior to construction activities. Information on how to request an electronic or paper copy of the Construction Notice as well as additional information on the ongoing status of this Project can be found at the following website: www.duke-energy.com/HalfAcre.

Attachment A – Figures


Warren
Clinton
Hamilton
Highland
Clermont
Brown
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION PROJECT
SR-276
SR-133
SR-32
MAIN
Williamsburg
Afton
PROJECT LOCATION
CLERMONT COUNTY, OH
REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS; ACCESSED 01/2017.
Existing Facility
Interstate
State Highway
US Highway
Railroad
Project Centerline
Study Area
County Boundary
Municipal Boundary
DUKE ENERGY.
Cardno
0 500 1,000 2,000 Feet
FIGURE 1
PROJECT VICINITY MAP
HALF ACRE SUBSTATION TRANSMISSION LINE RELOCATION PROJECT
OPSB BNR
DUKE ENERGY OHIO
DRAWN BY: COD
CHECKED: CAJ
DATE: 6/3/2021
APPROVED: CAJ
R:\Projects\19\19Y\19Y465MC_DukeEnergy_Contract25320_SitingPermitting&Engagement\19Y4650MC_PC25361_Transmission\12_HalfAcreSubstation_ClermontCounty\GIS\MXD\OPSB\OPSB1__HalfAcreSubProject Vicinity Map.mxd



PROJECT LOCATION

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017.

Culvert
Stormwater Inlet
Ditch
Fence
Delineated Wetland
Existing Structure
Proposed Structure
Floodway
100-Year Floodplain
2-ft Contours
Existing Facility
Study Area
NHD Flowline
Project Centerline
NWI Wetlands
Parcels
Potential Access
State Highway
Interstate

DUKE ENERGY.
Cardno

0 30 60 120 Feet

FIGURE 2
ENVIRONMENTAL ACCESS PLAN
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION PROJECT
OPSB BNR

DUKE ENERGY OHIO

DRAWN BY: COD
CHECKED: CAJ
DATE: 6/7/2021
APPROVED: CAJ

R:\Projects\19\19Y\19Y465MC_DukeEnergy_Contract25320_SitingPermitting&Engagement\19Y4650MC_PC25361_Transmission\12_HalfAcreSubstation_ClermontCounty\GIS\MXD\OPSB\OPSB2__HalfAcreSubEnvironmental Access Plan.mxd

Attachment B – Agency Coordination Letters

Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR MARY MERTZ, DIRECTOR

Jeff Johnson, Chief
Division of Natural Areas & Preserves
2045 Morse Rd, Building A
Columbus, Ohio 43229

13 April 2021

Cori Jansing
Cardno, Inc.
11121 Canal Rd.
Cincinnati, OH 45241

Dear Ms. Jansing,

I have reviewed the Natural Heritage Database for the Half-Acre Substation and Transmission Line Relocation project area, including a one-mile radius, in Williamsburg Township, Clermont County, Ohio. We have no records for rare or endangered species or other significant features within the project area or a one mile radius. However, please note the location of East Fork State Park (ODNR Division of Parks & Watercraft), within a one mile radius and as shown in green on the attached map.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does 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.

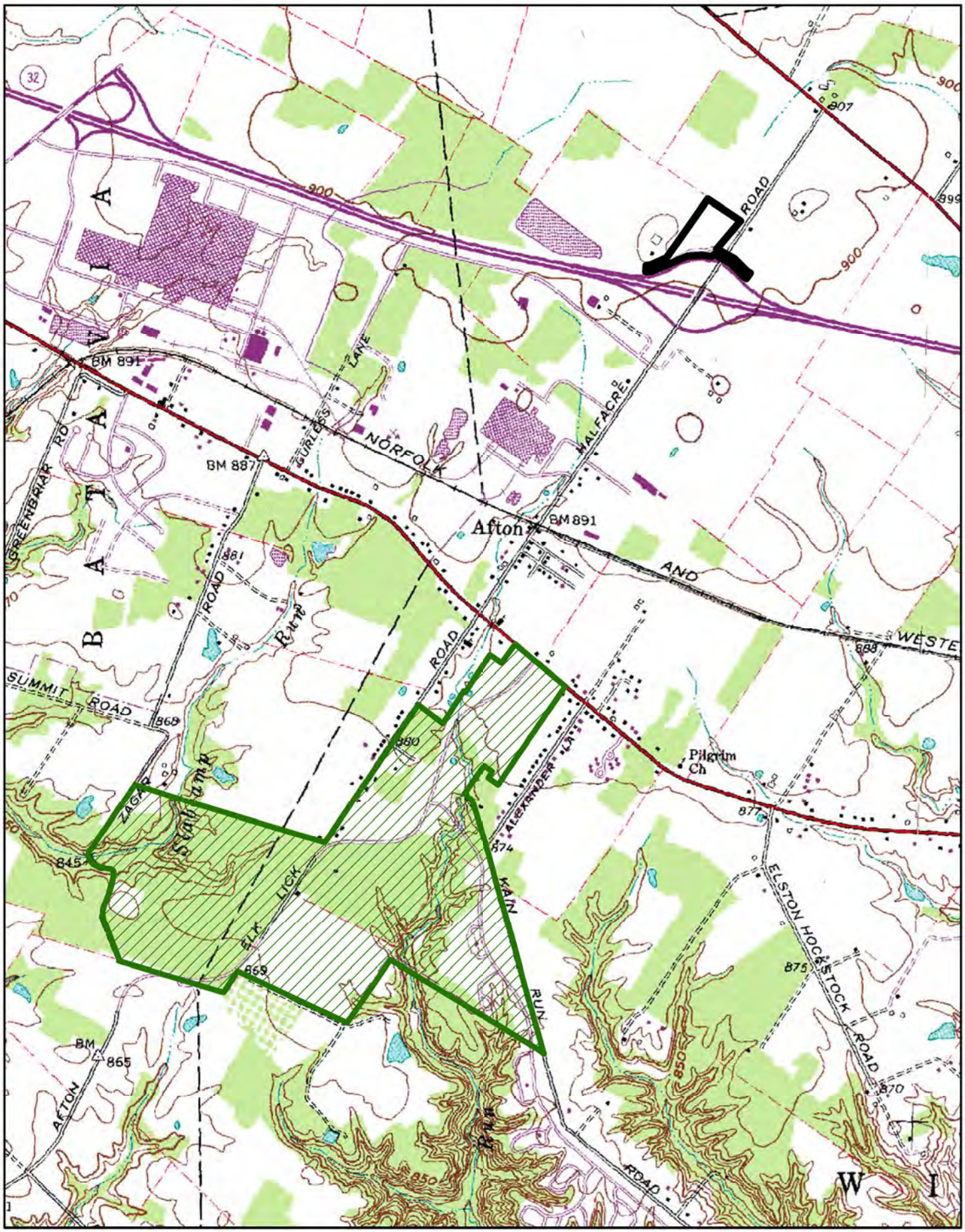
Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

Debbie Woischke

Debbie Woischke
Ohio Natural Heritage Program

Half-Acre Substation and Transmission Line Relocation



Cori Jansing

From: Ohio, FW3 <ohio@fws.gov>
Sent: Tuesday, April 13, 2021 2:42 PM
To: Cori Jansing
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate; Vandewater, Dane G; Macenzie Reed
Subject: Half Acre Substation and Transmission Line Relocation, (Project M190064) Clermont County, Ohio

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

TAILS# 03E15000-2021-TA-1144

Dear Ms. Jansing,

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still

prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.
If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

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

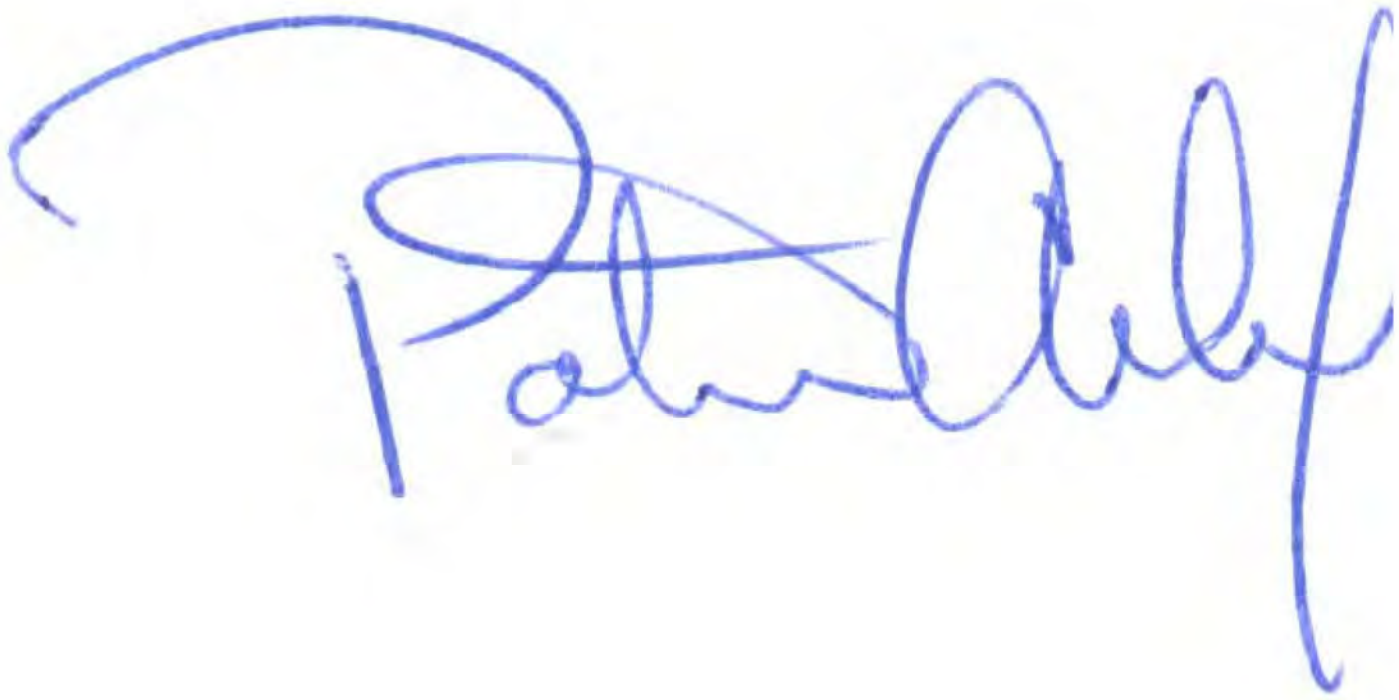
Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing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

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

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

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

Sincerely,



Patrice M. Ashfield
Ohio Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Kate Parsons, ODNR-DOW

Attachment C – Regulated Waters Delineation Report

Regulated Waters Delineation Report

Duke Energy Half Acre Substation & Transmission Line Relocation (M1900064) Project

Williamsburg Township, Clermont County, Ohio

April 5, 2021

Cardno

Document Information

Prepared for	Duke Energy Ohio
Client Contact	Dane Vandewater (Duke Energy)
Project Name	Half Acre Substation & Transmission Line Relocation (M190064) Project
Project Number	Cardno #J19Y465012
Project Manager	Cori Jansing (Cardno)
Date	April 7, 2021

Prepared for:

Duke Energy Ohio
139 E. 4th Street, Cincinnati, Ohio 45202

Prepared by:

Cardno
11121 Canal Road, Cincinnati, Ohio 45241

Table of Contents

Appendices

Tables

Figures

Acronyms

APA	Administrative Procedure Act
BF	Bank Full
CFR	Code of Federal Regulations
CWA	Clean Water Act
DBH	Diameter at Breast Height
DP	Data Point
EPA	U.S. Environmental Protection Agency
ETR	Endangered, Threatened, and Rare
FAC	Facultative Plant
FACU	Facultative Upland Plant
FACW	Facultative Wetland Plant
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GIS	Geographical Information SystemAcronyms, continued
MS4	Municipal Separate Storm Water Sewer Systems
NHD	National Hydrography Dataset
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Department of Agriculture Natural Resources Conservation Service
NWP	Nationwide Permit
NWPL	National Wetland Plant List
OBL	Obligate Wetland Plant
OEPA	Ohio Environmental Protection Agency
ODNR	Ohio Department of Natural Resources
OHWM	Ordinary High Water Mark
PEM	Palustrine Emergent Wetland
PFO	Palustrine Forested Wetland
PLSS	Public Land Survey Section

PSS	Palustrine Shrub Scrub Wetland
RGP	Regional General Permit
SNE	Significant Nexus
SWANCC	Solid Waste Agency of Northern Cook County
TNW	Traditional Navigable Water
TOB	Top of Bank
UPL	Upland Plant
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WOTUS	Waters of the United States
WQC	Water Quality Certification

1 Introduction

Cardno was contracted to perform a water resource inventory, including wetlands and streams, which are located within the Duke Energy Ohio Half Acre Substation & Transmission Line Relocation (M190064) Project Study Area and potential access points (9.44) in Williamsburg Township, Clermont County, Ohio (Figure 1). The fieldwork for this task was performed on March 2, 2021.

The total size of the Study Area was approximately 9.44 acres with an actual Project earth disturbance potential of approximately 8.26 acres. Specifically, the Study Area is located north of the James A Rhodes Appalachian Highway (SR 32) and west of Half-Acre Road. (39.072294, -84.093420). The Study Area consisted of four habitat types: agricultural field, maintained right-of-way (ROW), isolated clusters of scrub/shrub vegetation, and emergent wetland. The project area is located within the East Fork Little Miami River below Cloverlick Creek to below Lucy Run (14-digit HUC 05090202120030) and East Fork Little Miami River below S.R. 276 at Williamsburg to above Cloverlick Creek (14-digit HUC 0509022110030)

This report identifies the jurisdictional status of aquatic features identified within the Study Area based on Cardno's best professional understanding and interpretation of the *Corps of Engineers' Wetland Delineation Manual* (Environmental Laboratory, 1987) and U.S. Army Corps of Engineers' (USACE) guidance documents and regulations. Jurisdictional determinations for other "waters of the U.S." were made based on definitions and guidance found in 33 CFR 328.3, USACE Regulatory Guidance Letters, and the wetland delineation manual. The USACE administers Section 404 of the Clean Water Act (CWA), which regulates the discharge of fill or dredged material into all "waters of the U.S.," and is the regulatory authority that must make the final determination as to the jurisdictional status of the Study Area.

2 Regulatory Definitions

2.1 Waters of the United States

"Waters of the U.S." are within the jurisdiction of the USACE under the CWA. "Waters of the U.S." is a broad term, which includes waters that are used or could be used for interstate commerce. This includes wetlands, ponds, lakes, territorial seas, rivers, tributary streams including any definable intermittent waterways, and some ditches below the ordinary high water mark (OHWM). Also included are manmade water bodies such as quarries and ponds, which are no longer actively being mined or constructed and are connected to other "waters". Wetlands, mudflats, vegetated shallows, riffle and pool complexes, coral reefs, sanctuaries, and refuges are all considered special aquatic sites, which involve more rigorous regulatory permitting requirements. A specific, detailed definition of "waters of the U.S." can be found in the Federal Register (33 CFR 328.3).

On January 9, 2001, the U.S. Supreme Court issued a decision, Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers (No. 99-1178). The decision reduced the regulation of isolated wetlands under Section 404 of the CWA, which assigned the USACE

authority to issue permits for the discharge of dredge or fill material into "waters of the U.S.". Prior to the SWANCC decision, the USACE had adopted a regulatory definition of "waters of the U.S." that afforded federal protection for almost all of the nation's wetlands. The Supreme Court decision interpreted that the USACE's jurisdiction was restricted to navigable waters, their tributaries, and wetlands that are adjacent to these navigable waterways and tributaries. The decision leaves the majority of "isolated" wetlands unregulated by the CWA. Therefore, most wetlands that are not adjacent to, or contiguous with, any other "waters of the U.S." via a surface drain such as a swale, ditch, or stream are considered isolated and thus no longer jurisdictional by the USACE.

On June 19, 2006, the U.S. Supreme Court issued decisions in regards to John A. Rapanos v. United States (No. 04-1034) and June Carabell v. United States (04-1384), et al. The plurality decision created two 'tests' for determining CWA jurisdiction: the permanent flow of water test (set out by Justice Scalia) and the "significant nexus" test (set out by Justice Kennedy). On June 5, 2007 the USACE and U.S. Environmental Protection Agency (EPA) issued joint guidance on how to interpret and apply the Court's ruling. According to this guidance, the USACE will assert jurisdiction over traditionally navigable waters, adjacent wetlands, and non-navigable tributaries of traditionally navigable waters that have "relatively permanent" flow, and wetlands that border these waters, regardless of whether or not they are separated by roads, berms, and similar barriers. In addition, the USACE will use a case-by-case "significant nexus" analysis to determine whether waters and their adjacent wetlands are jurisdictional. A "significant nexus" can be found where waters, including adjacent wetlands, alter the physical, biological, or chemical integrity of the traditionally navigable water based on consideration of several factors.

In January 2015 an EPA sponsored publication, *Connectivity of Streams & Wetlands to Downstream Waters: A Review & Synthesis of the Scientific Evidence* (EPA, 2015), emphasized how streams, nontidal wetlands, and open waters in and outside of riparian areas and floodplains effect downstream waters such as rivers, lakes, estuaries, and oceans.

On May 27, 2015 the EPA released a statement that a new Clean Water Rule typically referred to as, "The Waters of the United States (WOTUS) Rule" was finalized and that it would "not create any new permitting requirements and maintains all previous exemptions and exclusions" (epa.gov). The rule would only protect waters that have historically been covered by the Clean Water Act. The intent was to clearly define:

- Jurisdictional limits of tributaries of navigable waterways;
- Set boundaries on covering nearby waters;
- Identify specific national water treasures by name (prairie potholes, etc.);
- Clearly define when a ditch is jurisdictional, and when it is not;
- Maintain status that waters within Municipal Separate Storm Water Sewer Systems (MS4) are not jurisdictional; and
- Reduce the use of case-specific analysis of waters.

Also on May 27, 2015 a publication, *Technical Support Document for the Clean Water Rule: Definition of Waters of the United States* (EPA, 2105), was released discussing in detail why the significant nexus (SNE) between one water and another is important. It specifically ties distances

to the various types of waters mentioned within the Code of Federal Regulations [33 CFR 328.3(a)(1) through (a)(8)]. For example, the document states "Waters located within the 100-year floodplain of a traditional navigable water, interstate water, or the territorial seas and waters located more than 1,500 feet and less than 4,000 feet from the lateral limit of an (a)(1) or (a)(3) water may still be determined to have a significant nexus on a case-specific basis under paragraph (a)(8) of the rule and, thus, be a "water of the United States" (EPA 2015).

On June 29, 2015 the new Clean Water Rule was entered into the Federal Register (40 CFR Parts 110, 112, 116, et al. Clean Water Rule: Definition of "waters of the United States"; Final Rule). This report will refer to this rule as "June 29, 2015 WOTUS Rule". This rule includes exact distances mentioned in the May 27, 2015 Technical Support Document as it relates to adjacent waters, including the following:

- Waters within 100 ft. of jurisdictional waters;
- Waters within the 100-year floodplain to a maximum of 1,500 feet from the ordinary high water mark (OHWM);
- Waters within the 100-year floodplain with a SNE to the Traditional Navigable Water (TNW); and
- Waters with a SNE within 4,000 ft. of jurisdictional waters.

On October 9, 2015 the U.S. Court of Appeals for the Sixth Circuit (Court) issued a nationwide stay against the enforcement of the June 29, 2015 WOTUS Rule. The Court stated, "...we conclude that...Justice Kennedy's opinion in *Rapanos* represents the best instruction on the permissible parameters of "waters of the United States" as used in the Clean Water Act, it is far from clear that the new Rule's distance limitations are harmonious with the instruction.

Moreover, the Court stated that the rulemaking process by which the distance limitations were adopted is facially suspect. Petitioners contend the proposed rule that was published, on which interested persons were invited to comment, did not include any proposed distance limitations in its use of terms like "adjacent waters" and "significant nexus." Consequently, petitioners contend, the Final Rule cannot be considered a "logical outgrowth" of the rule proposed, as required to satisfy the notice-and-comment requirements of the APA, 5 U.S.C. Section 553. As a further consequence of this defect, petitioners contend, the record compiled by respondents is devoid of specific scientific support for the distance limitations that were included in the Final Rule. They contend the Rule is therefore not the product of reasoned decision-making and is vulnerable to attack as impermissibly "arbitrary or capricious" under the APA, 5 U.S.C. Section 706(2)."

On February 28, 2017, President Donald Trump signed Executive Order #13778 titled "Restoring the Rule of Law, Federalism, and Economic Growth by reviewing the 'Waters of the United States' Rule". Section 1(a) states that the EPA "shall review the final rule entitled 'Clean Water Rule: Definition of 'Waters of the United States," 80 Fed. Reg. 37054; and '....shall...publish...proposed rules rescinding or revising, those issuances, as appropriate' [Section 2(b)]."

On April 21, 2020, the EPA and USACE published the Navigable Waters Protection Rule to define "Waters of the United States" (WOTUS) in the Federal Register. This rule became effective on June 22, 2020. The rule limits the federal regulatory authority to wetlands adjacent to or directly

abutting a jurisdictional stream, and to only streams considered perennial or intermittent. No federal guidance is yet published on this rule, and prior guidance will be used until the rule becomes effective.

Until further notice, the April 21, 2020 WOTUS Rule is in effect in Ohio. Furthermore, this report includes a professional opinion as it relates to the April 21, 2020 WOTUS Rule.

2.2 Waters of the State

"Waters of the State" are within the jurisdiction of the Ohio Environmental Protection Agency (OEPA). They are generally defined as surface and underground water bodies, which extend through or exist wholly in the State of Ohio, which includes, but is not limited to, streams and both isolated and non-isolated wetlands. Private ponds, or any pond, reservoir, or facility built for reduction of pollutants prior to discharge are not included in this definition. In addition to "waters of the U.S.", OEPA also regulates and issues permits for isolated wetland impacts.

OEPA relies on the USACE decision regarding wetland determinations and delineations including whether or not a wetland is isolated or non-isolated.

2.3 Wetlands

Wetlands are a category of "waters of the U.S." for which a specific identification methodology has been developed. As described in detail in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987), wetland boundaries are delineated using three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. In addition to the criteria defined in the 1987 Manual, the procedures described in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0* (Environmental Laboratory, 2010) were used to evaluate the Study Area for the presence of wetlands.

2.3.1 Hydrophytic Vegetation

On June 1, 2012, the National Wetland Plant List (NWPL), formerly called the National List of Plant Species that Occur in Wetlands (Reed 1988), went into effect after being released by the U.S. Army Corps of Engineers (USACE) as part of an interagency effort with the U.S. Fish and Wildlife Service (USFWS), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) (Lichvar and Kartesz, 2009). The NWPL, along with the information implied by its wetland plant species status ratings, provides general botanical information about wetland plants and is used extensively in wetland delineation, restoration, and mitigation efforts. The NWPL consists of a comprehensive list of wetland plant species that occur within the United States along with their respective wetland indicator statuses by region. An indicator status reflects the likelihood that a particular plant species occurs in a wetland or upland (Lichvar et al. 2012). Definitions of the five indicator categories are presented below.

> **OBL** (Obligate Wetland Plants): almost always occur in wetlands. With few exceptions, these plants (herbaceous or woody) are found in standing water or seasonally saturated soils (14 or more consecutive days) near the surface. These plants are of four types: submerged, floating, floating-leaved, and emergent.

FACW (Facultative Wetland Plants): usually occur in wetlands, but may occur in non-wetlands. These plants predominately occur with hydric soils, often in geomorphic settings where water saturates the soils or floods the soil surface at least seasonally.

FAC (Facultative Plants): occur in wetlands and non-wetlands. These plants can grow in hydric, mesic, or xeric habitats. The occurrence of these plants in different habitats represents responses to a variety of environmental variables other than just hydrology, such as shade tolerance, soil pH, and elevation, and they have a wide tolerance of soil moisture conditions.

FACU (Facultative Upland Plants): usually occur in non-wetlands, but may occur in wetlands. These plants predominately occur on drier or more mesic sites in geomorphic settings where water rarely saturates the soils or floods the soil surface seasonally.

UPL (Upland Plants): almost never occur in wetlands. These plants occupy mesic to xeric non-wetland habitats. They almost never occur in standing water or saturated soils. Typical growth forms include herbaceous, shrubs, woody vines, and trees.

According to the USACE's Midwest Regional Supplement, plants that are rated as FAC, FACW, or OBL are classified as wetland plant species. The percentage of dominant wetland species in each of the four vegetation strata (tree, shrub/sapling, herbaceous, and woody vine) in the sample area determines the hydrophytic (wetland) status of the plant community. Dominant species are chosen independently from each stratum of the community. In general, dominants are the most abundant species that individually or collectively account for more than 50 percent of the total coverage of vegetation in the stratum, plus any other species that, by itself, accounts for at least 20 percent of the total.

For the purposes of determining dominant plant species, the four vegetation strata are defined. Trees consist of woody species 3 inches or greater in diameter at breast height (DBH). Shrubs and saplings are woody species that are over 1 meter in height and less than 3 inches DBH. Herbaceous species consist of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants less than 1 meter tall. Woody vines consist of vine species greater than 1 meter in height, such as wild grapes.

2.3.2 Hydric Soils

Hydric soils are defined as soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part. In general, hydric soils are flooded, ponded, or saturated for a week or more during the growing season when soil temperatures are above 32 degrees Fahrenheit. The anaerobic conditions created by repeated or prolonged saturation or flooding result in permanent changes in soil color and chemistry, which are used to differentiate hydric from non-hydric soils.

In this report, soil colors are described using the Munsell notation system. This method of describing soil color consists of separate notations for hue, value, and chroma that are combined in that order to form the color designation. The hue notation of a color indicates its relation to red, yellow, green, blue, and purple; the value notation indicates its lightness, and the chroma notation indicates its strength or departure from a neutral of the same lightness.

The symbol for hue consists of a number from 1 to 10, followed by the letter abbreviation of the color. Within each letter range, the hue becomes more yellow and less red as the numbers increase. The notation for value consists of numbers from 0 for absolute black, to 10 for absolute white. The notation for chroma consists of numbers beginning with /0 for neutral grays and increasing at equal intervals. A soil described as 10YR 3/1 soil is more gray than a soil designated 10YR 3/6.

2.3.3 Wetland Hydrology

Wetland hydrology is defined as the presence of water for a significant period of time at or near the surface (within the root zone) during the growing season. Wetland hydrology is present only seasonally in many cases, and is often inferred by indirect evidence. Hydrology is controlled by such factors as seasonal and long-term rainfall patterns, local geology and topography, soil type, local water table conditions, and drainage. Primary indicators of hydrology are inundation, soil saturation in the upper 12 inches of the soil, watermarks, sediment deposits, and drainage patterns. Secondary indicators such as oxidized root channels in the upper 12 inches of the soil, water-stained leaves, local soil survey data, and the FAC-neutral vegetation test are sometimes used to identify hydrology. A primary indicator or two or more secondary indicators are required to establish a positive indication of hydrology.

2.3.4 Wetland Definition Summary

In general, an area must meet all three criteria to be classified as a wetland. In certain problem areas such as seasonal wetlands, which are not wet at all times, or in recently disturbed (atypical) situations, areas may be considered a wetland if only two criteria are met. In special situations, an area that meets the wetland definition may not be within the USACE's jurisdiction due to a specific regulatory exemption.

2.4 Streams, Rivers, Watercourses & Jurisdictional Ditches

With non-tidal waters, in the absence of adjacent wetlands, the extent of the USACE's jurisdiction is defined by the OHWM. USACE regulations define the term "ordinary high water mark" for purposes of the CWA lateral jurisdiction at 33 CFR 328.3(e), which states:

> The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Streams, rivers, watercourse, and ditches within the Study Area were evaluated using the above definition and documented. Waterways that did exhibit an OHWM were recorded and evaluated using the Ohio Environmental Protection Agency's Primary Headwater Habitat Evaluation (HHEI)

or Qualitative Habitat Evaluation Index (QHEI) methodology. If applicable, the results of the HHEI and/or QHEI are presented in Section 3.2.

2.5 Endangered Species Act

Endangered, Threatened, and Rare (ETR) species are protected at both the state and federal level (ORC 1531.25 and 50 CFR 17.11 through 17.12, respectively). The Ohio Revised Code defines "Take" as to harass, hunt, capture, or kill; or attempt to harass, hunt, capture, or kill.

The USFWS, under authority of the Endangered Species Act of 1973 (16 U.S. Code 1531), as amended, has the responsibility for federally listed species. The Ohio Department of Natural Resources (ODNR) has the responsibility for state listed species.

3 Background Information

3.1 Existing Maps

Several sources of information were consulted to identify potential wetlands and wetland soil units on the site. These include the USFWS's *National Wetland Inventory* (NWI), the USGS's *National Hydrography Dataset* (NHD), and the Natural Resources Conservation Service's (NRCS) *Soil Survey* for this county. These maps identify potential wetlands and wetland soil units on the site. The NHD maps are used to portray surface water. The NWI maps were prepared from high altitude photography and in most cases were not field checked. Because of this, wetlands are sometimes erroneously identified, missed, or misidentified. Additionally, the criteria used in identifying these wetlands were different from those currently used by the USACE. The county soil maps, on the other hand, were developed from actual field investigations. However, they address only one of the three required wetland criteria and may reflect historical conditions rather than current site conditions. The resolution of the soil maps limits their accuracy as well. The mapping units are often generalized based on topography and many mapping units contain inclusions of other soil types for up to 15 percent of the area of the unit. The USACE does not accept the use of either of these maps to make wetland determinations.

3.1.1 National Wetland Inventory

The NWI map of the area (Figure 2) did not identify any wetland features within the Study Area.

3.1.2 National Hydrography Dataset

The NHD map of the area (Figure 2) did not identify any stream features within the Study Area.

3.1.3 Soil Survey

The NRCS Soil Survey identified two (2) soil types located within the Study Area (Figure 3). The following table identifies the soil unit symbol, soil unit name, and whether or not the soil type contains components that meet the hydric soil criteria.

Table 3 – 1 Soil Map Units within the Half Acre Substation & Transmission Line Relocation (M190064) Project Study Area

Symbol	Description	Hydric
Cle1A	Clermont silt loam, 0 to 1 percent slopes	Yes
WsS1A1	Westboro-Schaffer silt loams, 0 to 2 percent slopes	No

4 Methodology and Description

4.1 Regulated Waters Investigation

The delineation of regulated waters within the Study Area was based on the methodology described in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0* (Environmental Laboratory, 2010) as required by current USACE policy.

Prior to the fieldwork, the background information was reviewed to establish the probability and potential location of wetlands on the site. Next, a general reconnaissance of the Study Area was conducted to determine site conditions. The site was then walked with the specific intent of determining wetland boundaries. Data stations were established at locations within and near the wetland areas to document soil characteristics, evidence of hydrology and dominant vegetation. Note that no attempt was made to examine a full soil profile to confirm any soil series designations. However, when possible, soils were examined to a depth of at least 16 inches to assess soil characteristics and site hydrology. Complete descriptions of typical soil series can be found in the soil survey for these counties.

4.1.1 Site Photographs.

Photographs of the site are located in Appendix A. These photographs are the visual documentation of site conditions at the time of inspection. The photographs are intended to provide representative visual samples of any wetlands or other special features found on the site.

4.1.2 Delineation Data Sheets.

Where stations represent a wetland boundary point they are presented as paired data points (dp), one each documenting the wetland and upland sides of the wetland boundary. These forms are the written documentation of how representative sample stations met or did not meet each of the wetland criteria. For plant species included on the National Wetlands Plant List, nomenclature will follow their lead. For all other plants not listed in the NWPL, nomenclature will follow the USDA's Plants Database.

4.2 Technical Descriptions

Cardno was contracted to perform a comprehensive environmental assessment of the Duke Energy Ohio Half Acre Substation & Transmission Line Relocation (M190064) Project. The Project included the review of 9.44 acres (the "Study Area"), located in Williamsburg Township, Clermont County, Ohio (see Figure 1). Specifically, the Study Area is located north of the James A Rhodes Appalachian Highway (SR 32) and west of Half-Acre Road. (39.072294, -84.093420). The Study Area consisted of four habitat types: agricultural field, maintained right-of-way (ROW),

isolated clusters of scrub/shrub vegetation, and emergent wetland. The Half Acre Substation & Transmission Line Relocation (M190064) Project will take place entirely at the Duke Energy Ohio's proposed Half Acre Substation and existing Duke Energy easements. The Study Area is located within the East Fork Little Miami River below Cloverlick Creek to below Lucy Run (14-digit HUC 05090202120030) and East Fork Little Miami River below S.R. 276 at Williamsburg to above Cloverlick Creek (14-digit HUC 0509022110030).

4.2.1 Wetland Descriptions

Wetland 1 (0.08-acre within the Study Area)

Wetland 1 (W01) was small depressional palustrine emergent wetland (PEM) located along the southwest corner of the proposed substation within the Study Area (Figure 4). No surface water connection with any "waters of the U.S." was observed. This wetland should be considered an isolated 'waters of the state.' The ORAM score for W01 was 19, categorizing the wetland as a Category 1, or low quality wetland. A complete ORAM field data sheet is located in Appendix B.

Wetland Data Point
Data Point 01 (DP01)

Dominant vegetation in the vicinity of DP01 included Silky Dogwood (*Cornus amomum*, FACW), Lamp Rush (*Juncus effusus*, OBL), and Chufa (*Cyperus esculentus*, FACW). The plants at this data point qualified as hydrophytic vegetation. The soil from 0 to 18 inches had a matrix soil color of 10YR 5/2 with concentrations in the matrix at 5 percent, and a texture of Silty Clay Loam. The soil at the data point was mapped as Clermont silt loam, 0 to 1 percent slopes (Cle1A), and met the Depleted Matrix (F3) hydric soil criteria. The primary indicator of hydrology observed was High Water Table (A2), and the secondary indicator of hydrology, the FAC-Neutral Test (D5). Water was also observed 2 inches deep at the soil sample location. This data point qualified as a wetland. The complete ACOE wetland delineation data sheet is located in Appendix C.

Upland Data Point
Data Point 02 (DP02)

Dominant vegetation in the vicinity of DP02 included Red Fescue (*Festuca rubra*, FACU), and soybean (*Glycine max*, UPL). In addition, non-dominant vegetation observed included Tall False Rye Grass (*Schedonorus arundinaceus*, FACU), and Allegheny Blackberry (*Rubus allegheniensis*, FACU). The plants in this data point did not quality as hydrophytic vegetation. The soil from 0 – 18 inches had a matrix soil color of 10YR 5/3 with concentrations in the matrix at 2 percent, and a texture of silty clay loam. The soil at the data point was mapped as Clermont silt loam, 0 to 1 percent slopes (Cle1A), and did not meet any hydric soil criteria. No indicators of hydrology were observed. This data point did not meet wetland criteria. The complete ACOE wetland delineation data sheet is located in Appendix C.

Wetland 2 (0.13-acre within the Study Area)

Wetland 2 (W02) was small depressional palustrine emergent wetland (PEM) located along the southern border of the proposed substation extends past the Study Area (Figure 4). No surface water connection with any "waters of the U.S." was observed. This wetland should be considered an isolated 'waters of the state.' The ORAM score for W02 was 21, categorizing the wetland as a Category 1, or low quality wetland. A complete ORAM field data sheet is located in Appendix B

Wetland Data Point
Data Point 03 (DP03)

Dominant vegetation in the vicinity of DP03 included Lamp Rush *(Juncus effusus*, OBL), Chufa (*Cyperus esculentus*, FACW), and Blunt Broom Sedge (*Carex tribulodies*, OBL). In addition, non-dominant vegetation observed included Cress-Leaf Grounsel (*Packera glabella*, FACW), and Frank's Sedge (*Carex frankii*, OBL). The plants at this data point qualified as hydrophytic vegetation. The soil from 0 to 18 inches had a matrix soil color of 10YR 5/2 with concentrations in the matrix at 3 percent, and a texture of silty clay loam. The soil at the data point was mapped as Westboro-Schaffer silt loams, 0 to 2 percent slopes (WsS1A1), and met the Depleted Matrix (F3) hydric soil criteria. Primary indicators of hydrology included Saturation (A3), and secondary indicators of hydrology observed included Crayfish Burrows (C8), Geomorphic Position (D2), and the FAC-Neutral Test (D5). This data point qualified as a wetland.

Upland Data Point
Data Point 02 (DP02)

Dominant vegetation in the vicinity of DP02 included Red Fescue (*Festuca rubra*, FACU), and soybean (*Glycine max*, UPL). In addition, non-dominant vegetation observed included Tall False Rye Grass (*Schedonorus arundinaceus*, FACU), and Allegheny Blackberry (*Rubus allegheniensis*, FACU). The plants in this data point did not quality as hydrophytic vegetation. The soil from 0 – 18 inches had a matrix soil color of 10YR 5/3 with concentrations in the matrix at 2 percent, and a texture of silty clay loam. The soil at the data point was mapped as Clermont silt loam, 0 to 1 percent slopes (Cle1A), and did not meet any hydric soil criteria. No indicators of hydrology were observed. This data point did not meet wetland criteria. The complete ACOE wetland delineation data sheet is located in Appendix C.

Wetland 3 (0.08-acre within the Study Area)

Wetland 3 (W03) was small depressional palustrine emergent wetland (PEM) located along the southeast of the pole replacement corridor within the Study Area (Figure 4). No surface water connection with any "waters of the U.S." was observed. This wetland should be considered an isolated 'waters of the state.' The ORAM score for W02 was 29, categorizing the wetland as a Category 1, or low quality wetland. A complete ORAM field data sheet is located in Appendix B

Wetland Data Point
Data Point 04 (DP04)

Dominant vegetation in the vicinity of DP04 included Lamp Rush (*Juncus effusus*, OBL), Dudley's Rush (*Juncus dudleyi*, FACW), and Allegheny Monkey-Flower (*Mimulus ringens*, OBL). In addition, non-dominant vegetation observed included White Panicled American- Aster (*Symphyotrichum lanceolatum*, FAC), Seedbox (*Ludwigia alternifolia*, OBL), Canadian Goldenrod (*Solidago Canadensis*, FACU), Broom-Sedge (*Andropogon virginicus*, FACU), and Flat-Top Goldentop (*Eutamia graminifolia*, FACW). The plants at this data point qualified as hydrophytic vegetation. The soil from 0 to 18 inches had a matrix soil color of 10YR 5/2 with concentrations in the matrix at 5 percent, and a texture of silty clay loam. The soil at the data point was mapped as Clermont silt loam, 0 to 1 percent slopes (Cle1A), and met the Depleted Matrix (F3) hydric soil criteria. Primary indicators of hydrology included Surface Water (A1), and secondary indicators of hydrology observed included Crayfish Burrows (C8), and the FAC-Neutral Test (D5). This data

point qualified as a wetland. The complete ACOE wetland delineation data sheet is located in Appendix C.

Upland Data Point

Data Point 05 (DP05)

Dominant vegetation in the vicinity of DP05 included Lamp Rush (*Juncus effusus*, OBL), Allegheny Blackberry (*Rubus allegheniensis*, FACU), and Bluejoint (*Calamagrostis Canadensis*, OBL). In addition, non-dominant vegetation observed included White Oldfield American-Aster (*Symphyotrichum pilosum*, FACU), and Broom-Sedge (*Andropogon virginicus*, FACU). The plants at this data point qualified hydrophytic vegetation. The soil from 0 to 18 inches had a matrix soil color of 10YR 5/2 with concentrations in the matrix at 5 percent, and a texture of silty clay loam. The soil at the data point mapped as Clermont silt loam, 0 to 1 percent slopes (Cle1A), and met the Depleted Matrix (F3) hydric soil criteria. Only second indicator the FAC-Neutral Test (D5) was observed. This data point did not meet wetland criteria. The complete ACOE wetland delineation data sheet is located in Appendix C.

4.3 Endangered, Threatened and Rare Species

The potential for listed species known to occur within Warren County were evaluated based on the habitat observed within the Study Area. In addition, high quality natural communities and significant natural habitat areas were documented if encountered. A walking survey of the Study Area was performed in which all observed Endangered, Threatened and Rare (ETR) species or specific known special habitats were noted. Coordination with the U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources (ODNR) Division of Wildlife occurred as it related to the Natural Heritage Database search results for the Study Area (Appendix D).

Tables summarizing the results of ETR species as they relate to the habitat observed within the Study Area are included with this report. Correspondence with the ODNR DOW and the USFWS regarding RTE located within a ½-mile of the Study Area were sent April 6, 2021. The ODNR-DOW data request receipt and USFWS data request letter are located in Appendix D.

Bat Roost Habitat

The Indiana bat (*Myotis sodalis*, federally endangered) and northern long-eared bat (*Myotis septentrionalis*, federally threatened) are protected under the Endangered Species Act, which is overseen by the USFWS. Typical guidance from USFWS regarding potential bat roost trees is avoidance of cutting trees from April through October. The Study Area was assessed for potential bat roosting habitat with respect to any indicated clearing activities. Potential bat roost trees include dead or dying trees (including live shagbark hickories) with at least 10-percent exfoliating bark, a diameter at breast height (DBH) of at least 3 inches, and solar exposure for maternity roost trees (the tree is on a wooded edge or in a canopy gap). If applicable, correspondence from USFWS regarding Indiana bat and northern long-eared bat is included within Appendix D.

Low quality bat roost habitat was observed within the scrub/shrub that contained isolated tree clusters along the southern boundary of the Half Acre Substation & Transmission Line Relocation (M190064) Project Study Area.

Running Buffalo Clover Habitat

Running buffalo clover (*Trifolium stoloniferum*, federally endangered) is protected under the Endangered Species Act, which is overseen by the USFWS. Typical guidance from USFWS regarding potential running buffalo clover habitat is avoidance or relocation. Potential running buffalo clover habitat includes partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Periodic disturbance and a somewhat open habitat is needed for running buffalo clover to flourish but cannot tolerate full-sun, full-shade, or severe disturbance.

Based on our field inspection and our best professional judgment, no running buffalo clover habitat or individuals were observed within the Half Acre Substation & Transmission Line Relocation (M190064) Project Study Area. The scrub-shrub that contained isolated tree clusters understory vegetation contained a closed canopy and the urban turf was frequently maintained and contained full-sun.

5 Jurisdictional Analysis

5.1 U.S. Army Corps of Engineers

The USACE has authority over the discharge of fill or dredged material into "waters of the U.S.". This includes authority over any filling, mechanical land clearing, or construction activities that occur within the boundaries of any "waters of the U.S.". A permit must be obtained from the USACE before any of these activities occur. Permits can be divided into two general categories: Individual Permits and Nationwide Permits.

Individual Permits are required for projects that do not fall into one of the specific Nationwide Permits or are deemed to have significant environmental impacts. These permits are much more difficult to obtain and receive a much higher level of regulatory agency and public scrutiny and may require several months to more than a year for processing.

Nationwide Permits have been developed for projects that meet specific criteria and are deemed to have minimal impact on the aquatic environment. There are currently 52 Nationwide Permits for qualifying activities with 31 Nationwide Permit General Conditions that must be satisfied in order to receive NWP consideration from the USACE.

5.2 Ohio Environmental Protection Agency

The OEPA is responsible for issuing Clean Water Act (CWA) Section 401 permits known as Water Quality Certifications (WQC) for all impacts to "waters of the State of Ohio." This includes authority over any dredging, filling, mechanical land clearing, impoundments or construction activities that occur within the boundaries of any "waters of the State," including those isolated waters not otherwise regulated by the USACE.

The OEPA issues Section 401 WQC in conjunction with the USACE' Section 404 permits. A Section 401 Water Quality Certification must be received before the USACE can issue any

Section 404 Department of the Army Permit. The OEPA must issue Individual Section 401 WQC for all Individual Section 404 Permits.

Water quality certification may be granted, without notification to the OEPA, if the project falls under the NWP limitations described above. In order to qualify for this granted certification, all prior-authorized and *de minimis* Ohio State Certification General Limitations and Conditions as published by the OEPA must be satisfied.

The OEPA also requires notification for all impacts to isolated wetlands, which includes a permit application and mitigation plan pursuant to Section 6111 of Ohio Revised Code (ORC).

6 Summary and Conclusion

6.1 Summary

Cardno inspected the Half Acre Substation & Transmission Line Relocation (M190064) Project Study Area on March 2, 2021. Table 6-1 summarizes the potentially regulated waters delineated within the Study Area.

Table 6-1 Features Identified within the Half Acre Substation & Transmission Line Relocation (M190064) Project Study Area

Feature Name	NWI Identified	Feature Class	Regulatory Status[1,2]	ORAM Score	Acreage (AC)
Wetland 1	No	PEM	Isolated	19	0.08
Wetland 2	No	PEM	Isolated	21	0.13
Wetland 3	No	PEM	Isolated	29	0.08
TOTALS		Wetland	PEM	Non-JD	0.29

[1] Regulatory Status is based on our "professional judgment" and experience; however the USACE makes the final determination.

[2] Waters identified as federally non-jurisdictional under Section 404 of the Clean Water Act have the potential to be considered "waters of the State" under Section §6111.01 of the Ohio Revised Code.

6.1.1 Endangered, Threatened, and Rare Species

Several sources of information were consulted to further define the potential habitat of listed species that occur within the county of the Study Area. The table presented in Appendix D contains the list of ETR species known to occur within Clermont County and their potential to occur within the Study Area based on their habitat requirements and field observations. There was no running buffalo clover habitat found within the Study Area.

6.1.2 Indiana Bat and Northern Long-eared Bat Roost Habitat

The entire Study Area was surveyed to identify potential Indiana bat and northern long-eared bat roost trees. Based on our field inspection and our best professional judgment, there are no potential roost or maternity roost trees suitable for harboring Indiana bats and northern long-eared bats within the Study Area. Low quality bat roost habitat was identified within the scrub/shrub that contained isolated tree clusters along the southern boundary of the Half Acre Substation & Transmission Line Relocation (M190064) Project Study Area.

Generally, the USFWS standard recommendation is that all tree clearing activities for this habitat shall occur between October 1 and March 31, during the hibernation period of listed species. If tree clearing cannot be completed within this seasonal window, additional surveys may be required in order to perform the work during the roosting season.

The USFWS is the regulatory authority that makes the final determination as to the status of the Indiana bat and northern long-eared bat in the Study Area. A letter based on the field observations was submitted to the USFWS for concurrence on April 6, 2021. The USFWS data request letter is located in Appendix D.

6.2 Conclusion

Three (3) emergent wetlands are likely to be considered as isolated 'waters of the State' subject to OEPA's Isolated Wetland Permit were identified within the Study Area.

A permit must be obtained from the USACE and the OEPA prior to any filling, dredging, or mechanical land clearing that occurs within the boundaries of any "waters of the U.S." or "waters of the State".

While this report represents our best professional judgment based on our knowledge and experience, it is important to note that the Huntington District of the U.S. Army Corps of Engineers has final discretionary authority over all jurisdictional determinations of 'waters of the U.S.' including wetlands under Section 404 of the CWA in this region. It is therefore, recommended that a copy of this report be furnished to the Huntington District of the U.S. Army Corps of Engineers to confirm the results of our findings.

7 References

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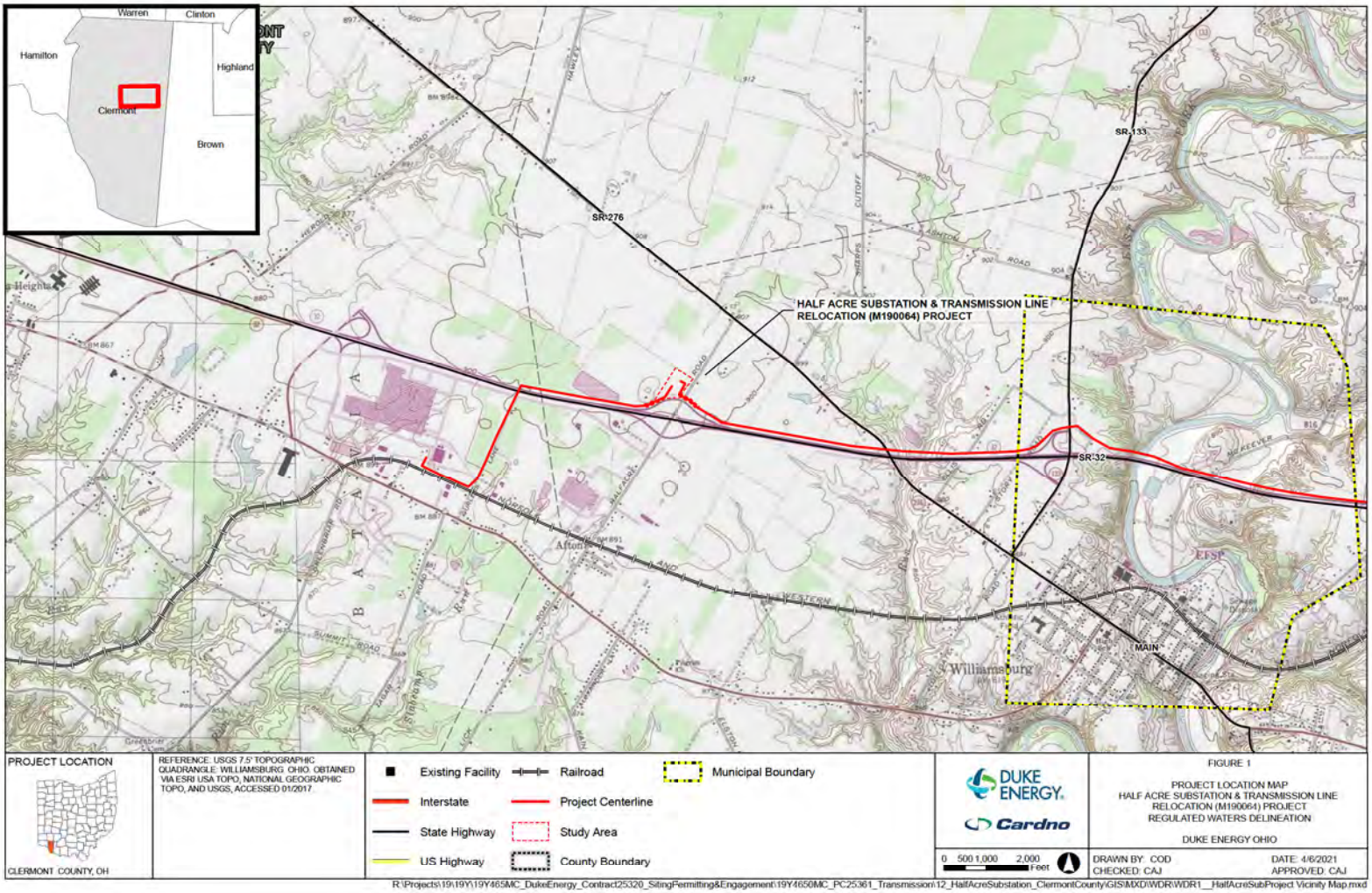
DUKE ENERGY OHIO
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT
REGULATED WATERS DELINEATION REPORT

FIGURES



PROJECT LOCATION

CLERMONT COUNTY, OH

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS; ACCESSED 01/2017

- Existing Facility
- Interstate
- State Highway
- US Highway
- Railroad
- Project Centerline
- Study Area
- County Boundary
- Municipal Boundary

DUKE ENERGY.

Cardno

0 500 1,000 2,000 Feet

FIGURE 1

PROJECT LOCATION MAP
HALF ACRE SUBSTATION & TRANSMISSION LINE
RELOCATION (M190064) PROJECT
REGULATED WATERS DELINEATION

DUKE ENERGY OHIO

DRAWN BY: COD DATE: 4/6/2021
CHECKED: CAJ APPROVED: CAJ

R:\Projects\19\19Y\19Y465MC_DukeEnergy_Contract25320_SitingPermitting&Engagement\19Y4650MC_PC25361_Transmission\12_HalfAcreSubstation_ClermontCounty\GIS\MXD\WDR\WDR1__HalfAcreSubProject Vicinity Map.mxd

PROJECT LOCATION

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS; ACCESSED 01/2017

Existing Structure
Proposed Structure
Floodway
100-Year Floodplain
Existing Facility
Study Area
NHD Flowline
Project Centerline
NWI Wetlands
State Highway
Interstate

DUKE ENERGY.
Cardno

0 30 60 120 Feet

FIGURE 2

NHD AND NWI RESOURCES MAP
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT
REGULATED WATER DELINEATION REPORT

DUKE ENERGY OHIO

DRAWN BY: COD
CHECKED: CAJ
DATE: 4/6/2021
APPROVED: CAJ

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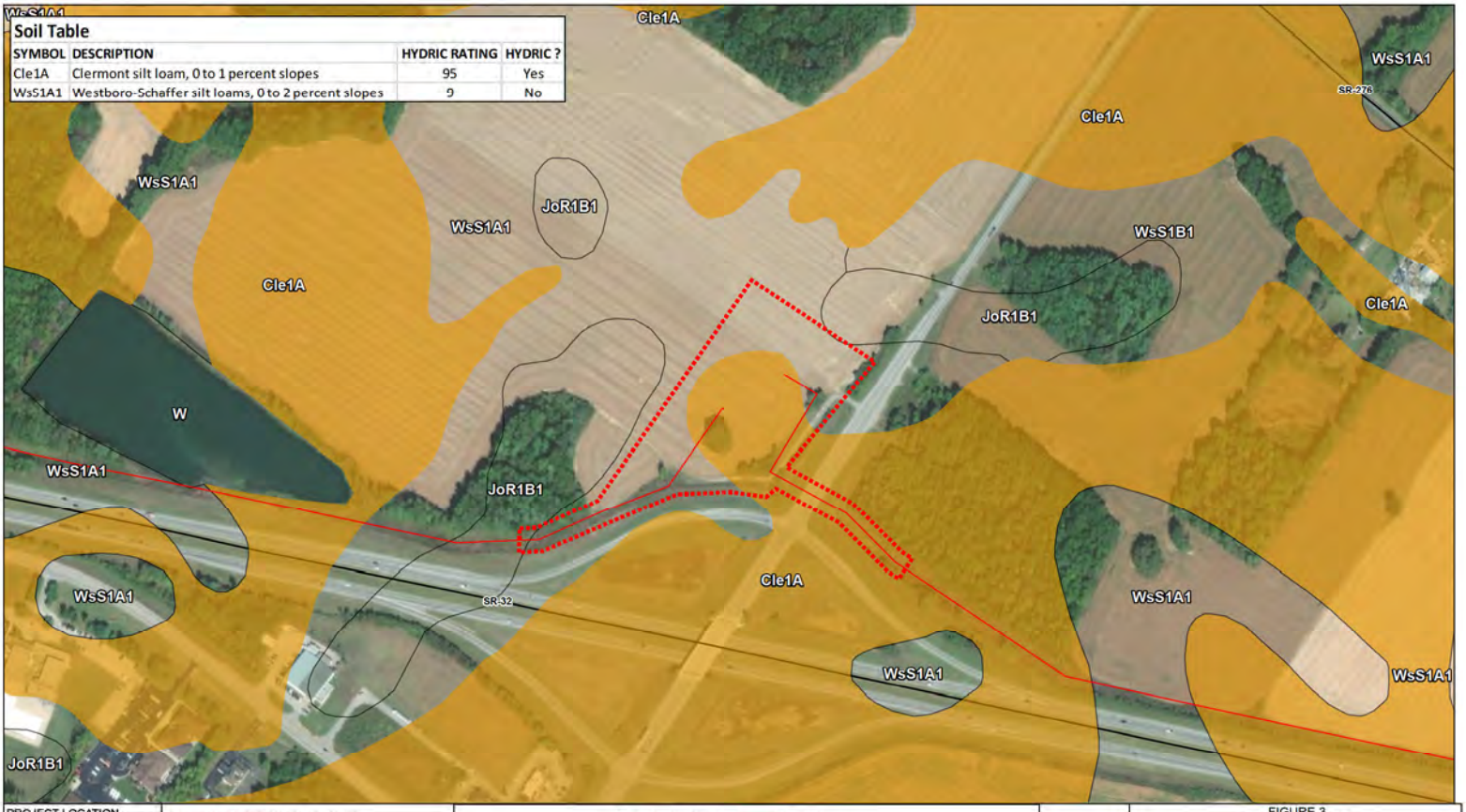

FIGURE 3
SOIL SURVEY MAP
HALF ACRE SUBSTATION AND TRANSMISSION LINE RELOCATION (M190064) PROJECT
REGULATED WATERS DELINEATION

DUKE ENERGY OHIO

DRAWN BY: COD DATE: 4/6/2021
CHECKED: CAJ APPROVED: CAJ

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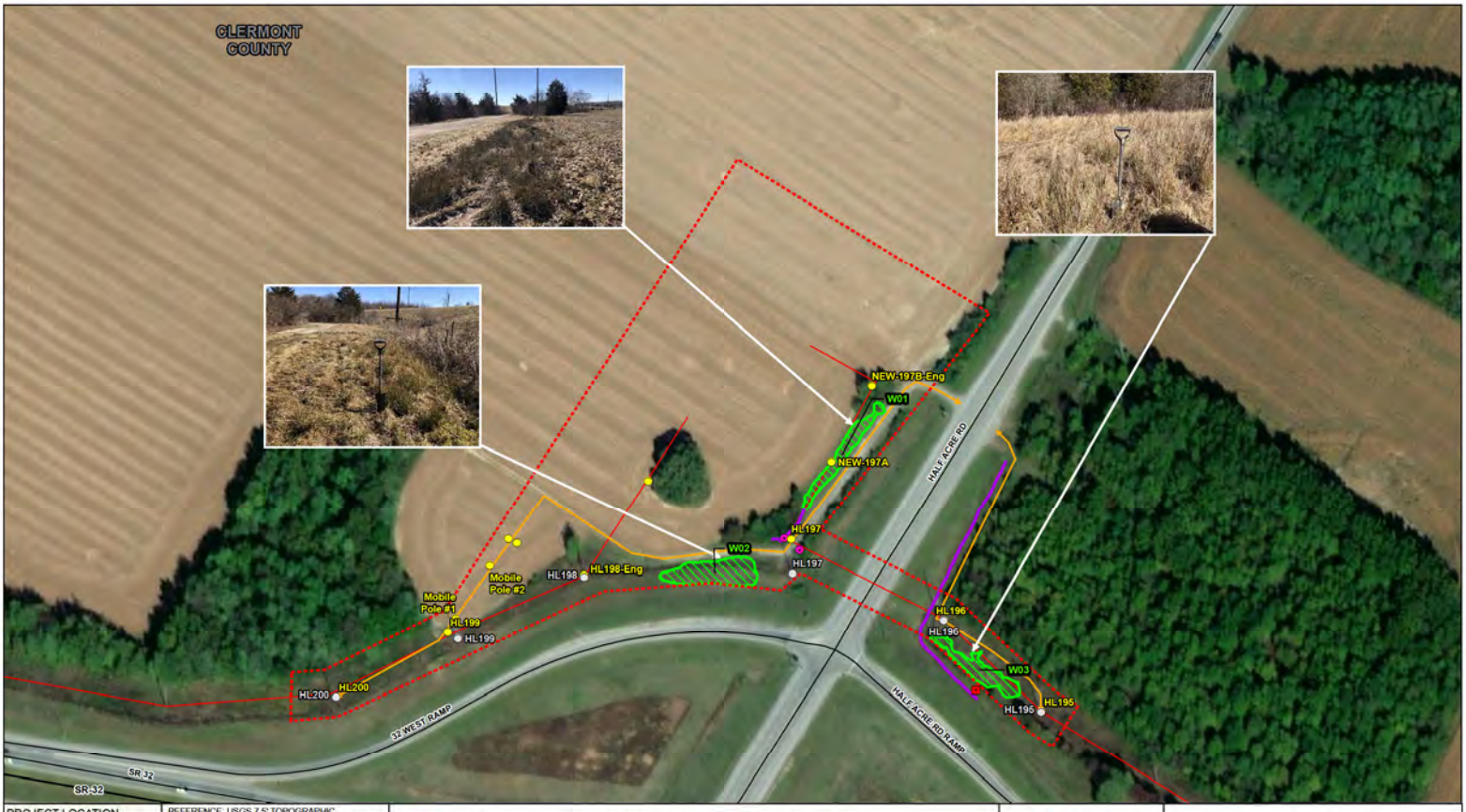

PROJECT LOCATION

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS; ACCESSED 01/2017

Culvert
Stormwater Inlet
Ditch
Delineated Wetland
Existing Structure
Proposed Structure
Existing Facility
Study Area
Project Centerline
Potential Access
State Highway
Interstate

DUKE ENERGY.
Cardno

0 30 60 120 Feet

FIGURE 4
WATERS OF THE U.S. DELINEATION MAP
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT
REGULATED WATERS DELINEATION

DUKE ENERGY OHIO

DRAWN BY: COD
CHECKED: CAJ
DATE: 4/6/2021
APPROVED: CAJ

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DUKE ENERGY OHIO
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT
REGULATED WATERS DELINEATION REPORT

APPENDIX A

SITE PHOTOGRAPHS

Photo 1. DP01, Wetland 1, Facing North.

Photo 2. DP01, Wetland 1, Facing South.

Photo 3. DP01, Wetland 1, Facing East.

Photo 4. DP01, Wetland 1, Facing West.

Photo 5. DP02, Upland, Facing North.

Photo 6. DP02, Upland, Facing South.

Photo 7. DP02, Upland, Facing East.

Photo 8. DP02, Upland, Facing West.

Photo 9. DP03, Wetland 2, Facing North.

Photo 10. DP03, Wetland 2, Facing South.

Photo 11. DP03, Wetland 2, Facing East.

Photo 12. DP03, Wetland 2, Facing West.

Photo 13. DP04, Wetland 3, Facing North.

Photo 14. DP04, Wetland 3, Facing South.

Photo 15. DP04, Wetland 3, Facing East.

Photo 16. DP04, Wetland 3, Facing West.

Photo 17. DP05, Upland, Facing North.

Photo 18. DP05, Upland, Facing South.

Photo 19. DP05, Upland, Facing East.

Photo 20. DP05, Upland, Facing West.

Photo 21. Overview of Right of Way.

Photo 22. Overview of Right of Way.

Photo 23. Overview of Scrub/Schrub Vegeta□ □ □ □emblage.

Photo 24. Overview of Agricultural Ve□ □ □on Assemblage.

DUKE ENERGY OHIO
HALF ACRE SUBSTATION & TRANSMISSION
LINE RELOCATION (M190064) PROJECT
REGULATED WATERS DELINEATION REPORT

APPENDIX

B

OHIO RAPID ASSESSMENT METHOD 5.0 FORMS

ORAM v 5.0 Field Form Quantitative Rating

Site: Wetland 1	Rater(s): MRR/KGH	Date: March 2, 2021

Project: Half Acre Substation & Transmission Line Relocation

0	0
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) (2 pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [x] <0.1 acres (0.04ha) (0 pts)

1	1
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)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

8.5	9.5
max 30 pts.	subtotal

Metric 3. Hydrology

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

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

6.5	16
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)
- [x] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

16
subtotal this page

ORAM v 5.0 Field Form Quantitative Rating

Site: Wetland 1	Rater(s): MRR/KGH	Date: March 2, 2021

Site:	Half Acre Substation & Transmission Line Relocation

3 subtotal this page

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)
- [ ] Not Applicable (0)

3 | 3 max 20 pts subtotal

Metric 6. Plant communities, interspersion, microtopograhy.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 1 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other

6b. Horizontal (plan view) Interspersion.
Select only one.

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

6c. Coverage of invasive plants. Refer 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)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- 1 Vegetated hummocks/tussocks
- 0 Coarse woody debris >15cm (6in)
- 0 Standing dead >25cm (10in) dbh
- 0 Amphibian breading 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 no always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Present very small amounts or if more common of marginal quality
2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3	Present in moderate or greater amounts and of highest quality

19 Grand Total (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Comments:

ORAM v 5.0 Field Form Quantitative Rating

Site: Wetland 2	Rater(s): MRR/KGH	Date: March 2, 2021

Project: Half Acre Substation & Transmission Line Relocation

1	1
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) (2 pts)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

1	2
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)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

9.5	12
max 30 pts.	subtotal

Metric 3. Hydrology

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

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

3b. Connectivity. Score all that apply.

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

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

- [ ] >0.7 (27.6in) (3)
- [x] 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)
- [x] Seasonally inundated (2)
- [x] Seasonally saturated in upper 30cm (12in) (1)

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

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

Check all disturbances observed

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

6.5	18
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)
- [x] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

18
subtotal this page

ORAM v 5.0 Field Form Quantitative Rating

Site: Wetland 2	Rater(s): MRR/KGH	Date: March 2, 2021

Site:	Half Acre Substation & Transmission Line Relocation

3 subtotal this page

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)
- [ ] Not Applicable (0)

3 | 3 max 20 pts subtotal

Metric 6. Plant communities, interspersion, microtopograhy.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other

6b. Horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [x] 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)
- [x] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [1] Vegetated hummocks/tussocks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breading 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 no always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
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

21 Grand Total (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Comments:

ORAM v 5.0 Field Form Quantitative Rating

Site: Wetland 3	Rater(s): MRR/KGH	Date: March 2, 2021

Project: Half Acre Substation & Transmission Line Relocation

0	0
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) (2 pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [x] <0.1 acres (0.04ha) (0 pts)

8	8
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)
- [x] 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.

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

9	17
max 30 pts.	subtotal

Metric 3. Hydrology

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

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

6.5	24
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)
- [x] Recovered (3)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

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

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

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

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

Check all disturbances observed

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

24
subtotal this page

ORAM v 5.0 Field Form Quantitative Rating

Site: Wetland 3	Rater(s): MRR/KGH	Date: March 2, 2021

Site:	Half Acre Substation & Transmission Line Relocation

5
subtotal this page

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)
- [ ] Not Applicable (0)

5 | 5
max 20 pts subtotal

Metric 6. Plant communities, interspersion, microtopograhy.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [0] Shrub
- [0] Forest
- [0] Mudflats
- [0] Open water
- [0] Other

6b. Horizontal (plan view) Interspersion.
Select only one.

- [ ] High (5)
- [ ] Moderately high (4)
- [x] 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)
- [x] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [1] Vegetated hummocks/tussocks
- [0] Coarse woody debris >15cm (6in)
- [0] Standing dead >25cm (10in) dbh
- [0] Amphibian breading pools

Vegetation Community Cover Scale

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low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
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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 no always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

0	Absent <0.1ha (0.247 acres)
1	Present very small amounts or if more common of marginal quality
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3	Present in moderate or greater amounts and of highest quality

29 Grand Total (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Comments:

DUKE ENERGY OHIO
HALF ACRE SUBSTATION & TRANSMISSION
LINE RELOCATION (M190064) PROJECT
REGULATED WATERS DELINEATION REPORT

APPENDIX

C

WETLAND DELINEATION DATA SHEETS-MIDWEST REGION

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Half-Acre M190064 - Substation and T-Line New Build Project | City/County: Williamsburg Township, Clermont County | Sampling Date: 3/2/2021

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP01

Investigator(s): Macenzie Reed, Kaitlin Hillier | Section, Township, Range:

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

Slope (%): 0% | Lat: 39.0702054 | Long: -84.09242 | Datum: NAD83 UTM16N

Soil Map Unit Name: Clermont silt loam, 0 to 1 percent slopes (CleA) | 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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. *Cornus amomum*	15%	Yes	FACW
2.			
3.			
4.			
5.			
	15% = Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. *Juncus effusus*	75%	Yes	OBL
2. *Cyperus esculentus*	25%	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	100% = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species	75%	x1 =	0.75
FACW species	40%	x2 =	0.80
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	115% (A)		1.55 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: DP01

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/2	95	10R 5/6	5	C	M	Silty Clay Loam	

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

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? Yes X No ___

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

Remarks:
Water in hole at 2 inches deep

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Half-Acre M190064 - Substation and T-Line New Build Project | City/County: Williamsburg Township, Clermont County | Sampling Date: 3/2/2021

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP02

Investigator(s): Macenzie Reed, Kaitlin Hillier | Section, Township, Range:

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

Slope (%): 0% | Lat: 39.072069 | Long: -84.092457 | Datum: NAD83 UTM16N

Soil Map Unit Name: Clermont silt loam, 0 to 1 percent slopes (ClelA) | 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 ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____	No X		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Festuca rubra*	65%	Yes	FACU
2. *Schedonorus arundinaceus*	15%	No	FACU
3. *Rubus allegheniensis*	15%	No	FACU
4. *Glycine max*	40%	Yes	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	135%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
That Are OBL, FACW, or FAC:			A/B
OBL species		x1 =	
FACW species		x2 =	
FAC species		x3 =	
FACU species	95%	x4 =	3.80
UPL species	40%	x5 =	2.00
Column Totals:	135% (A)		5.80 (B)

Prevalence Index = B/A = 4.30

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

____ 2-Dominance Test is >50%

____ 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No X

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

SOIL

Sampling Point: DP02

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/3	98	10YR 5/6	2	C	M	Silty Clay Loam	

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

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? Yes ___ No X

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

Remarks:
Water in hole at 2 inches deep

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Half-Acre M190064 - Substation and T-Line New Build Project | City/County: Williamsburg Township, Clermont County | Sampling Date: 3/2/2021

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP03

Investigator(s): Macenzie Reed, Kaitlin Hillier | Section, Township, Range:

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

Slope (%): 0% | Lat: 39.071533 | Long: -84.093078 | Datum: NAD83 UTM16N

Soil Map Unit Name: Westboro-Schaffer silt loams, 0 to 2 percent slopes (WsS1A1) | 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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Juncus effusus*	45%	Yes	OBL
2. *Cyperus esculentus*	25%	Yes	FACW
3. *Carex tribuloides*	25%	Yes	OBL
4. *Packera glabella*	10%	No	FACW
5. *Carex frankii*	5%	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	120%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	A/B
OBL species	85%	x1 =	0.85
FACW species	35%	x2 =	0.70
FAC species		x3 =	
FACU species		x4 =	
UPL species		x5 =	
Column Totals:	120% (A)		1.55 (B)

Prevalence Index = B/A = 1.29

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: DP03

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/2	97	10YR 4/6	3	C	M	Silty Clay Loam	

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

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Half-Acre M190064 - Substation and T-Line New Build Project | City/County: Williamsburg Township, Clermont County | Sampling Date: 3/2/2021

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP04

Investigator(s): Macenzie Reed, Kaitlin Hillier | Section, Township, Range:

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

Slope (%): 0% | Lat: 39.070914 | Long: -84.091524 | Datum: NAD83 UTM16N

Soil Map Unit Name: Clermont silt loam, 0 to 1 percent slopes (ClelA) | 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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Juncus effusus*	65%	Yes	OBL
2. *Juncus dudleyi*	25%	Yes	FACW
3. *Mimulus ringens*	25%	Yes	OBL
4. *Symphyotrichum lanceolatum*	5%	No	FAC
5. *Ludwigia alternifolia*	5%	No	OBL
6. *Solidago canadensis*	5%	No	FACU
7. *Andropogon virginicus*	3%	No	FACU
8. *Euthamia graminifolia*	5%	No	FACW
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	148%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	A/B
OBL species	95%	x1 =	0.95
FACW species	30%	x2 =	0.60
FAC species	15%	x3 =	0.45
FACU species	8%	x4 =	0.32
UPL species		x5 =	
Column Totals:	148% (A)		2.32 (B)

Prevalence Index = B/A = 1.57

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: DP04

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/2	95	10YR 4/6	5	C	M	Silty Clay Loam	

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

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM -- Midwest Region

Project/Site: Half-Acre M190064 - Substation and T-Line New Build Project | City/County: Williamsburg Township, Clermont County | Sampling Date: 3/2/2021

Applicant/Owner: Duke Energy | State: OH | Sampling Point: DP05

Investigator(s): Macenzie Reed, Kaitlin Hillier | Section, Township, Range:

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

Slope (%): 0% | Lat: 39.07097 | Long: -84.091486 | Datum: NAD83 UTM16N

Soil Map Unit Name: Clermont silt loam, 0 to 1 percent slopes (ClelA) | 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 X	No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes X	No ____		
Wetland Hydrology Present?	Yes ____	No X		

Remarks:

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Herb Stratum (Plot size: 5' radius)			
1. *Juncus effusus*	35%	Yes	OBL
2. *Rubus allegheniensis*	45%	Yes	FACU
3. *Symphyotrichum pilosum*	10%	No	FACU
4. *Calamagrostis canadensis*	40%	Yes	OBL
5. *Andropogon virginicus*	3%	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
	133%	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)			
1.			
2.			
		= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 67% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:
	That Are OBL, FACW, or FAC:		A/B
OBL species	75%	x1 =	0.75
FACW species		x2 =	
FAC species		x3 =	
FACU species	58%	x4 =	2.32
UPL species		x5 =	
Column Totals:	133% (A)		3.07 (B)

Prevalence Index = B/A = 2.31

Hydrophytic Vegetation Indicators:

____ 1-Rapid Test for Hydrophytic Vegetation

X 2-Dominance Test is >50%

____ 3-Prevalence Index is ≤3.0[1]

____ 4-Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes X No ____

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

SOIL

Sampling Point: DP05

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18"	10YR 5/2	95	10YR 4/6	5	C	M	Silty Clay Loam	

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

Hydric Soil Indicators[3]:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Test Indicators of Hydric Soils:

- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]The hydric soil indicators have been updated to comply with the *Field Indicators of Hydric Soils in the United States*, Version 8.0, 2016.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No X	Depth (inches):	N/A
Water Table Present?	Yes ___ No X	Depth (inches):	>18"
Saturation Present? (includes capillary fringe)	Yes ___ No X	Depth (inches):	>18"

Wetland Hydrology Present? Yes ___ No X

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

Remarks:

DUKE ENERGY OHIO
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT
REGULATED WATERS DELINEATION REPORT

APPENDIX

D

ENDANGERED, THREATENED, AND RARE SPECIES AGENCY COORDINATION

Cori Jansing

From: EnvironmentalReviewRequest@dnr.ohio.gov
Sent: Tuesday, April 6, 2021 12:41 PM
To: Cori Jansing
Subject: Automatic reply: DE_Half Acre Substation & Transmission Line Relocation (M190064)_ Environmental Review Request

Thank you for contacting the Ohio Department of Natural Resources. This email is your receipt that we have received your message and/or project review request. We aim to provide a completed Environmental Review comment letter within 45-60 calendar days, however, during periods of high volume or other extenuating circumstances, it may be longer. If you have any questions please contact sarah.tebbe@dnr.state.oh.us

April 6, 2021

Cardno

11121 Canal Road
Cincinnati, Ohio 45241
USA

Phone 513 489 2402
Fax 513 489 2404

Mr. Dan Everson
Field Office Supervisor
U.S. Fish and Wildlife Service 4625 Morse Road,
Suite 104 Columbus, OH 43230

RE: Half Acre Substation & Transmission Line Relocation (M190064) Project, Rare, Threatened, and Endangered Species Consultation Williamsburg Township, Clermont County, Ohio

Dear Mr. Everson:

Duke Energy Ohio (Duke Energy) is proposing to remove and replace six (6) existing structures, install three (3) new permanent structures and four (4) mobile structures, construct a new substation, and the associated ingress/egress features (the "Project") in the Williamsburg Township, Clermont County, Ohio. The total Project area is approximately 9.44 acres. A field investigation of the Study Area was conducted on March 2, 2021.

The site is The Study Area is located in Williamsburg Township, Clermont County, Ohio. The location of the proposed Project is depicted on the attached Williamsburg (OH) USGS 7.5-minute topographic map excerpt (Figure 1).

Cardno was contracted by Duke Energy to perform a boundary delineation and assessment of regulated waters, including wetlands, streams, ditches, and/or other federally regulated open waters, rare, threatened, endangered, and special habitat located within the proposed 9.44 acre ROW and Duke Energy easement. The Study Area was dominated by maintained right-of-way (ROW), agriculture, and scrub/shrub vegetation including some isolated tree clusters. Cardno botanists and ecologists conducted a habitat assessment to identify the presence of regulated waters, and potential Indiana bat (*Myotis sodalis*), northern long-eared bat (*Myotis septentrionalis*), and running buffalo clover *(Trifolium stoloniferum)* habitat.

In accordance with the USFWS Threatened and Endangered Species Information Request coordination requirements the Study Area and its habitat characteristics has been summarized for you below.

1. Location data including latitude and longitude of the project area, site address, and county.

The Study Area is located north of the James A Rhodes Appalachian Highway (SR 32) and west of Half-Acre Road in Williamsburg Township, Clermont County, Ohio.

Latitude: N 39.072294

Longitude: W -84.093420

2. A detailed project description, including layout of any new construction.

The Half Acre Substation & Transmission Line Relocation (M190064) Project is necessary to ensure dependable, cost effective, and reliable service to meet the growing energy demand in Clermont County.

Construction will be accomplished largely through the use of bucket trucks with truck-mounted augers for structure installation and other construction vehicles. Excavation will be restricted to the locations where the construction of the substation will occur. The extent of access disturbance can vary widely depending on many factors, including density and type of surface, vegetative cover, weather conditions, and the type of vehicles moving over the area. The existing vegetation will be preserved to the maximum extent practicable.

Project construction is expected to begin in Fall 2021.

3. A detailed description of onsite habitat, including the size, location, and quality of streams, wetlands, forested areas, and other natural areas, and proposed impacts.

The proposed Duke Energy Half Acre Substation & Transmission Line Relocation (M190064) Project involves the removal and replacement of six (6) existing structures, installation of three (3) new permanent structures and four (4) mobile structures, construction of a new substation, and the associated ingress/egress (Figure 1 & 2). There are three (3) potentially regulated wetlands identified within the Project's Study Area. Specific attention was given to the presence of habitat suitable for federally endangered and threatened species – specifically, the Indiana bat, the northern long-eared bat, and running buffalo clover. To evaluate the potential habitat for rare, threatened, and endangered species a general site reconnaissance of the Study Area was performed by Cardno botanists and ecologists. The result of these habitat assessments can be found below.

Agricultural Land
The agricultural land habitat type was located predominantly within the proposed new substation location within Study Area. Dominant species in this habitat type consist of soybean (*Glycine max*). Although, a formal study was not part of this scope, no potential habitat for the Running Buffalo Clover was identified within this habitat.

Maintained ROW
The maintained ROW habitat type was located along the southern portion of the Study Area. Dominant species in this habitat type consisted of tall fescue (*Festuca arudinacea*), Allegheny blackberry (*Rubus allegheniensis*), Callery pear (*Pyrus calleryana*), Canadian goldenrod (*Solidago canadensis),* Broom sedge (*Andropogon virginicus*), Frank's sedge (*Carex frankii*), Eastern red cedar (*Juniperus virginiana*), and winter creeper (*Euonymus fortune*). Although, a formal study was not part of this scope, no potential habitat for the Running Buffalo Clover was identified within this habitat.

Scrub/Shrub and Isolated Tree Clusters
The scrub/shrub with isolated tree clusters habitat type was located along the border of the existing ROW/easement. Dominant species in this habitat type consisted of common hackberry (*Celtis occidentalis*), Burr oak (*Quercus macrocarpa*), Eastern red cedar (*Juniperus virgiana*), Allegheny Blackberry (*Rubus allegheniensis*), and red maple (*Acer rubrum*). Understory vegetation was dominated by Posion ivy (*Toxicodendron radicans*) and saplings of the canopy species. Average diameter at breast height (DBH) for these canopy species was approximately six (6) to ten (10) inches with a maximum of approximately twenty

(20) inches. Tree trimming and clearing activities are anticipated in conjunction with the proposed Half Acre Substation & Transmission Line Relocation (M190064) Project.

Palustrine Emergent Wetland
Three small depressional palustrine emergent wetlands were identified within the proposed Study Area (Figure 2). No surface water connection with any "waters of the U.S." was observed. Dominant vegetation included Silky Dogwood (*Cornus amomum, FACW*), Lamp Rush (*Juncus effuses, OBL*), Blunt Broom Sedge (*Carex tribulodies, OBL*), Cress-Leaf Grounsel (Packera *glabella, FACW*), Allegheny Monkey-Flower (*Mimulus ringens, OBL*), and Chufa (*Cyperus esculentus, FACW*). The soil from 0 to 18 inches had a matrix soil color of 10YR 5/2 with concentrations in the matrix at 5 percent, and a texture of Silty Clay Loam.

4. Proposed impacts (i.e. in-water work or tree clearing)

Tree trimming or clearing will be required to facilitate the construction of the Half Acre Substation & Transmission Line Relocation (M190064) Project. All tree clearing activities will be conducted during the USFWS recommended winter tree clearing window between October 1 and March 31. Based on the current Project plans, impacts to two of the emergent wetlands will be required in order to construct proposed substation and its associated attendant features.

5. Proposed Best Management Practices

Best management practices will be followed for all potential stormwater impacts or runoff areas. These will include the use of fiber roll to collect any runoff/sediment. An Erosion and Sediment Control Plan will be prepared prior to Project construction and a Storm Water Pollution Prevention Plan and a NPDES permit will also be obtained if it is determined that more than an acre of ground will be disturbed.

Conclusion
Based on the physical site characteristics, the site contains poor quality habitat for the federally endangered Indiana bat and the federally threatened northern long-eared bat based on the woody species composition, size, and intensity of surrounding land use. All tree clearing activities will be conducted during the USFWS recommended winter tree clearing window between October 1 and March 31.

We are requesting a review by your office and a written response regarding effects on state listed threatened and/or endangered species and their critical habitat within the vicinity of the Study Area. Enclosed for your review are the location map, aerial map, and photograph log of the Study Area.

If you have any questions concerning this request or would like additional information, please do not hesitate to contact me at (513) 833-6392 or cori.jansing@cardno.com.

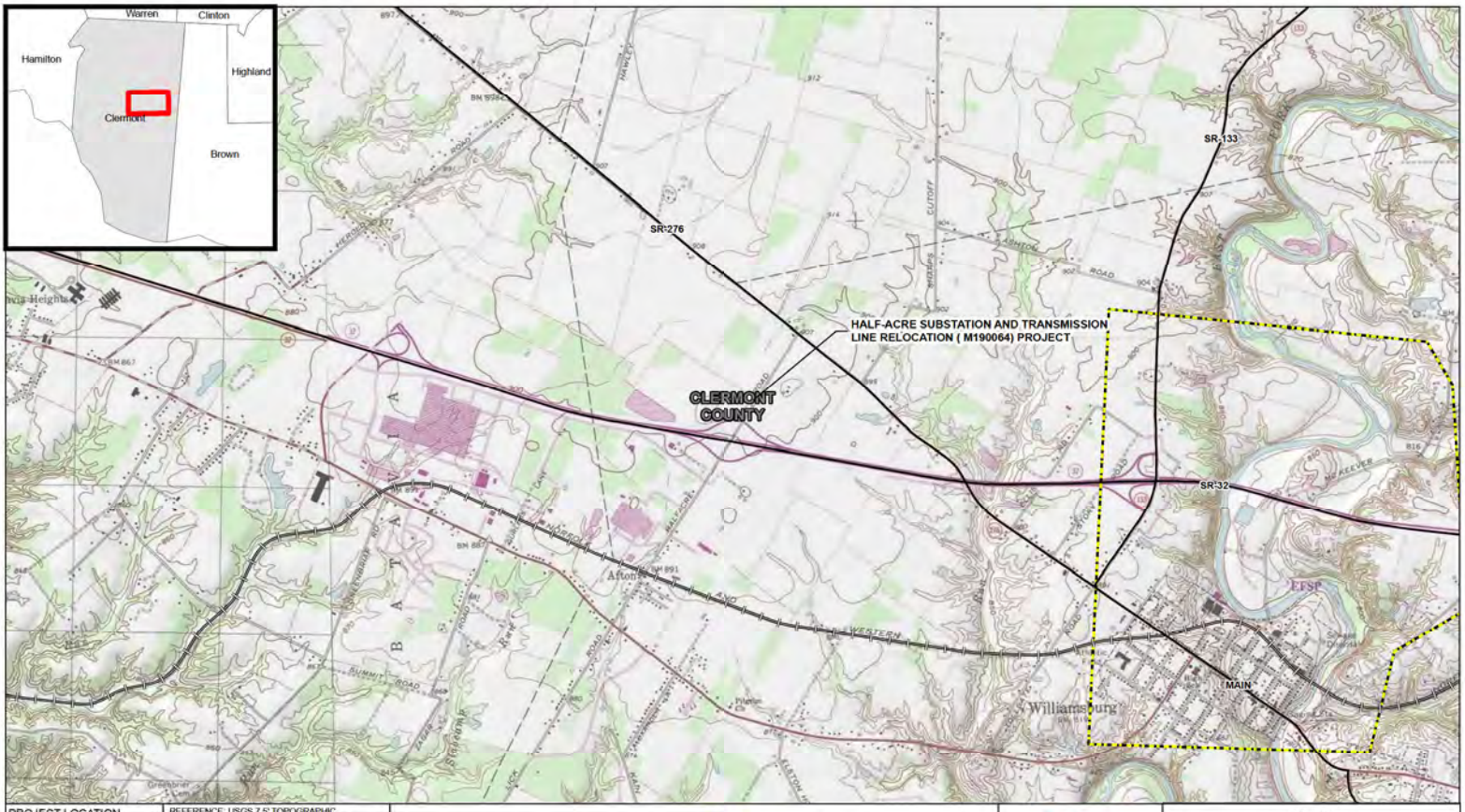
Sincerely,

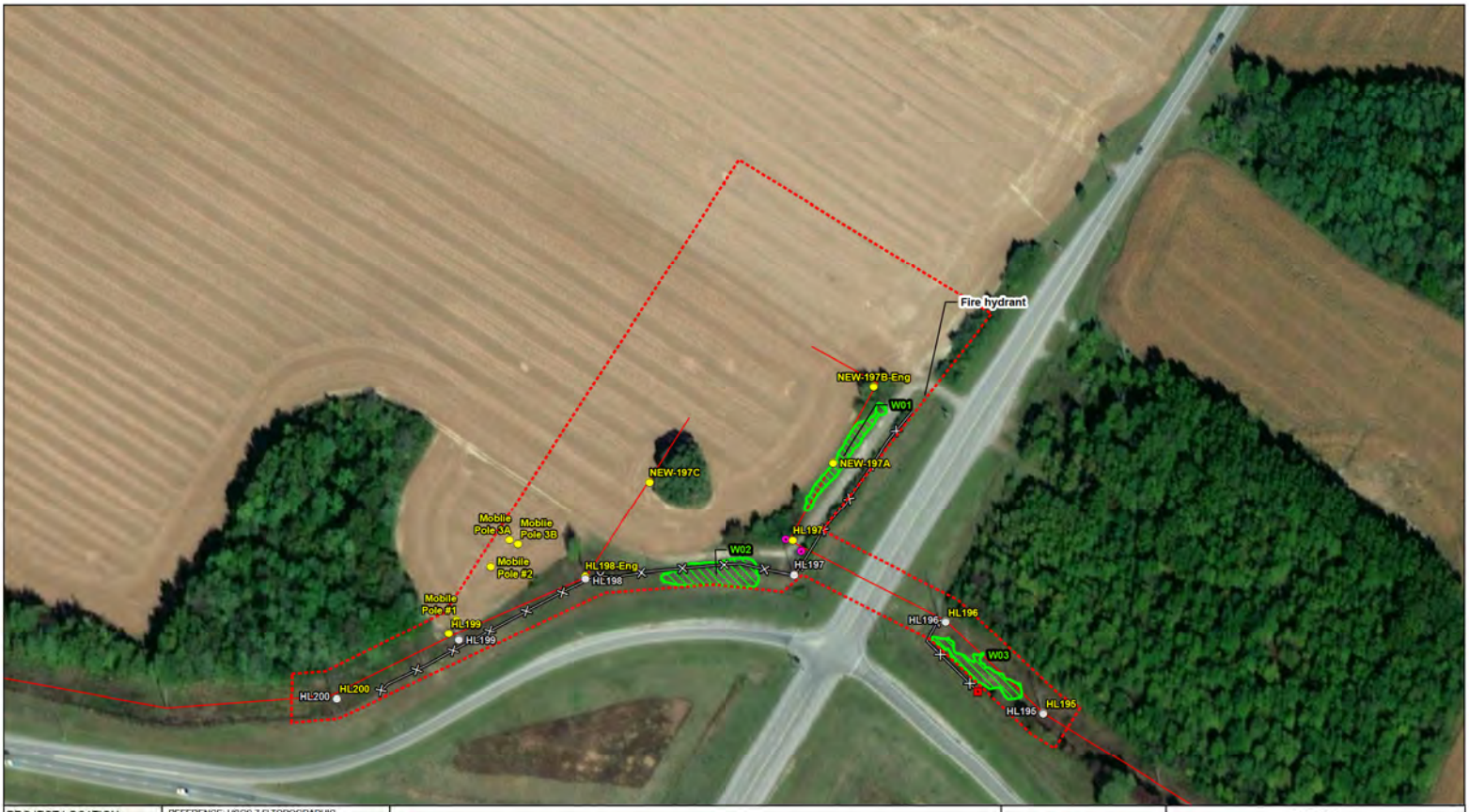
Corrine Jansing,
Senior Project Manager for Cardno

Enc: USGS map, Aerial Map, Photo Log, GIS Shapefile

Attachments

USGS Map
Aerial Location Map
Photo Log


Warren
Clinton
Hamilton
Highland
Clermont
Brown
SR-276
SR-133
SR-32
HALF-ACRE SUBSTATION AND TRANSMISSION LINE RELOCATION (M190064) PROJECT
CLERMONT COUNTY
MAIN
Williamsburg
Afton
PROJECT LOCATION
CLERMONT COUNTY, OH
REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS; ACCESSED 01/2017
Existing Facility
Interstate
State Highway
US Highway
Railroad
Project Centerline
Study Area
County Boundary
Municipal Boundary
DUKE ENERGY.
Cardno
0 500 1,000 2,000 Feet
FIGURE 1
PROJECT VICINITY MAP
HALF-ACRE SUBSTATION AND TRANSMISSION LINE RELOCATION (M190064) PROJECT
USFWS/ODNR AGENCY COORDINATION
DUKE ENERGY OHIO
DRAWN BY: COD
CHECKED: CAJ
DATE: 3/25/2021
APPROVED: CAJ
R:\Projects\19\19Y\19Y465MC_DukeEnergy_Contract25320_SitingPermitting&Engagement\19Y4650MC_PC25361_Transmission\12_HalfAcreSubstation_ClermontCounty\GIS\MXD\Agency Coorespondence\Agency1__HalfAcreSubProject Vicinity Map.mxd



PROJECT LOCATION

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS; ACCESSED 01/2017

Culvert
Stormwater Inlet
Fence
Delineated Wetland
Existing Structure
Proposed Structure
Existing Facility
Study Area
NHD Flowline
Project Centerline
NWI Wetlands
Potential Access

DUKE ENERGY.
Cardno

0 30 60 120 Feet

FIGURE 2

AERIAL MAP
HALF-ACRE SUBSTATION AND TRANSMISSION LINE RELOCATION (M190064) PROJECT
USFWS/ODNR AGENCY COORDINATION

DUKE ENERGY OHIO

DRAWN BY: COD
CHECKED: CAJ
DATE: 4/6/2021
APPROVED: CAJ

R:\Projects\19\19Y\19Y465MC_DukeEnergy_Contract25320_SitingPermitting&Engagement\19Y465MC_PC25361_Transmission\12_HalfAcreSubstation_ClermontCounty\GIS\MXD\Agency Coorespondence\Agency3__HalfAcreSubEnvironmental Access Plan.mxd

Photo 1. Overview of Wetland 1, Facing South.

Photo 2. Overview of Wetland 2, Facing East.

Photo 3. Overview of Wetland 3, Facing East.

Photo 4. Overview of Right of Way Vegeta Assemblage.

Photo 5. Overview of Scrub/Shrub Vegeta Assemblage.

Photo 6. Overview of Agriculture Vegeta Assemblage

Photo 7. Overview of Isolated Tree Clusters Vegeta Assemblage.

Photo 8. Overview of Right of Way Vegeta Assemblage.

Attachment D – Cultural Resources Phase 1 Report

Phase I Archaeological Reconnaissance

New Half Acre Substation and Transmission Line Relocation Project Clermont County, Ohio

Cardno

Document Information

Prepared for	Duke Energy
Project Name	Phase I Archaeological Reconnaissance: New Half Acre Substation and Transmission Line Relocation Project, Clermont County, Ohio
Project Number	J19Y465012
Project Manager	Cori Jansing
Date	May 28, 2021

Prepared and Submitted by Kaye Grob and Veronica Parsell

Principal Investigator

Veronica Parsell

Prepared for:

Duke Energy Ohio
139 E. 4th Street, Cincinnati, Ohio 45202

Prepared by:

Cardno
11121 Canal Road, Cincinnati, Ohio, 45241

Table of Contents

Tables

Figures

Appendices

Executive Summary

Cardno, Inc. (Cardno) conducted a Phase I archaeological reconnaissance of the new pole locations proposed for the Duke Energy Ohio New Half Acre Substation and Transmission Line Relocation Project in Clermont County, Ohio. Background research focused on documenting known prehistoric and historic resources within a 1.6 kilometer (km) (1 mile [mi]) radius of the Project Area (the study area) to ascertain the likelihood for encountering unidentified cultural resources within project boundaries. The literature review centered on the 1.6 km (1 mi) study area, but also examined the region on a larger scale when appropriate.

The literature review found no previously identified cultural resources within the Project Area. Two archaeological sites had been identified within the 1.6 km (1 mi) study area. In addition, a small portion of the Project Area was previously investigated in 1978; however, the survey methodology employed during this time period typically does not align with modern archaeological survey methodology.

Fieldwork for the Phase I occurred in May 2021. It included pedestrian survey and shovel testing throughout the Project Area. Cardno identified no archaeological resources as a result of the Phase I and no further archaeological work within the Project Area is recommended.

These recommendations are based on the current Project plans. If plans should change, further archaeological work may be necessary.

1 Introduction

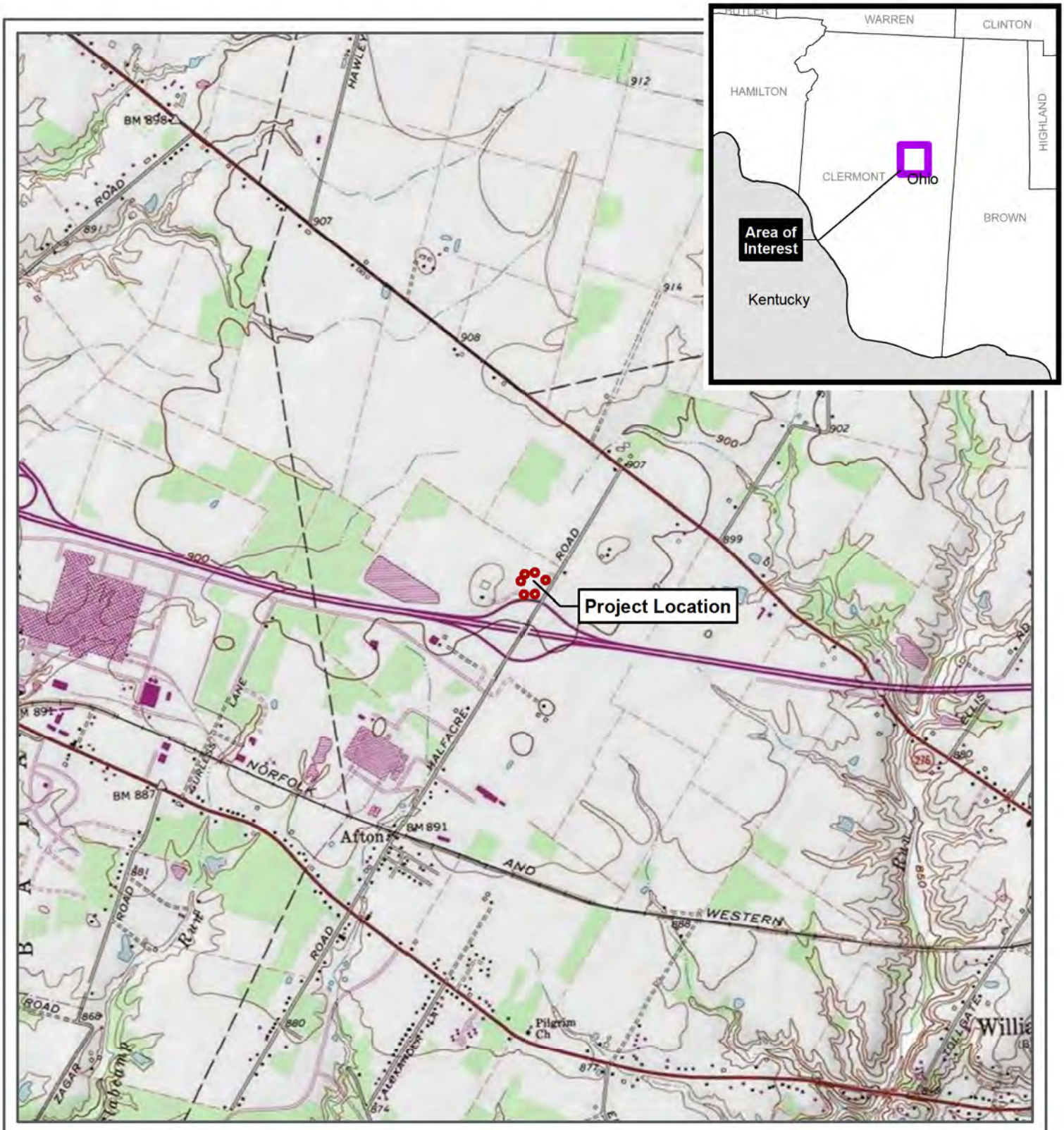
In response to a request from Duke Energy Ohio (Duke), Cardno conducted a Phase I archaeological reconnaissance survey for several new pole locations that would be installed as part of the New Half Acre Substation and Transmission Line Relocation Project in Clermont County, Ohio (the Project Area). Based on information provided by Duke, the Project Area is located in Williamsburg Township, west of the town of Williamsburg, on the north side of SR 32 and west of Half-Acre Road, on the Williamsburg, Ohio 7.5' USGS topographic map in Clermont County, Ohio (Figure 1). Six (6) structures will be replaced, three (3) new permanent structures will be installed, and four (4) mobile structures will be utilized in conjunction with the Project.

The Project Area is defined as the vertical and horizontal space (the area within and immediately adjacent to planned construction) that will be impacted by project activities. This also constitutes the Area of Potential Effects (APE) for direct effects.

Background research conducted in February 2021 focused on a 1.6 km (1 mi) study area around the proposed project footprint. Cardno gathered information about previously conducted cultural resource investigations and documented cultural resources as well as the environmental and cultural context of the region to assess the potential for additional undocumented cultural resources in and around the Project Area.

Key personnel committed to the Project include Principal Investigator and report co-author Veronica Parsell, Crew Chief John Flood, and Field Technicians Brianna Baker, Nikki Tozzi, and Nicole Shields. Ms. Kaye Grob was a report co-author. Mr. Stephen LaFon created the report graphics.

This report presents the results of the background research in Section 2.0. Section 3.0 outlines the field methods used during the survey. Section 4.0 discusses the results of the field investigation, followed by the conclusions and recommendations in Section 5.0. The references cited in this report appear in Section 6.0. Appendix A provides historic maps documenting the use of the Project Area through time; and Appendix B contains photographs documenting the Phase I.



N
W E
S

7.5' Quadrangle:
WILLIAMSBURG

Project No.
j19y465m12

Figure 1: Project Location
Phase I Archaeological Reconnaissance for the
New Half Acre Substation and
Transmission Line Relocation Project
Duke Energy
Clermont County, Ohio

Cardno
3901 Industrial Blvd, Indianapolis, IN 46254
Phone (+1) 317-388-1982 Fax (+1) 317-388-1986
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Date: 5/27/2021
File Path: R:\Projects\19\19Y\19Y465MC_DukeEnergy_Contract25320_SitingPermitting&Engagement\19Y4650MC_PC25361_Transmission\12_HalfAcreSubstation_ClermontCounty\GIS\MXD\Phase1\Fig1_Location.mxd
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2 Background Research

The objective of the current study is to identify and evaluate any archaeological resources present within the proposed Project Area, as well as to assess the effects of the proposed Project on archaeological resources including those resources eligible for or listed in the National Register of Historic Places (NRHP).

For the purposes of this investigation, archaeological resources may include any site location that contains material remains of past human life or activities, or other places and/or items that possess cultural importance to individuals or a group. These may include discrete places such as cemeteries or may represent more broadly defined places such as scenic landscapes. Once identified through documentary research and/or fieldwork, these sites are evaluated for eligibility based on the following criteria.

"*The quality of significance in American history, architecture, archaeology, engineering and culture is present in the districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:*

a. *That are associated with the events that have made a significant contribution to the broad patterns of our history; or*

b. *That are associated with the lives of persons significant in our past; or*

c. *That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*

d. *That have yielded or may be likely to yield, information important in prehistory or history" (36 CFR 60.4).*

The purpose of this section is to provide a basic context through which to evaluate the results of our investigations. This section will briefly outline the environmental and cultural background of the region in and around Clermont County, Ohio.

2.1 Background Research

Research was conducted using data from online files provided by the Ohio State Historic Preservation Office (OH-SHPO) in February 2021 (OHC 2015a). Cardno focused on previously recorded resources within 1.6 km (1 mi) of the Project Area, but also examined the larger region where appropriate. For the literature review the following resources were consulted:

- National Historic Landmark list;
- National Register of Historic Places (NRHP) list;
- Cultural Resource Management reports;
- County Histories and Atlas Maps;
- Ohio Archaeological Inventory (OAI) files;
- Ohio Genealogical Society (OGS) cemetery files
- *Archaeological Atlas of Ohio* (Mills 1914).

2.2 Literature Review

Reviewed records indicate two archaeological sites are located within the 1.6 km (1 mi) study area.

2.2.1 National Historic Landmarks List and National Register of Historic Places (NRHP)

Research indicates no National Historic Landmarks or National Register of Historic Places (NRHP) resources are located in or adjacent to the 1.6 km (1 mi) study area.

2.2.2 Ohio Historic Inventory (OHI)

The OHI files list no previously recorded historic structural resources in the 1.6 km (1.0 mi) study area.

2.2.3 Ohio Archaeological Inventory (OAI)

The OAI files indicate two archaeological sites within the 1.6 km (1 mi) study area (Table 1). These sites consist of a historic scatter associated with a former farmstead and a multicomponent historic and prehistoric site. No archaeological sites have been previously identified in or adjacent to the Project Area. Archaeological sites are not depicted on Figure 2 due to the sensitive nature of these resources.

Table 1. Previously Recorded OAI Sites in the 1.6 km (1 mi) study area

Site Number	Site Type	Site Age	NRHP Eligibility
33-CT-0728	Historic Scatter	Historic 19th to 20th Century	Ineligible
33-CT-0729	Prehistoric Isolate and Historic Scatter	Unidentified Prehistoric, Historic 20th Century	Ineligible

2.2.4 Ohio Genealogical Society (OGS) Cemetery Data

No cemeteries have been previously recorded in the 1.6 km (1.0 mi) study area.

2.2.5 Cultural Resource Management (CRM) Reports

Small portions of the Project Area have been previously investigated for cultural resources through one investigation, and an additional three cultural resources investigations have been conducted in the 1.6 km (1 mi) study area (Table 2; Figure 2).

Portions of SR 32 were investigated for archaeological resources by a Phase I survey in 1978. Approximately 216 acres were investigated, a large portion of which were determined to contain disturbed soils. No archaeological or historic resources were identified and it was recommended the project proceed as planned (DeWert and Fairchild 1978). This survey investigated small portions of the current Project Area; however, the survey methodology employed during this time period typically does not align with modern archaeological survey methodology.

In 1985, an archaeological reconnaissance survey was conducted for a 3.5 acre proposed multi service center and child care facility in Clermont County. No archaeological resources were identified and no further archaeological work was recommended (Genheimer 1985).

In 2017, EMH&T conducted a Phase I archaeological reconnaissance of the 242 acre South Afton Commerce Park in Williamsburg Township, Clermont County. The reconnaissance resulted in the identification of two archaeological sites, 33-CT-0728 and 33-CT-0729. These sites were found not eligible for the NRHP and it was recommended the project proceed as planned (Brown 2017a).

Also in 2017, EMH&T conducted an archaeological reconnaissance for a railroad spur associated with the South Afton Commerce Park. No archaeological resources were identified within the 7.2 acre project area and it was recommended the project proceed as planned (Brown 2017b).

Table 2. Previous Cultural Resources Investigations in the 1.6 km (1 mi) study area

Year	Author	Report Title	Sites Identified
1978	DeWert, John B. and Gary Fairchild	Preliminary Archaeological Survey of the Proposed Improvement of State Route 32 (Cle-32-10.50/10.52/12.16) Near Williamsburg, Clermont County, Ohio	None
1985	Genheimer, Robert A.	An Archaeological Assessment of the Proposed Multi-Service Center and Child Care Facility for the Eastern Division Community Chest and Council of the Cincinnati Area	None
2017a	Brown, Joel	Phase I Cultural Resources Management Survey for the Approximately 242 Acre South Afton Commerce Park Located in Williamsburg Township, Clermont County, Ohio.	33-CT-0278 and 33-CT-0279
2017b	Brown, Joel	Phase I Cultural Resources Management Survey for the South Afton Commerce Park Rail Spur Located in Williamsburg Township, Clermont County, Ohio	None

2.2.1 Historic Maps and Atlases

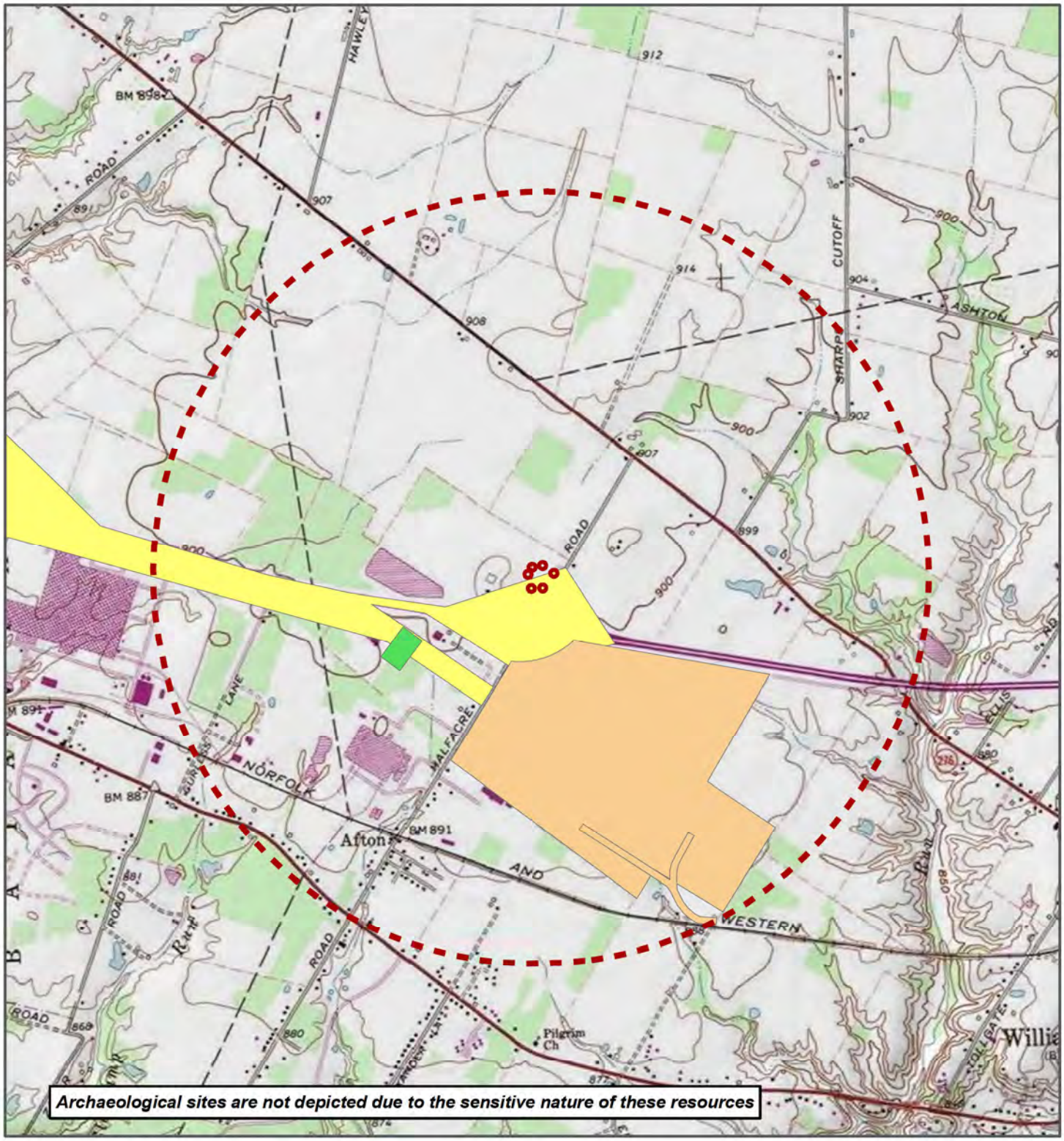
Four available historic maps were referenced for information pertaining to the historic use of the Project Area between 1870 and 1955 (Titus 1870; Lake 1891; USGS 1934 and 1955) (Appendix A).

The 1870 atlas depicts the Project Area in a parcel owned by S. McAfee (Titus 1870). There is residence is located in proximity to the Project Area. The railroad south of the Project Area has not yet been constructed, while Old SR 32 is mapped south of the Project and SR 276 is mapped north of the Project Area, both travelling west out of Williamsburg (Titus 1870).

By 1891, the Project Area is located within a 106 acre parcel owned by Otis Dudley. A house continues to be mapped outside the Project Area, and a driveway to this house is now also depicted (Lake 1891). A railroad, shown as the O. and N.W. R.R., is depicted south of the Project Area. The Batavia and Williamsburg Pike (Old SR 32) is mapped south of the Project Area and the Williamsburg-Boston Pike (SR 276) is mapped north of the Project Area (Lake 1891).

The 1934 1:62,500 USGS topographic map continues to show a house slightly southwest of the Project Area, and no features or structures are mapped within the Project Area (USGS 1934). By 1955, there continues to be a house with the addition of two barns mapped near the Project Area, but no features or structures are depicted within the Project Area (USGS 1955). None of this mapping shows the new US 32 that is adjacent to the southern boundary of the Project Area. Historic topographic maps indicate that SR 32 was constructed between 1970 and 1976 (NetrOnline 2021).

In the *Archaeological Atlas of Ohio*, Mills (1914) lists a total of 70 prehistoric sites in Clermont County including mounds, enclosures, villages, cemeteries, and burials. Within Williamsburg Township, three mounds are mapped, all of which are located along the East Fork of the Little Miami River. None of these mapped archaeological features appear to be in or adjacent to the current Project Area (Mills 1914).


Archaeological sites are not depicted due to the sensitive nature of these resources
0 500 1,000 2,000 Feet
0 100 200 300 400 500 600 Meters
Brown 2017
Genheimer 1985
1-Mile Buffer
DeWert 1978
Project Location
N
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E
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7.5' Quadrangle: WILLIAMSBURG
Project No. j19y465m12
This map and all data contained within are supplied as is with no warranty. Cardno, Inc. expressly disclaims responsibility for damages or liability from any claims that may arise out of the use or misuse of this map. It is the sole responsibility of the user to determine if the data on this map meets the user's needs. This map was not created as survey data, nor should it be used as such. It is the user's responsibility to obtain proper survey data, prepared by a licensed surveyor, where required by law.
Figure 2: Previous Cultural Resources Investigations
Phase I Archaeological Reconnaissance for the New Half Acre Substation and Transmission Line Relocation Project
Duke Energy
Clermont County, Ohio
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3901 Industrial Blvd, Indianapolis, IN 46254
Phone (+1) 317-388-1982 Fax (+1) 317-388-1986
www.cardno.com
Date: 5/26/2021
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Basemap: Copyright © 2013 National Geographic Society, i-cubed

2.3 Environmental Context

The Project Area is located within the Central Lowland Till Plain Physiographic Region, in the Illinoian Till Plain (Brockman 1998). The proposed Project Area is located in the East Fork Little Miami River watershed. The East Fork Little Miami River is located approximately two miles east of the Project Area.

2.3.1 Project Area Soils

The Project Area is located within the Avon-Clermont soil association, which consists of "Deep, nearly level to gently sloping, somewhat poorly drained and poorly drained soils on uplands" (USDA/SCS 1975) (Figure 3). The majority of the Project Area is located within a hydric soil unit, which is less conducive to prehistoric cultural deposits. Soils within the Project Area are depicted in Table 3.

Table 3. Soil Units within the Project Area

Soil Type	Soil Characteristics	Hydric
Cle1A	Clermont silt loam, 0 to 1% slopes	Yes
WsS1A1	Westboro-Shaffer silt loam, 0 to 2% slopes, eroded	No

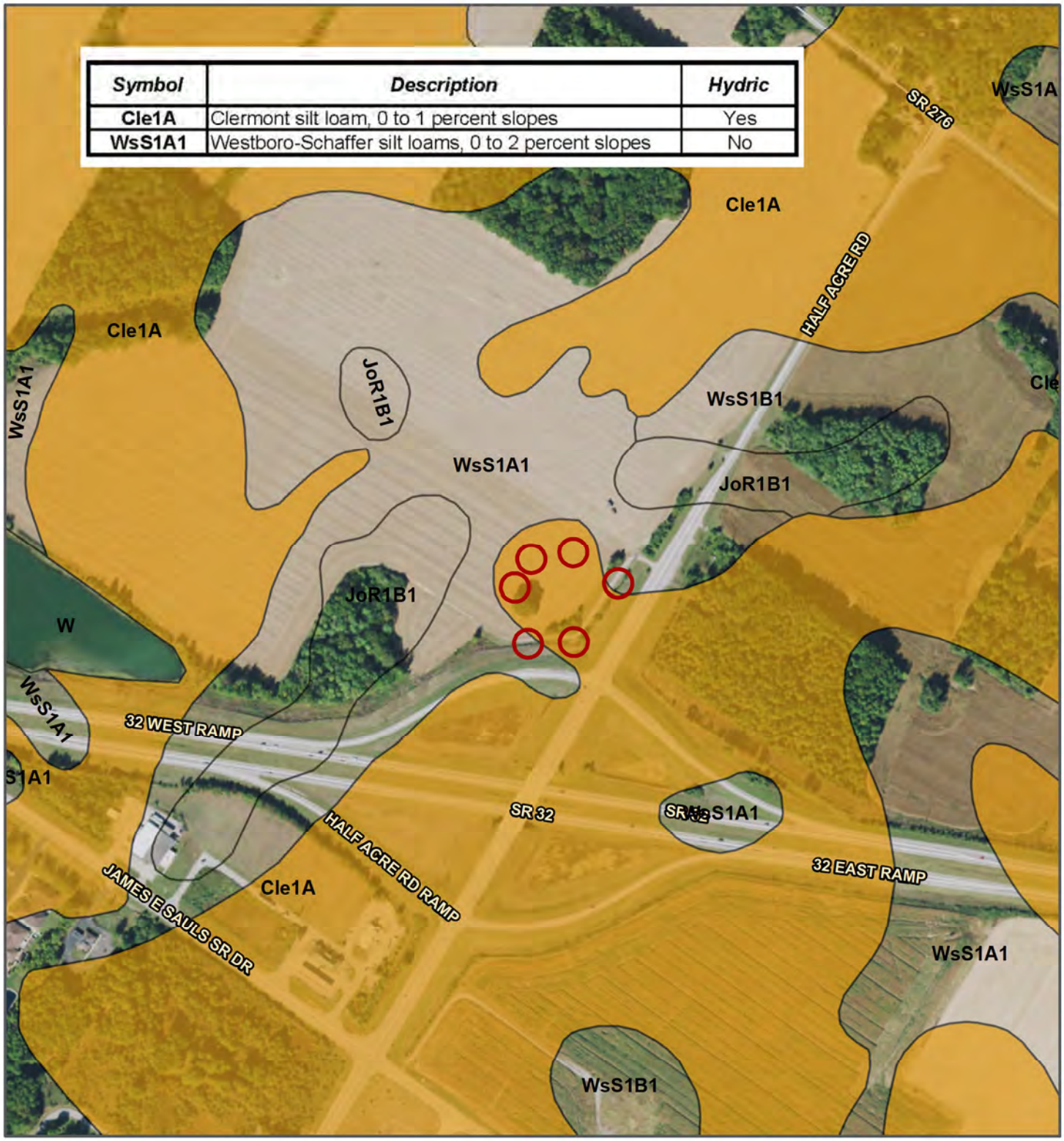
2.3.2 Climate

Cold winters and hot summers characterize the humid continental climate typical of Clermont County (USDA/SCS 1975). The average winter temperature in the region falls to the low-30s but rarely drops in to subzero temperature ranges Fahrenheit (negative single digits Celsius) and reaches the mid-70s Fahrenheit (20s Celsius) in the summer months. Precipitation is fairly constant throughout the year and fall is typically the driest season of the year (USDA/SCS 1975).

2.3.3 Flora and Fauna

In Clermont County, the ecological communities in the beech, oak-sugar-maple, elm-ash swamp forest, and mixed oak forests presented a wide variety of resources available to prehistoric and historic populations. Plant species such as white, red, and black oak, black walnut, sugar maple, and beech would have provided nuts and other food resources to native groups.

Prior to European settlement in Ohio, the state was inhabited by white-tail deer, passenger pigeons, bald eagle, beaver, black bear, panther, elk, gray wolf, and buffalo (OSU 2011). Today Ohio's mammals include coyote, white-tail deer, the red and gray fox, the common cottontail, raccoon, opossum, and several species of squirrel. Birds such as the eastern great blue heron, eastern cowbird, and a variety of woodpeckers also nest in Ohio.



0 250 500 Feet
0 50 100 150 Meters

Soil Unit
Soil Unit - Hydric
Project Location

N
W E
S

7.5' Quadrangle: WILLIAMSBURG

Project No. j19y465m12

Figure 3: Project Area Soils
Phase I Archaeological Reconnaissance for the New Half Acre Substation and Transmission Line Relocation Project
Duke Energy
Clermont County, Ohio

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Date: 5/26/2021
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2.4 Prehistoric Cultural Setting

Archaeological sites are well documented in Clermont County, Ohio. The county is located in a region with a temperate climate, well-drained soils, topography, and riverine corridors, making it an ideal location for settlement and subsistence throughout history. Nearly 750 archaeological sites have been documented in Clermont County to date. These include approximately 168 sites with a historic component; the remaining sites are prehistoric or multicomponent in nature (OHC 2015). The prehistoric occupation of Ohio is generally divided into three broad periods; Paleoindian, Archaic, and Woodland. Clermont County contains sites dating to each of these time periods; however, almost half of recorded prehistoric sites in the county do not contain diagnostic artifacts and therefore cannot be attributed to specific cultural occupations (OHC 2015). This section will outline each of these broad time periods including smaller divisions within each.

2.4.1 Paleoindian Period (ca. 13,000 – 10,000 B.P.)

The Paleoindian period encompasses the cultural remains of the earliest recorded occupations of the region, after about 13,000 years before present day (B.P.), shortly following the retreat of the last glaciers to cover the land. Paleoindians were nomadic groups comprised of small kin-based bands that primarily practiced a foraging subsistence strategy. Current research suggests that these Paleoindian bands moved within a circumscribed geographic range to intercept large herd animals during their migratory cycles (Gramly 1988; Stothers 1996). Overtime, the focus likely shifted from large-scale hunting expeditions to a more regular procurement of game accompanied by a decrease in the overall size of territory exploited by these groups

Paleoindian sites are most easily recognized in the archaeological record by the presence of lanceolate spear points. These points may be fluted (a large flake removed from each side of the base) or unfluted. Early Paleoindian projectile points are often made of high quality materials, usually from a widely dispersed area, which suggest a high level of mobility. Later Paleoindian points are more often made from local chert types, which may reflect a reduction in this mobility.

Documented archaeological sites dating to this time period are relatively rare in this part of state. The Ohio Archaeological Inventory lists only 22 sites dating to this period in Clermont County (OHC 2015).

2.4.2 The Archaic Period (10,000 – 2,500 B.P)

The Archaic period is identified by archaeologists as the period when settlements organized around local environmental resources replaced the broad seasonal migration patterns of the Paleoindian period. Approximately 55 sites in Clermont County have components that can be broadly attributed to the Archaic Period, often through the presence of characteristic projectile points (OHC 2015).

2.4.2.1 *Early Archaic (10,000 – 8,000 B.P.)*

The Early Archaic time period is often identified in the archaeological record by the transition from large, lanceolate bifaces of Paleoindian assemblages, to smaller, notched and bifurcated bifaces. Groundstone tools and other lithic tools such as gravers, scrapers, and notched knives are also observed in the Early Archaic. Local cherts continue to appear in the archaeological record as a common resource. Early Archaic subsistence strategies continued the focus on large migrating Pleistocene herd animals, but Early Archaic groups also began to exploit more local environmental resources including smaller game animals. Early Archaic artifacts tend to display more diversity in style and function, which also may reflect diversity in resource exploitation. Currently, 78 documented sites in Clermont County have an Early Archaic component (OHC 2015).

2.4.2.2 *Middle Archaic Period (8,000 – 5,000 B.P.)*

Archaeologists observe little change between the Early and Middle Archaic periods. The Middle Archaic period is reflected by changes in projectile point and blade types, but these variations are more prominent in southern portions of the U.S., and are not evident in southern Ohio (Vickery and Litfin 1992). The Middle

Archaic may be described simply as a transitional period between the Early and Late Archaic periods. Only 25 sites in Clermont County have a documented Middle Archaic component (OHC 2015).

2.4.2.3 *Late Archaic Period (5,000 – 2,500 B.P.)*

Archaeologists characterize the Late Archaic as with an increased focus on regional mobility patterns, as well as an increase in resource diversity. Late Archaic groups incorporated plants into a larger part of their subsistence strategy. Late Archaic sites often represent repeated occupation over a long period of time, which suggests a regular, more localized pattern of movement across the landscape. Projectile points and other lithic tools also show an increase in variation. Small side-notched and corner-notched points and side and end scrapers appear frequently in Late Archaic assemblages. Groundstone tools are also increasingly evident. Pottery begins to appear in the transition between the Late Archaic and Early Woodland periods. There are 124 documented sites with a Late Archaic component in Clermont County (OHC 2015).

2.4.3 The Woodland Period (2,500 – 500 B.P)

Wide exchange of materials, the innovation of ceramic technology, the emergence of domesticated crops and animals, and an increasing shift toward permanent settlements generally identify the transition to the Woodland time period. Populations in the Woodland period tended to be broad spectrum hunter-gatherers, living in semi-sedentary occupations made up of small groups, likely based on kinship. These occupations were typically located around riverine environments and organized around communal burials. Innovations such as a more intensive reliance on pottery, horticulture as well as the bow and arrow also occur during the Woodland time period. Clermont County contains approximately 39 sites with artifacts dating broadly to the Woodland period (OHC 2015).

2.4.3.1 *Early Woodland Period (2,500 – 1,900 B.P.)*

The Early Woodland period marks the transition from the more nomadic Archaic subsistence strategy to a more localized, semi-sedentary subsistence strategy. The Adena culture is representative of the Early Woodland period in southern Ohio. Cultural material associated with the Adena are stemmed projectile points with weak shoulders, ceramic vessels with flat bottoms and lug handles, drills, scrapers, and a variety of ornamental and ceremonial materials (Tuck 1978). The earliest earthworks and burial mounds in southern Ohio are attributed to the Adena. These earthworks were often constructed over another structure, indicated by the presence of post-hole features. Burials are often associated with a variety of exotic materials, such as cut mica, copper, beads, gorgets, and shell. It is important to note, however, that "Adena", like "Hopewell" in the Middle Woodland, refers more to a pattern of mortuary practices and exchange of goods, rather than to a discrete group of peoples. Currently, 61 sites in Clermont County date to the Early Woodland Period (OHC 2015).

2.4.3.2 *The Middle Woodland Period (1,900 – 1,400 B.P)*

Archaeologists generally describe the Middle Woodland period in Ohio as the period associated with the development of the Hopewell culture. The subsistence strategy was organized around a seasonal pattern of resource procurement and an increasing reliance on horticulture. The Middle Woodland period saw a continued increase in population and social organization, reflected in the numerous earthworks constructed in this period. These earthworks, often constructed in geometric figures, may have represented ceremonial centers suggesting that populations may have been organized at some larger scale. The prehistoric trade of exotic materials also reached a high during the Middle Woodland as populations within the "Hopewell Interaction Sphere" traded materials from as far away as the Upper Peninsula of Michigan (copper), the Gulf Coast (shell and shark teeth), and the Carolinas (mica). It is likely that the Hopewell Interaction Sphere represents a broad but loosely organized pattern of exchange rather than a well-defined system of trade (Pacheco 1996). While pottery tends to be more utilitarian in nature, vessels with an engraved duck motif appear in funerary contexts. In general Middle Woodland vessels have thinner walls than earlier ceramics. There are approximately 65 sites in Clermont County with a Middle Woodland component (OHC 2015).

2.4.3.3 *The Late Woodland/Late Prehistoric Period (1,400 – 1,000 B.P.)*

A significant reduction in the extensive, extra-regional trade of exotic goods and materials marks the Late Woodland period. The construction of large ceremonial earthworks also ends in the Late Woodland, as there is a shift in mortuary practices to interring burials into existing, older mounds or small stone mounds. Isolated, individual burials are also observed. This period is also characterized by an increasingly sedentary residential pattern of large nucleated villages supported by a growing reliance on maize and other cultigens as a substantial part of the Late Woodland diet. Palisades or ditches were sometimes constructed around these villages. This need for defensive structures suggests an increasing instability at times. Resource diversity also continued to increase although reliance on aquatic resources was less pronounced in southern Ohio than in other areas of the Midwest. The deeply dissected drainages of southern Ohio do not produce the oxbow pond or lake features as seen in the Mississippi, Missouri or Illinois River valleys (Seeman and Dancey 2000). The Late Woodland artifacts include small triangular points, scrapers, mortars and pestles, celts, and hoes. A distinct technological innovation of the period was the use of earthen ovens for steaming or baking food (Seeman and Dancey 2000). Pottery in the early portion of the Late Woodland exhibits thick angular shoulders (Newtown shoulder) and contrasts with Middle Woodland containers (Seeman and Dancey 2000). The bow and arrow became prevalent, though likely in the later portion of the Late Woodland. Clermont County contains approximately 36 documented sites with artifacts dating to the Late Woodland Period (OHC 2015).

2.4.4 Fort Ancient (1,000 B.P. – contact)

In southwest Ohio, archaeologists have described a settlement system marked by sedentary villages located along floodplains, with smaller resource-specific occupations in the uplands and lowlands (Pollack and Henderson 2000). The Fort Ancient period has been described as an in situ development from Late Woodland groups in the Ohio valley, extending into in southeastern Indiana, northern Kentucky, southern Ohio, and eastern West Virginia (Drooker 1997). The Mississippian influence is evident in designs and forms in locally available materials such as spatula shaped celts, triangular projectile points, and the falcon motif. Fort Ancient villages are typically located along the Ohio River and its major tributaries. In the late pre-contact period, the majority of settlements were located within 12.4 mi (20 km) of the Ohio River (Drooker 1997). Many of these villages are organized around a central plaza and some were surrounded by palisades. Structures varied in size from as small as 107 square feet (10 square meters) to as large as 1930 square feet (180 square meters) (Drooker 1997). Semi-subterranean pit houses provided cooler temperatures in the summer and warmer temperatures in the winter. Storage pits also became more extensive, with some measuring 3.4 ft (1 m) in diameter and 6.5 ft (2 m) in depth, capable of storing over 45 bushels of shelled corn (Cowan 1987).

Use of burial mounds declined after approximately 700 B.P. as people began interring their deceased in the villages around plazas as well as in and around houses. Funerary items include pots, and pipes, but more exotic materials such as marine shell also are seen. The presence of marine shell and other engraved Mississippian goods along with the location of Fort Ancient groups along the Ohio River suggest some level of regional interaction. The late pre-contact period, however, is characterized by more concentrated settlement locations and more intraregional similarities in goods such as ceramics.

By the later part of the Fort Ancient period (post 1400 A.D.) most settlements were located within 20 km of the Ohio River and appear to represent a collection of formerly dispersed groups (Drooker and Cowan 2001). This period also includes increased intra and extra-regional interaction among eastern and western populations (Drooker and Cowan 2001). The mid-sixteenth century marks the beginning of the Protohistoric period, when European goods begin to arrive in the region, but prior to substantial European records.

Despite sharing the name "Fort Ancient", the large earthworks at the hilltop enclosure located approximately 25 miles north of the Project Area, were built during the Middle Woodland period. The Fort Ancient enclosure includes over 18,000 feet of linear earthworks on a terrace overlooking the Little Miami River.

One of the most prominent sites in the area dating to the Fort Ancient period is the Madisonville site located near Cincinnati. Currently, there are 56 sites that date to this time period in Clermont County (OHC 2015).

Clermont County was home to the Shawnee, Miami, Delaware, Mingo, Ottawa, Cherokee, and Wyandot tribes. Two miles south of the town of Marathon, was the last Native American village in Clermont County, where they Wyandot lived until 1811. The location was also the site of the Battle of Grassy Run, where Simon Kenton clashed with Tecumseh in 1792 (CCO 2021). Currently, no protohistoric sites are recorded within Clermont County (OHC 2015).

2.5 Historic Cultural Setting

The establishment of Detroit (1701) as a major center for fur trade and as the seat of European political and military power in the region led to an increase of non-Native people and a resurgence of Native Americans in the Ohio area throughout the eighteenth century (Nester 2000). By the mid-eighteenth century, British and French traders began to rival each other in the Ohio region. Following the French and Indian War (1756-1763), the French relinquished control of all Ohio lands to the British (Nester 2000). In the years following the treaty that ended the war, British colonists were often engaged in skirmishes and battles with the Native Americans, who were disgruntled with the postwar policies of the British. In an attempt to maintain peaceful relations with the tribes that participated as allies to the French during the war, Great Britain passed the Royal Proclamation of 1763, which restricted settlement west of the Appalachian Mountains (Ohio History Central 2015a). The proclamation only served to anger the colonists, who continued to move west and settle. The British victory in the French and Indian War and the events that followed shortly thereafter sparked the upheaval that would lead to the American Revolution against Great Britain (Ohio History Central 2015a). After the Revolutionary War (1775–1783), most of the Native American territory was ceded to the United States through a series of treaties, including the Treaty of Fort McIntosh (Pennsylvania) in 1785 and the Treaty of Greenville (Ohio) in 1795 (Ohio History Central 2015b).

The 1795 Treaty of Greenville, which was signed at Fort Greenville (now the city of Greenville located northwest of Montgomery County in Darke County), effectively ended war with the Native Americans and meant that southwest Ohio could develop along the Great and Little Miami Rivers. The stage had been set for this development by John Cleves Symmes, an investor who purchased the entire area between the Great and Little Miami Rivers, from the Ohio River north to the Mad River (in present-day Montgomery County) (Honious 2003). Symmes had purchased the land in 1787, for 66 cents an acre; however, it was not until the Treaty of Greenville, which created a boundary line between land owned by Native American tribes and the area open to European settlement, that Symmes could profit from his purchase (Honious 2003). Two weeks after the treaty was signed, Symmes sold a portion of his property to a group of developers that included Arthur St. Clair (the Governor of the Northwest Territory), Israel Ludlow, James Wilkinson, and Congressman Jonathan Dayton (Honious 2003). Known as the “Dayton Purchase,” this tract included land in present-day eastern Montgomery County and western Greene County, and included the land that would become the city of Dayton. The investors chose “Dayton” for the name as the most pleasant of their four surnames (Honious 2003). Ohio officially became a state in February 1803, when President Jefferson endorsed the United States Congress's decision to grant Ohio statehood; however, Ohio celebrates statehood in March 1, when the Ohio General Assembly met for the first time (Ohio History Central 2015c).

2.5.1 Clermont County

Clermont County was formed in 1800. The formation of Highland County in 1805 and Brown County in 1817 each took some of the original land included within Clermont County (Lake 1891). After these lands were taken, the original County Seat of Williamsport was no longer near the center of the county, and the County Seat was moved to New Richmond in 1823. However, in 1824, the County Seat was again moved to Batavia, where it remains today (Lake 1891).

Williamsburg Township is one of the original townships in Clermont County. In 1801, Clermont County was divided into five townships, including Williamsburg. Later, the formation of surrounding townships diminished the size of Williamsburg Township to approximately 18,700 acres. In 1890, the population of Williamsburg Township was 2,353 (Lake 1891). The East Fork of the Little Miami River, along with many tributaries, traverses the township. Many early sawmills were located along these waterbodies. Both the township and village of Williamsburg were named after William Lytle who was known as the "Father of Clermont County" (Lake 1891). Williamsburg is the oldest town in Clermont County. It was initially named Lytlestown and was laid out by William Lytle in 1795 (Lake 1891). It was platted as the county seat and as previously discussed, held this position until 1823. The first cabin was constructed in Williamsburg in 1796 by James Kain. In 1890, the population of Williamsburg was 828 (Lake 1891).

2.6 Summary and Discussion

This section presented the results of the cultural resources records review. The records check indicates that two archaeological sites have been recorded within 1.6 km (1 mi) of the Project Area. Neither of these resources are located within or adjacent to the Project Area. The results of the literature review indicate that portions of the Project Area have been previously surveyed for cultural resources.

Unidentified archaeological resources may represent a variety of time periods ranging from prehistoric Paleoindian period sites through proto-historic Native American sites. These sites may represent a variety of site types, from isolated artifacts to larger occupational sites. The East Fork Little Miami River is located approximately two miles east of the Project Area and was heavily populated during prehistoric times.

The historic context of the region suggests that unidentified historic archaeological sites may represent a variety of activities; however, based on the historic setting of the Project Area, any identified historic sites will be related to agricultural or domestic activity associated with the growth of Williamsburg Township. In addition, cultural remains associated with the historic farmstead located slightly southwest of the Project Area may be present, particularly historic dump and debris discard areas.

3 Methods

This section describes the regulations and guidelines governing archaeological fieldwork as well as the research design, field methods, and laboratory methods employed during the Phase I survey. The objective of the Phase I was to identify cultural resources that may be affected by the proposed Project.

3.1 Applicable Regulations and Guidelines

The current Phase I investigation was completed pursuant to Ohio Administrative Code (OAC) 4906-06. OAC 4906-06 outlines the requirements regarding filing an accelerated certificate application with the Ohio Power Siting Board. This regulation requires the applicant "provide a description of the applicant's investigation concerning the presence or absence of significant archeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation".

In addition, if archaeological artifacts or human remains are identified during project activities in any location, pursuant to Ohio Revised Code §149.53 work within the area must stop and the Ohio Historic Preservation Office/Ohio History Connection (OHPO/OHC) must be notified within two (2) business days.

3.2 Field Methods

Cardno conducted the archaeological fieldwork using methods consistent with the OH-SHPO guidelines (OH-SHPO/ OHC 2014). Cardno performed the Phase I in order to identify archaeological sites and other cultural resources within the Project Area.

Several of the new transmission pole locations were located in an agricultural field with between 50 and 90 percent surface visibility. These areas were subjected to pedestrian surface survey at 10 m (32.8 ft) intervals.

Portions of the Project Area contained less than 50 percent surface visibility. In these areas, Cardno conducted systematic shovel probe excavation. The new transmission poles will be installed through two methods. Direct embed poles will be vibrated into place with no ground disturbance anticipated other than the pole location itself. Other poles will be installed on a concrete foundation. These foundation poles are assumed to have a larger footprint of disturbance. For direct embed poles, one shovel test was excavated at the pole location. For foundation poles, four shovel tests were excavated within a 15 m (50 ft) radius around the pole.

Pursuant to OH-SHPO guidelines, shovel tests measured 50 square centimeters (cm) (19.6 inches [in]) and extended into undisturbed soils. Soils removed from the probes were screened for cultural materials through ¼-in hardware mesh and immediately backfilled. The crew documented and characterized soil stratigraphy according to the Munsell color guide (Munsell 1994). Shovel test probes that exhibited disturbance such as mixed and mottled "A" and "B" horizons or subsoil present at the ground surface were noted to be disturbed, and not fully excavated. Shovel test probes located within delineated wetland boundaries were not excavated.

4 Results

Cardno conducted the fieldwork on May 21, 2021. Weather was warm and sunny, and temperatures averaged 75°F (23.9°C). Ground surface visibility throughout the Project Area ranged from 0 to 90 percent; therefore, Cardno completed the Phase I through a combination of shovel test probe excavation and pedestrian survey. The majority of the project area consisted of an active agricultural field, while the remaining portions consisted of remnant grassy field and roadside right of way. Photographs of the field investigation and typical soil profiles are included in Appendix B.

4.1 Fieldwork Results

Approximately half of the Project Area consists of row crop agricultural land. As ground surface visibility was greater than 50 percent within this portion of the Project Area, it was subjected to pedestrian surface survey. The remainder of the Project Area was located in remnant grassy areas and roadside right of way. These areas were subjected to shovel test survey (Figure 4). Soils in these areas typically ranged from disturbed and mixed soil units in roadside right of way to a very dark grayish brown to brown (10YR 3/2 to 10YR 4/3) silty loam over a gray to yellowish brown (10YR 5/1 to 10YR 5/6) hydric, silty clay loam subsoil. Subsoil also exhibited as a gray (10YR 5/1) silty loam mottled with yellowish brown (10YR 5/6). Several shovel tests in the Project Area were not excavated due to subsurface utilities (Figure 4).

As a result of the fieldwork, no new archaeological sites were identified. Results of the archaeological survey are depicted on Figure 4.

0 75 150 Feet
0 15 30 45 Meters

- Disturbed
- Negative STP
- No Dig, Wetland
- Pole - Direct Embed
- Pole - Foundation
- Delineated Wetland
- Foundation Pole 50ft Buffer
- Pedestrian Survey

N
W E
S

7.5' Quadrangle: WILLIAMSBURG

Project No. j19y465m12

Figure 4: Fieldwork Results
Phase I Archaeological Reconnaissance for the New Half Acre Substation and Transmission Line Relocation Project
Duke Energy
Clermont County, Ohio

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5 Conclusions and Recommendations

In response to a request from Duke, Cardno conducted a Phase I archaeological reconnaissance for 22 new transmission pole locations at the New Half Acre Substation and Transmission Line Relocation Project in Clermont County, Ohio. Based on information provided by Duke, the Project Area is located west of the town of Williamsburg, on the north side of SR 32 and west of Half-Acre Road, on the Williamsburg, Ohio 7.5' USGS topographic map in Clermont County, Ohio. The Project Area consists of multiple new transmission pole locations associated with a new substation.

Background research conducted in February 2021 focused on a 1.6 km (1 mi) study area around the proposed project footprint. The records check found no previously recorded cultural resources located in or adjacent to the proposed Project. A small portion of the Project Area was previously investigated in 1978; however, the survey methodology employed during this time period typically does not align with modern archaeological survey methodology.

Cardno conducted the Phase I fieldwork on May 21, 2021. The goal of this survey was to identify cultural resources that may be affected by the proposed Project activities. The Project Area consists of row crop agricultural land, remnant grassy areas, and roadside right-of-way.No new archaeological sites were identified during the Phase I survey. Based on the results of the field reconnaissance and background research, no further archaeological work is recommended within the Project Area for the project to proceed as planned.

These recommendations are based on the following regulations. Pursuant to Ohio Revised Code §149.53, if archaeological artifacts or human remains are identified during project activities in any location, work within the area must stop and the OH-SHPO must be notified within two (2) business days. In addition, recommendations are based on the current limits of construction. If Project plans should change, further archaeological work may be necessary.

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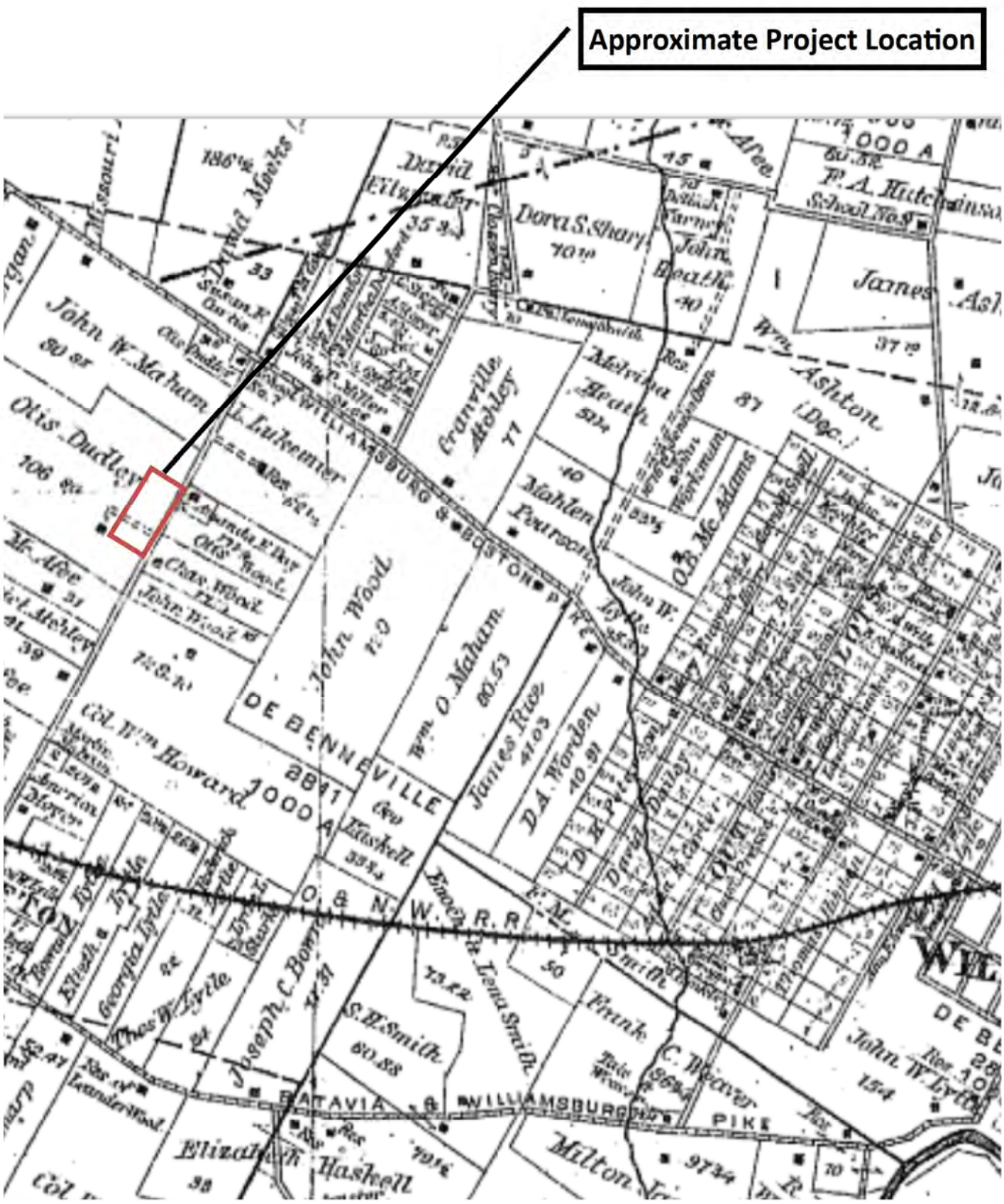
Phase I Archaeological Reconnaissance:
New Half Acre Substation and Transmission Line Relocation Project
Clermont County, Ohio

APPENDIX A

HISTORIC MAPS

www.historicmapworks.com, used with permission

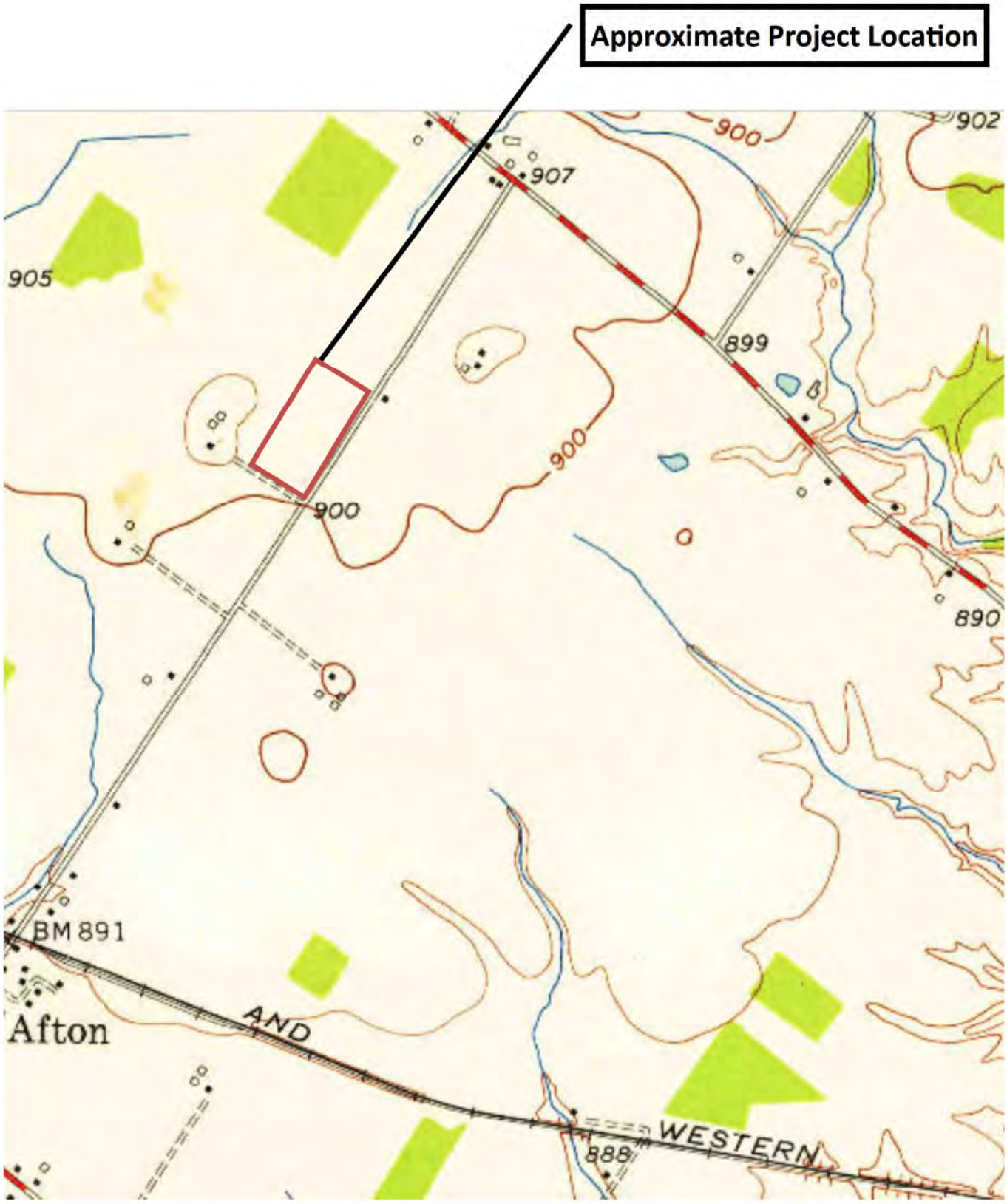


Approximate Project Location

Appendix A: 1916 (1934 Edition) Map

Phase I Archaeological Reconnaissance for the New Half Acre Substation and Transmission Line Relocation Project
Duke Energy
Clermont County, Ohio

Cardno



Project Number: 19Y465012

Appendix A: 1953 (1955 Edition) Map
Phase I Archaeological Reconnaissance for the New Half Acre Substation and Transmission Line Relocation Project
Duke Energy
Clermont County, Ohio

Cardno

Phase I Archaeological Reconnaissance:
New Half Acre Substation and Transmission Line Relocation Project
Clermont County, Ohio

APPENDIX B

PHOTOGRAPHS DOCUMENTING THE PHASE I

Photo 1: Project area overview, photo facing south.

Photo 2: Project area overview, photo facing northeast.

Photo 3: Project area overview, photo facing southwest.

Photo 4: Crew at work.

Project Number:
19Y465012

Project Area Photographs

Phase I Archaeological Reconnaissance for the New Half Acre Substation and Transmission Line Relocation Project
Duke Energy
Clermont County, Ohio

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Photo 5: Typical surface visibility in agricultural field.

Photo 6: Typical shovel test profile.

Photo 7: Typical shovel test profile.

Photo 8: Typical disturbed shovel test.

Project Number:
19Y465012

Project Area Photographs

Phase I Archaeological Reconnaissance for the New Half Acre Substation and Transmission Line Relocation Project
Duke Energy
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Attachment E – Storm Water Pollution Prevention Plan

Storm Water Pollution Prevention Plan

Half Acre Substation & Transmission Line Relocation (M190064) Project

Clermont County, Ohio

Cardno Project J19Y465012

April 19, 2021

Prepared for: **Duke Energy**
139 E. 4th Street
Cincinnati, Ohio 45202

DUKE ENERGY®

Prepared by: **Cardno**
11121 Canal Road
Cincinnati, Ohio 45241

Cardno

Storm Water Pollution Prevention Plan

Half Acre Substation & Transmission Line Relocation (M190064) Project
Clermont County, Ohio

April 19, 2021

Document Information

Project Site Owner	Duke Energy Ohio
Duke Energy Contact	Dane Vandewater, Duke Energy
Project(s) Name	Half Acre Substation & Transmission Line Relocation (M190064) Project
Number	Cardno J19Y465012
Cardno Contact	Cori Jansing, Cardno

This plan was prepared in accordance with the Rainwater and Land Development: Ohio's Standards for Stormwater Management, Land Development and Urban Stream Protection published December 2006 by the Ohio Department of Natural Resources Division of Soil and Water Conservation and in compliance with ORC Chapter 1511, ORC Chapter 6111, and OAC Chapter 3745-38. In Ohio, responsibility for regulating storm water is held by both local and state authorities. Locally, municipalities, townships, and counties have the authority to regulate storm water. Ohio EPA administers the National Pollutant Discharge Elimination System (NPDES) program, which regulates wastewater discharges that are associated with construction and/or land disturbing activities by limiting the quantities of pollutants to be discharged and imposing monitoring requirements and other conditions.

Certification Requirements per Ohio EPA Permit No. OHC000004 Part V.G.

Corporate Certification (Duke Energy- Owner or Owner Representative)

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manages the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name _____
Title _____
Date _____

Contractor Certification (_____ Utility Line General Contractor)

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Name _____
Title _____
Date _____

Contractor Certification (_____ Erosion Control Subcontractor)

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Name _____
Title _____
Date _____

Contractor Certification (_____ Grading and Excavation Subcontractor)

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Name _____
Title _____
Date _____

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Appendices

Figures

Acronyms

SWPPP	Storm Water Pollution Prevention Plan
NOI	Notice of Intent
NOT	Notice of Termination
NWP	Nationwide Permit
OEPA	Ohio Environmental Protection Agency
USACE	United States Army Corps of Engineers

SECTION A – Basic Plan Elements

A1 Plan Index showing locations of required items

See Table of Contents

A2 11 X 17 inch plat showing building lot numbers/boundaries and road layout/names

Please refer to Appendix A, Figure 4, Environmental Access and Erosion Control Plan.

A3 Narrative describing project nature and purpose

The Project included the review of approximately 9.44 acre proposed substation and transmission line relocation (the "Study Area"), located in Williamsburg Township, Clermont County, Ohio (See Figure 1). The Study Area consists of approximately 9.44 acres, with a potential Project earth disrurbance potential of approximately 8.26 acres. Specifically, the Study Area is located north of the James A Rhodes Appalachian Highway (SR 32) and west of Half-Acre Road. (39.072294, -84.093420). In addition to the substation, a total of six (6) structures will be replaced, three (3) new permanent structures will be installed, and four (4) mobile structures will be utalized in conjunction with the Project. A field investigation of the Study Area was conducted on March 2, 2021.

The Half Acre Substaion & Transmission Line Relocation (M190064) Project is necessary in order to maintain the integrity of existing Duke structures and ensure adequate power supplies to current and future utility customers in the area. The substation and transmission line route consists of an existing transmission line corridor and Duke Energy easement.

Construction will be accomplished largely through the use of bucket trucks with truck-mounted augers for structure installation and other construction vehicles transporting cable spools to install the transmission cable along the route. Excavation will be restricted to the locations where the installation of new structures will occur and construction of the substation. Earth moving activities are anticipated to be minimal, specific to the substation. The extent of access disturbance can vary widely dependent upon many factors, including density and type of surface, vegetative cover, weather conditions, and the type of vehicles moving over the area. The existing vegetation will be preserved to the maximum extent practicable.

Project construction is expected to begin in Fall 2021.

A4 Vicinity map showing project location

Please refer to Appendix A, Figure 1, Project Vicinity map, which provides a simplified layout of Project activities and adjacent land features and information.

A5 Legal description of the project site

The Project crosses the following section:

Williamsburg, Ohio Quad

Williamsburg Township, Clermont County, Ohio

A6 Location of all lots and proposed site improvements

The proposed Project will take place entirely within Duke Energy property and easement. Only approved areas beyond the property and easement boundaries will be used for equipment storage, temporary access routing, and laydown areas. Where feasible, construction activities at structure locations will be performed from roadways to minimize soil disturbance. Maps of the project site including structure locations, parcel boundaries, and water resources can be found in Appendix A, Figure 4, Environmental Access and Erosion Control Plan.

A7 Hydrologic Unit Code (HUC)

The Project lies within the boundaries of the following 14-Digit USGS Hydrologic Unit Code watersheds:

East Fork Little Miami River below Cloverlick Creek to below Lucy Run (14-digit HUC 05090202120030)

East Fork Little Miami River below S.R. 276 at Williamsburg to above Cloverlick Creek (14-digit HUC 05090202110030).

A8 Notation of any State or Federal water quality permits

Proposed impacts to one (1) palustrine emergent wetland (Wetland 1) may require a permit from either the U.S. Army Corps of Engineers (USACE) or the Ohio Environmental Protection Agency (OEPA) dependent upon the authorized jurisdictional determination (JD) and final Project layout. The Notice of Intent (NOI) for storm water discharges will be submitted contingent on the local reviewing agency approval(s).

A9 Specific points where storm water discharge will leave the site

All discharges are planned to consist solely of storm water runoff through sheet flow leading to existing water courses. There are no planned non-storm water discharges associated with the proposed Project.

A10 Location and names of all wetlands, lakes, and watercourses on and adjacent to the site

Wetlands, watercourses, and other waters have been delineated with respect to pole placement. These locations are shown in Appendix A, Figure 4, Environmental Access and Erosion Control Plan. The National Wetland Inventory (NWI) mapped wetlands are shown in Appendix A, Figure 4, Project Vicinity.

A11 Identification of all receiving waters

The storm water runoff from the project will ultimately discharge into the East Fork Little Miami River through unnamed streams/tributaries.

A12 Identification of potential discharges to groundwater

The proposed Project does not contain any known sinkholes, active or abandoned wells, or any other direct groundwater recharge points. Any recharging of the groundwater supply by water from the proposed site will be by natural means of infiltration through the soil.

A13 100 year floodplains, floodways, and floodway fringes

None of the structures associated with the Half Acre Substation & Transmission Line Relocation (M190064) Project were within the FEMA-defined floodplain boundaries. See Appendix A, Figures 4.1 to 4.2, for the location of floodplains. No floodplain permit is required.

A14 Pre-construction and post-construction estimate of peak discharge

Based on the nature of this Project, there will be no impounded storm water. There is no anticipated significant change in peak discharge from this project site between pre-construction and post-construction site conditions or new or impervious surfaces.

A15 Adjacent land use, including upstream watershed

Adjacent land use consists of a mix between urban, secondary deciduous forest, agricultural, and maintained right-of-way (ROW).

A16 Locations and approximate boundaries of all disturbed areas

The majority of ground disturbance will be associated with the construction of the proposed substation location. Additional disturbance will occur as a result of off-road sections of construction vehicle access routes and the structure installation locations. The expected disturbance for this Project is conservatively estimated at 8.26 acres.

A17 Identification of existing vegetative cover

The existing vegetative cover is mixture of maintained right-of-way (ROW), agricultural, scrub/shrub with isolated tree clusters, and emergent wetland within the existing transmission line ROW.

A18 Soils map including descriptions and limitations

According to the NRCS Soil Survey Geodatabase data collected for Clermont County, two (2) mapped soil units are present within the Study Area and one (1) is listed as hydric. See Appendix A, Figure 3, Soils Classifications for soil types and hydric classification by line segment.

A19 Locations, size, and dimensions of proposed storm water systems

There is no proposed construction of any permanent storm water systems.

A20 Plan for any off-site construction activities associated with this project

No off-site construction activities are planned for this Project.

Any temporary staging and laydown areas for both new and used structures and other equipment will be identified near the time of construction. Typically, Duke Energy substations are utilized for storage or distribution, and used structures are taken off-site. Storm water protection will be integrated as necessary at laydown areas and amended into the plan and routine inspections by the Construction Supervisor.

A21 Locations of proposed soil stockpiles, borrow and/or disposal areas

It is anticipated that no soil fill will be brought in. However, gravel backfill will be used at structure locations. Where wetland or stream impacts may occur, spoils management protocol will be followed during structure installation. Where appropriate, any excavated soil, gravel backfill, or other construction material will be stored on construction matting within a wetland area and erosion control measures will be implemented. Excess soil from boring or auguring operations will be permanently relocated to an upland location away from surface drainage ways and wetland areas adjacent to structure replacement locations.

A22 Existing site topography at an interval appropriate to show detailed drainage patterns

Given the Project area runs through variable terrain, the existing drainage patterns are best depicted and evaluated with 1 foot contours shown in Appendix A, Figure 4, Environmental Access and Erosion Control Plan.

A23 Proposed final topography at an interval appropriate to show detailed drainage patterns

Final post-construction contours will match pre-construction condition to the extent practicable. The construction scope is limited to the replacement of utility structures and overhead facilities.

SECTION B – Active Construction Component

B1 Description of potential pollutant sources associated with the construction activities

The anticipated pollutants to be generated by this type of construction include the following:

- Sediment carried off-site by storm water runoff
- Vegetation debris generated during onsite vegetation removal
- Concrete washout and dewatering operations for projects with foundations
- Domestic garbage from construction workers
- Potential for petroleum spills from heavy equipment operation and refueling

Clearing and/or maintenance trimming will involve mowing and limb cutting with standard forestry equipment and hand cutting where required. In instances where tree or large limbs are removed entirely for access or maintenance they will be cut into appropriate lengths for use by the landowner, or otherwise chipped within the ROW. Digging, grubbing, and any other disturbance will be restricted to locations where the installation of new structures will occur. All excavated materials will be distributed in approved upland locations away from surface drainage ways. Wood chippings and other low-height vegetation will be distributed within the ROW to the maximum extent possible to assist in soil stabilization and sediment runoff control.

Any and all domestic garbage generated onsite such as disposable food and drink containers and other items shall be either carried off-site and properly disposed or deposited into a construction dumpster provided onsite. The project site shall be monitored on a daily basis for the proper disposal of such waste.

The erosion of exposed soils by storm water runoff shall be controlled through the installation of best management practices (BMPs) such as silt fence, fiber rolls, or similar barriers, followed by seeding and mulching. All such practices shall be installed and maintained in accordance with Appendix B, Storm Water Pollution Prevention Plan Typical Details.

Equipment cleaning will be limited to water washing in sediment and erosion controlled areas as required to insure reliable equipment operations while preventing the tracking of excessive dirt and mud from the project site. Soil materials that may need to be removed from the Project ROW will be taken to an upland area or other designated disposal area.

Concrete washout will be completed on projects with foundations at designated concrete washout stations for containment of this waste in accordance with Appendix B, Storm Water Pollution Prevention Plan Typical Details. Any dewatering associated with the excavation for the placement foundations will be conducted through an approved dewatering bag or other upland means of filtering dewatering point discharges.

B2 Sequence describing storm water quality measure implementation relative to land disturbing activities

Due to the nature of the Project, multiple construction stages may take place simultaneously within the Study Area. Below is the general sequence of construction activities and storm water quality measures implementation:

The general sequence of construction activities includes the following:

1) Installation of temporary construction entrances
2) Installation of temporary erosion and sediment control measures
3) Construction equipment access
4) Removal of existing poles and conductors
5) Installation of new poles and conductors

6) Final restoration (final grading, seeding, and stabilization)
7) Removal of temporary erosion and sediment control measures
8) Removal of temporary construction entrances

The storm water pollution prevention measures described within this SWPPP will be installed and inspected before soil disturbing activities commence. Structural erosion controls may also need to be installed along equipment access routes dependent upon site condition. These needs will be assessed as the project progresses. Any erosion controls that need to be moved for equipment transfers will be restored, to the extent practical, before significant rainfalls occur. All storm water quality control measures shall be inspected regularly. At the completion of the project all disturbed areas will be stabilized with vegetation and straw mulch. All measures will be in accordance with guidelines provided in the *Rainwater and Land Development* and this Plan.

As conditions may vary from pre-project condition during construction, sediment control measures may be altered and additional locations for such measures may be needed depending upon changing field conditions. Additional measures may be required and implemented as they become warranted and should be documented in Appendix D, SWPPP Amendment Log. SWPPP revisions or altercations require review and/or approval by a trained individual experienced in the principles of storm water, erosion and sediment control, treatment, and monitoring for Duke Energy Projects.

Recognizing the increased potential for erosion special care will be taken to seed and mulch construction travel ways in highly erodible or steep slope areas. Additional measures such as water bars, erosion matting, or other appropriate measures may be employed as necessary to protect the land surface from erosion until termination of the permit is verified and the Notice of Termination (NOT) is filed with OEPA (Blank copy of NOT is provided in Appendix E).

Stabilized construction entrances or other means of limiting the tracking of sediment and debris off-site will be used at roadway intersections whenever possible. All debris or sediment tracked onto road ways will be removed at the end of the day to the maximum extent possible. Large equipment movement to each structure associated with, but not limited to, disassembly, framing, and clipping-in of line will be limited to the maximum extent possible to further reduce ground disturbance.

Temporary or permanent seeding stabilization will adhere to specifications in Subsections B11 and B12. Vegetated areas with a density of less than seventy percent (70%) shall be re-stabilized using appropriate methods to minimize the erosion potential. No structural erosion controls will be removed until construction has permanently stopped and reseeding and mulching has occurred. After the entire project is complete and vegetated coverage is at least 70% any accumulated sediment, fiber rolls, silt fence, or other specified erosion and sediment control measures will be removed.

Wherever equipment crossing drainage ways in steeply sloping areas will result in soil disturbances a combination of temporary timber matting bridges and water bars to divert runoff to the installed sediment controls or vegetative filter areas will help reduce impacts from concentrated flows to receiving streams.

B3 Stable construction entrance locations and specifications

Stabilized construction entrances will be installed when warranted based on project duration or varying site conditions impacted by wet weather patterns. Special consideration shall be given for installation of a stable construction entrance in the event of wet weather or high ingress and egress traffic. Stable construction entrances and other means of limiting the tracking of sediment and debris off-site will be used. Additional construction entrances, other than the ones indicated in the Plans, may be required and implemented as they become warranted based on variable site conditions. All debris or sediment tracked onto roadways will be removed at the end of the day to the maximum extent possible. The existing construction entrances will be evaluated and modified to be in accordance with *Rainwater and Land Development* and this Plan as deemed necessary.

B4 Sediment control measures for sheet flow areas

Runoff and sediment control practices will include a combination of fiber roll (or other plant fiber-based barrier) and/or silt fencing. These sedimentation and erosion control measures will be located at specific locations along the construction route to prevent sediment runoff into streams, wetlands, and other open waters. The placement and use of erosion control structures indicated in Appendix A, Figure 4, Environmental Access and Erosion Control Plan will be installed in accordance with Appendix B, SWPPP Typical Details and be in compliance with the *Rainwater and Land Development* manual. If required, additional appropriate structural controls will be implemented as the Project progresses. Plan changes require approval of Duke Energy.

B5 Sediment control measures for concentrated flow areas

No areas of concentrated flow are expected for this Project. If conditions dictate fiber roll or rock check dams will be used, as appropriate, within the ephemeral drainages along the route to limit sedimentation within the drainage and off-site. At locations where equipment crosses drainage ways in steeply-sloping areas, which could result in soil disturbance, a combination of temporary timber matting bridges and water bars to divert runoff to sediment controls or vegetative filter areas can help reduce impacts from concentrated flows to receiving streams.

B6 Storm sewer inlet protection measure locations and specifications

Not applicable for this Project.

B7 Runoff control measures

Water bars can be used to prevent runoff flows from occurring in wheel rutting on steep slopes which will impact receiving streams.

B8 Storm water outlet protection specifications

Not applicable for this Project.

B9 Grade stabilization structure locations and specifications

Not applicable for this Project.

B10 Location, dimensions, specifications and construction details of each storm water quality measure

The locations of the sediment control structures are indicated in Appendix A, Figure 4, Environmental Access and Erosion Control Plan. The general specifications for each practice are located in Appendix B, SWPPP Typical Details. As construction, progresses Duke Energy will consider modification to or addition of erosion control structures depending on changing site conditions with respect to slope and proximity to adjacent water bodies.

B11 Temporary surface stabilization methods appropriate for each season

In the event temporary stabilization is required (when construction activity has ceased but will resume in fourteen (14) days or more), either seeding or mulch application or other stabilization measure will be implemented within seven (7) days of the most recent disturbance. Areas within 50 feet of a stream (including intermittent streams) will be stabilized within 2 days of the most recent disturbance. Mulch alone is acceptable temporary cover and may be use in lieu of temporary seeding, provided that it is appropriately anchored. A high potential for fertilizer, seed, and mulch to wash exists on steep banks, cuts, and in channels and areas of concentrated flow.

Table 1. Temporary Seed Mixture

Species	Application Rate
Annual Ryegrass	40 lbs./acre
Oats	128 lbs./acre
Tall Fescue	40 lbs./acre

Straw mulch should be used at a rate of 2 tons/acre or 90 lbs./1,000 sq. ft. for seed protection and additional erosion control. It should be spread by hand or machine and be crimped or anchored, as appropriate. If slopes necessitate the use of a mulch cover, then erosion control blanketing shall be substituted. No hay should be used as it may introduce invasive non-native species to adjacent undisturbed habitats (such as hardwood forests or wetland areas).

B12 Permanent surface stabilization specifications

Areas within fifty (50) feet of a stream will require permanent surface stabilization within two (2) days of the last disturbance. Stream bank and riparian floodplain areas shall be mulched and seeded with the Stream Bank and Riparian Areas Restoration Seed Mix as recommended by Ohio DNR staff as follows.

Table 2. Stream Bank and Riparian Areas Restoration Seed Mix

Grass and Sedge Species	Application Rate
Andropogon gerardii (Big Bluestem)	24 oz./acre
Bouteloua curtipendula (Sideoats Grama)	1 oz./acre
Carex bicknellii (Prairie Oval Sedge)	2 oz./acre
Elymus canadensis (Canada Wild Rye)	2 oz./acre
Dactylis glomerata (Orchard grass)	24 oz./acre
Panicum virgatum, Switchgrass)	4 oz./acre
Schizachyrium scoparium (Little Bluestem)	3 oz./acre
Sorgastrum nutans (Indian Grass)	0.5 oz./acre
Cover Crop Species	Application Rate
Avena sativa (Seed Oats)	800 oz./acre
Lolium multiflorum (Annual Ryegrass)	160 oz./acre

All other areas of soil disturbance will be seeded and mulched for permanent surface stabilization within seven (7) days in areas where construction has ceased and the site is at final grade or will lay dormant for more than one (1) year. Any permanent seeding should consist of a seed mixture appropriate for the area that has been disturbed and conducted during the season appropriate for its installation.

Non-agricultural areas including access and other vegetated ROW areas shall be permanently mulched and seeded with a general use permanent seed mix consisting of the following:

Table 3. General Use Permanent Seed Mixture

Species	Application Rate
Kentucky Bluegrass	20-40 lb/acre
Perennial Ryegrass	10-20 lb/acre
Creeping Red Fescue	20-40 lb/acre

Site Preparations for installing both seed mixes are as follows:

Site Preparation: Use appropriate equipment to level disturbed areas and return to original grades focusing on reinforcing positive drainage. Avoid compaction during construction by placing equipment on mats to access wet or saturated areas. Soil amendments are acceptable in non-native seeding areas.

Seed Preparation: Thoroughly mix the seed prior to planting as many of the heavier seeds may have settled during shipping. The seed mix will contain a temporary cover of Common Spring Oat and Annual Ryegrass to accelerate re-vegetation.

Planting: Seed will be worked into the soil no greater than a ¼ inch in depth. For smaller areas a hand broadcaster and rake can be used. For larger areas the seed can be installed mechanically with a seed box no-till drill (Truax™ Trillion Broadcast Seeder or equivalent). Areas that are too wet for mechanical seeding will be installed via the hand broadcasting method.

Mulching: Straw mulch should be used at a rate of 2 tons/acre for all natural areas, non-maintained areas, for seed protection and additional erosion control. Swales and other areas of concentrated flow should be stabilized with erosion control blanketing.

B13 Material handling and spill prevention plan

Unlikely incidents involving spills or releases of other non-sediment pollutants are expected to be limited to small quantities of petroleum products from construction vehicles, including but not limited to motor oil, transmission fluids, and hydraulic oils. Spill clean-up kits and personnel trained in their use will be at each construction location. No vehicle maintenance activities that could result in storm water contamination (oil changes or engine repairs) will be permitted outside of stabilized construction areas. Appropriate spill control measures (oil absorbent pads or booms) must be in place before maintenance activities occur.

Spills of any amount of petroleum product or polluting materials are to be prevented. The following list details general requirements necessary to avoid spills and minimize the impact of accidental spills:

- No bulk quantities of diesel fuel and gasoline will be stored on the site. No bulk quantities of hazardous materials including solvents and lubricants will be stored on the site.
- Vehicles and equipment are expected to be re-fueled off-site. Fuel carriers (if applicable) and transported equipment will be inspected on a daily basis for leaks prior to entering the site and will not be allowed on site until leaks are repaired.
- The equipment staging area will be located away from surface waters and any private and municipal water wells.
- All construction equipment will be inspected daily for leaks prior to start of work. Any leaking equipment will be repaired, as necessary.
- If any soil is contaminated with hydrocarbons or other objectionable material, it will be segregated and properly disposed of off-site.
- If concrete materials are used on-site, concrete washouts should be used. No washout of concrete materials should occur within wetland areas or other drainage ways.

Project related solid wastes will be collected regularly and transferred to a licensed solid waste disposal site. No construction waste materials will be buried onsite. Portable sanitary waste units will be utilized and available for the project. A licensed sanitary waste management contractor will collect sanitary waste from the portable units as necessary. It will be the responsibility of the Construction Supervisor to ensure that all construction personnel are instructed regarding the correct procedure for waste disposal and that these practices are followed.

Contractors shall provide all necessary labor, materials, equipment, and response capabilities to prevent oil releases. Contractors causing an oil release must take appropriate actions to minimize the environmental impacts of the release.

If a hazardous substance release or oil spill requiring attention shall occur during construction, the responsible party shall immediately contact the Duke Energy Construction Supervisor, who will then contact Duke Energy Health and Safety or Environmental Services to report the spill as necessary and ensure that the spill is cleaned up properly by the responsible party or an approved remediation contractor.

In an emergency, immediately report all spills to the appropriate Duke Energy Coordinator. All spill notifications shall follow Duke Energy procedures.

Duke Energy Spill Hotline 1-800-527-3853

B14 Monitoring and maintenance guidelines for each proposed pollution prevention measure

To maintain the storm water management system in effective operating condition, erosion and sedimentation control structures will be inspected daily if construction personnel are actively working in the area. In addition, each installed erosion and sedimentation control structure, and areas contributing to storm water discharges at the locations of these structures, will also be regularly inspected at least weekly and again after each rainfall/precipitation event exceeding ½ inch in 24 hours by qualified personnel under the direction of Duke Energy.

Any damage or deficiency noted during routine or regular inspections will be recorded on a Storm Water Evaluation Form for Construction (Appendix C) and corrected as directed by the Construction Supervisor. The written inspection records will be kept on file and will include notes on any corrective actions taken. If requested, these records will be made available for review by the 'inspecting authority within 48 hours' per OAC Chapter 3745-38 (NPDES). Inspection records will be kept onsite with the SWPPP to the greatest extent possible.

Any deficiencies will be corrected by repair of damaged or deteriorated controls or by modifying structural or operational practices to achieve the desired results. If needed, the SWPPP shall be revised following such modifications.

Maintenance of stabilization and erosion control measures will include the following:

- "Qualified Inspection Personnel" under the direction and designation of the Construction Supervisor will be responsible for inspections of the erosion controls and completion of the Storm Water Evaluation Form for Construction.
- It is the responsibility of the Construction Supervisor that all personnel selected for maintenance responsibilities are trained in repairs as necessary to keep the erosion and sedimentation controls in good working order.
- Fiber rolls, silt fence, or other specified erosion control measure will be inspected for proper installation and function to include the following: proper anchoring of all controls, depth of sediment, separation from adjacent structures, and to see that stakes are firmly in the ground. Built up sediment will be removed when it has reached one-half (1/2) the height of the control and placed in previously stabilized and upland area.
- Seeded areas shall be checked regularly for bare spots, washouts, and healthy growth to assure that a good stand of grass is being maintained. Areas that fail to establish vegetation cover will be re-seeded as soon as such areas are identified.
- Sediment tracking from temporary construction entrances onto roadways should be minimized and will be the responsibility of the Construction Supervisor. When sediment is observed on roadways it shall be removed at the end of each workday.

B15 Erosion & sediment control specifications for individual building lots

Not applicable for this project.

SECTION C – Post Construction Component

C1 Description of pollutants and their sources associated with the proposed land use

The proposed Project includes the relocation of an existing transmission line and the construction of a new substation consisting of a construction pad and improvements to Duke Energy Ohio ROW. No post construction pollutants are expected.

C2 Sequence describing storm water quality measure implementation

Seeding and vegetation establishment are the only long-term storm water quality measures proposed for the Project. See Subsection B11 and B12 for a description of seeding implementation.

C3 Description of proposed post construction storm water quality measures

The Project are will be returned to its previous use and condition. Post-construction pollutant controls are addressed by establishment of permanent vegetative cover in all areas, except those that will be returned to agricultural crops. Cover crop, or nurse crop seed mix, may be used in agricultural areas that are not to be immediately cultivated.

C4 Location, dimensions, specifications and construction details of each storm water quality measure

See Subsection C3.

C5 Description of maintenance guidelines for proposed post construction water quality measures

Seeded areas will be inspected to ensure adequate vegetative establishment and coverage. Adequate coverage shall be defined as greater than or equal to 70% areal coverage by visual estimation. Reseeding, watering or fertilization shall be utilized to meet this goal. Fertilizer should not be used in areas requiring native seeding. The ROW will be maintained in accordance with easement guidelines and consist of vegetative mowing and/or woody removal. All temporary erosion and sediment control measures will be removed prior to the NOT being approved.

Routine inspections and monitoring of erosion control structures will end and structures removed, once the disturbed soil areas are permanently re-established with a vegetative cover of at least 70% or greater density (final stabilization). Final stabilization in agricultural areas is defined as returning the disturbed land to it pre-construction agricultural use.

When all construction and ground disturbance activities have ceased, final stabilization has been documented, and all temporary erosion measures are removed, if required the NOT shall be submitted to the OEPA within 45 days. The NOT shall be also submitted to any other Local agencies that required review of the Project.

Appendix A

Figures

STORMWATER POLLUTION PREVENTION PLAN
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT

PLANS PREPARED FOR:

DUKE ENERGY OHIO
139 4TH STREET
CINCINNATI, OHIO 45202-4161

PLANS PREPARED BY:

CARDNO INC.
11121 CANAL ROAD
CINCINNATI, OHIO 45241

MIGRATORY BIRD HOTLINE

STATE AND FEDERAL LAWS PROTECT ALL SPECIES OF NATIVE BIRDS FOUND THROUGHOUT THE DUKE ENERGY SERVICE AREA. INTERACTIONS OF BIRDS WITH GENERATING FACILITIES, TRANSMISSION AND DISTRIBUTIONS, SUBSTATIONS, OTHER STRUCTURES AND EQUIPMENT, AND OPERATIONS ARE POTENTIALLY HARMFUL OR FATAL TO BIRDS. DUKE ENERGY OPERATES THESE 24-HOUR MIGRATORY BIRD HOTLINES TO ASSIST EMPLOYEES AND CONTRACTORS WITH RELATED INCIDENTS THAT OCCUR DURING WORK ACTIVITIES.

MIDWEST: 317.430.4497
CAROLINAS: 800.573.3853
FLORIDA: 727.386.3084

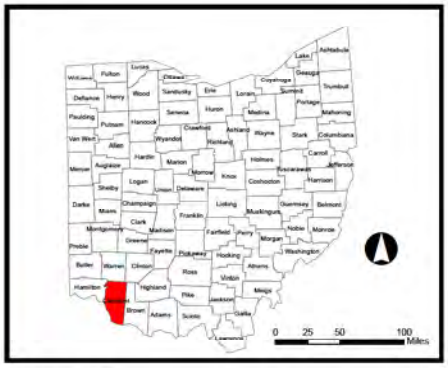
811 CALL BEFORE YOU DIG:

CONTRACTOR SHALL NOTIFY "OHIO ONE CALL" (811) OR (1-800-362-2764) AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EX. UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDED THEIR OWN LOCATOR SERVICES INDEPENDENT OF "OHIO ONE CALL". REPORT ANY DISCREPANCIES TO THE ENGINEER IMMEDIATELY.

SPILL REPORTING HOTLINE:

IN ORDER TO ENSURE THE PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT, FEDERAL AND STATE LAWS REQUIRE THAT CERTAIN TYPES OF SPILLS AND UNPERMITTED RELEASES BE REPORTED TO THE PROPER REGULATORY AGENCIES AS SOON AS POSSIBLE FOLLOWING IDENTIFICATION. IMMEDIATELY NOTIFY YOUR SUPERVISOR AND THE FIELD ENVIRONMENTAL/EHS PROFESSIONAL WHEN A SPILL OR UNPERMITTED RELEASE IS DISCOVERED. IF YOU ARE UNABLE TO REACH THE FIELD ENVIRONMENTAL/EHS PROFESSIONAL, CONTACT ONE OF THE DUKE ENERGY SPILL REPORTING HOTLINES AT:

CAROLINAS & MIDWEST: 800.527.3853
FLORIDA: 866.769.1266



VICINITY MAP

Williamsburg Township
Clermont County, Ohio

MAINTENANCE DISTRICT

Clermont County MS4

CIVIL/GEOGRAPHICAL INFO:

The Duke Energy Ohio Half Acre Substation & Transmission Line Relocation (M190064) Project initiates at the Duke Energy proposed substation (39.072294 N, -84.093420 W) located north of the James A Rhodes Appalachian Highway (SR 32) and west of Half-Acre Road.

MAP REFERENCES

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017.

Existing Facility | State Highway | Project Centerline
Study Area | US Highway | County Boundary
Interstate | Railroad | Municipal Boundary

DUKE ENERGY.
Cardno

COVER SHEET
STORMWATER POLLUTION PREVENTION PLAN
HALF ACRE SUBSTATION & TRANSMISSION LINE
RELOCATION (M190064) PROJECT
DUKE ENERGY OHIO

DRAWN BY: COD | DATE: 4/15/2021
CHECKED: CAJ | APPROVED: CAJ

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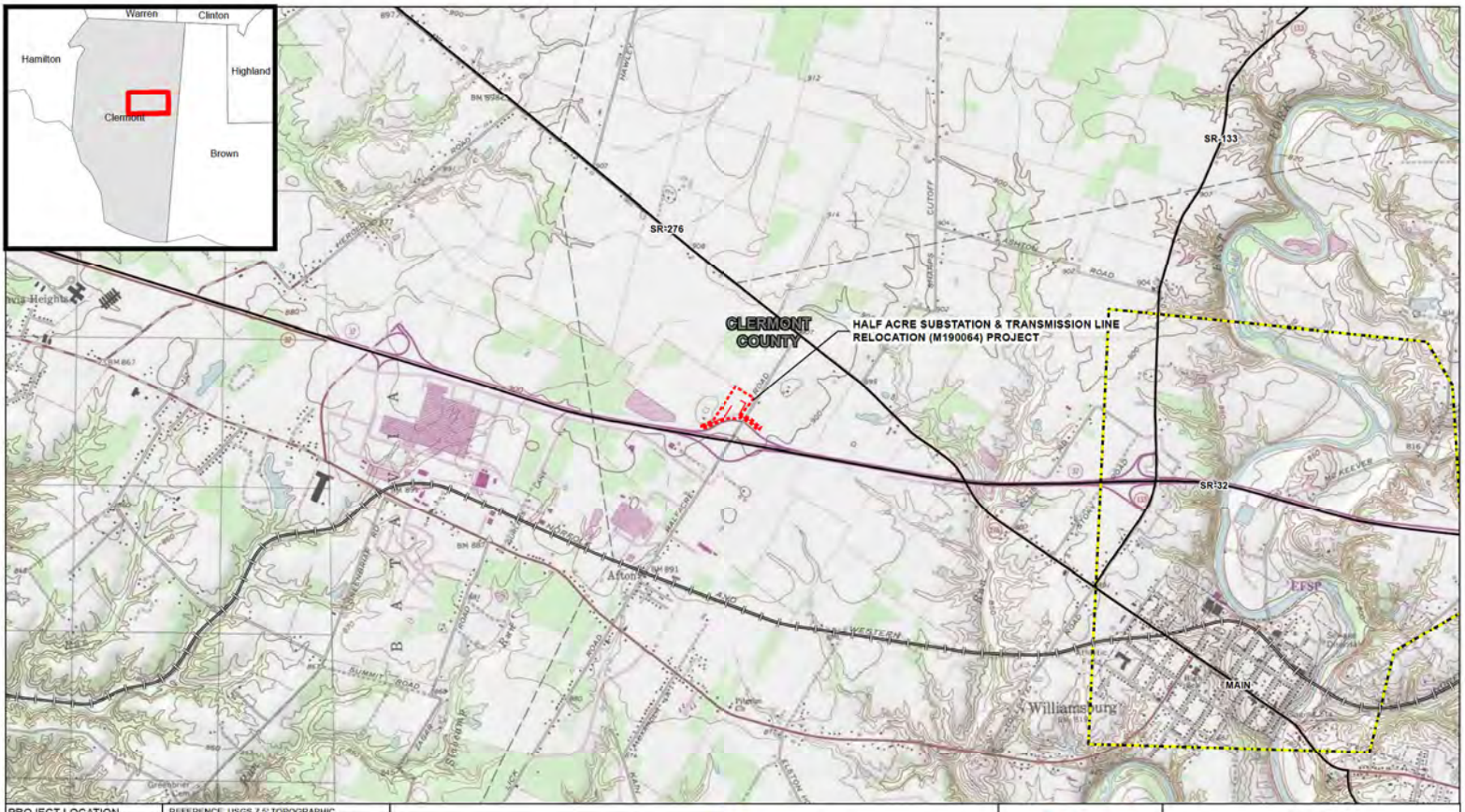

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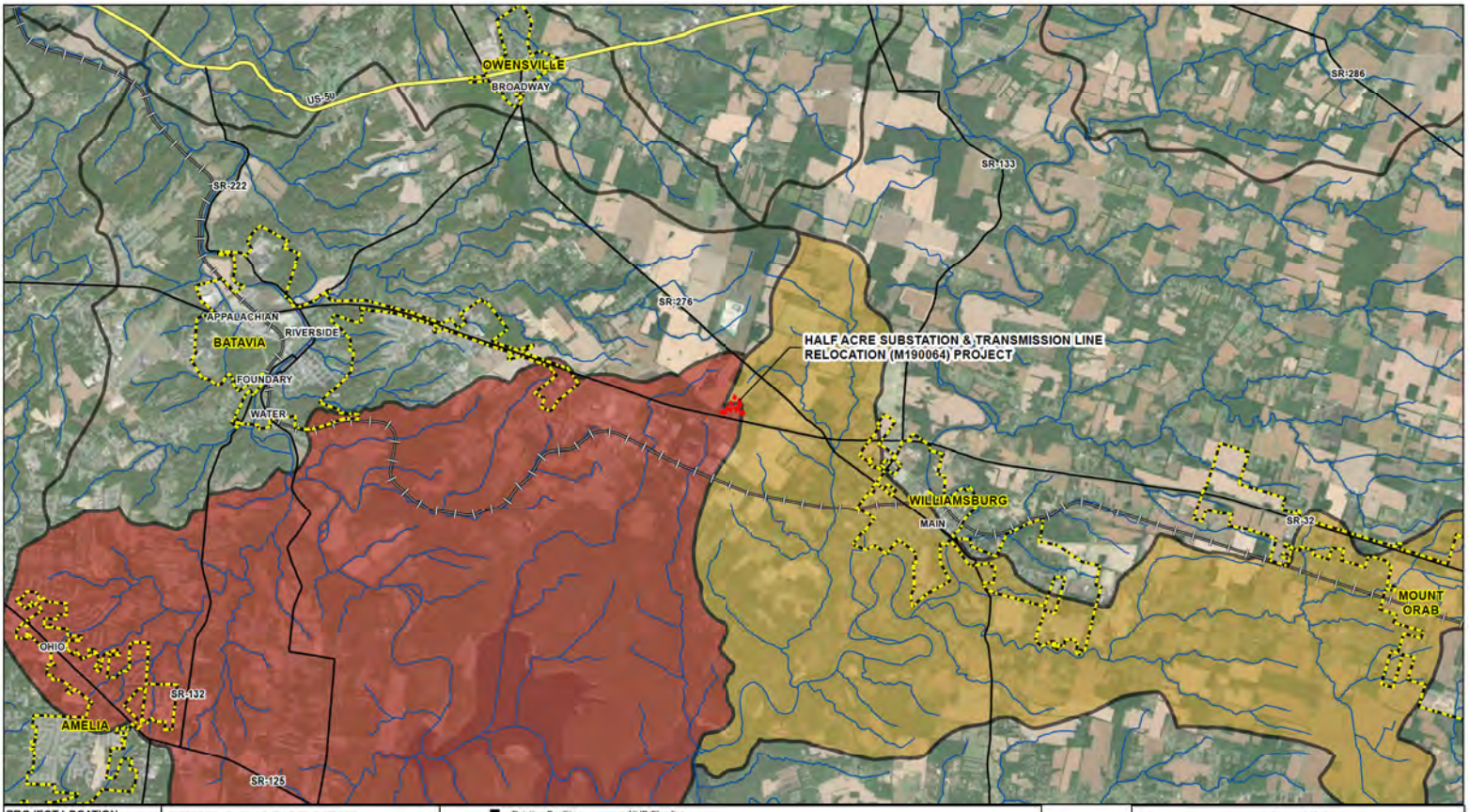

PROJECT LOCATION

CLERMONT COUNTY, OH

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017

N

0 3,000 6,000 12,000 Feet

- Existing Facility
- Study Area
- Project Centerline
- Municipal Boundary
- Interstate
- State Highway
- US Highway
- Railroad
- NHD Flowline
- Adjacent Watersheds
- East Fork Little Miami R. below Cloverlick Cr. to below Lucy Run
- East Fork Little Miami R. below S. R. 276 at Williamsburg to above Cloverlick Cr.

DUKE ENERGY.

Cardno

FIGURE 2
STORMWATER POLLUTION PREVENTION PLAN
HALF ACRE SUBSTATION & TRANSMISSION LINE
RELOCATION (M190064) PROJECT
DUKE ENERGY OHIO
PROJECT AREA WATERSHEDS

DRAWN BY: COD DATE: 4/15/2021
CHECKED: CAJ APPROVED: CAJ

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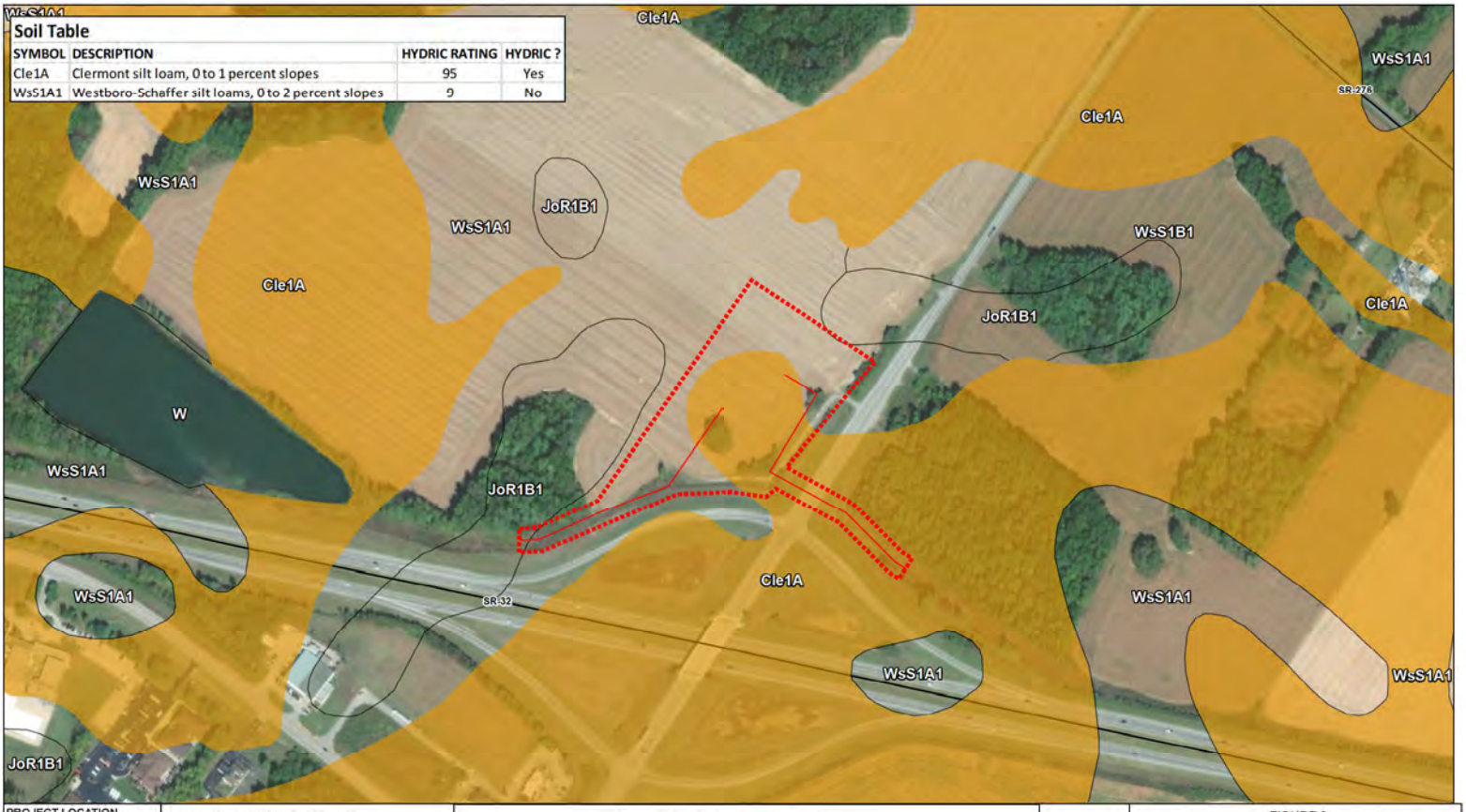

FIGURE 3
STORMWATER POLLUTION PREVENTION PLAN
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT
DUKE ENERGY OHIO
SOIL CLASSIFICATIONS

DRAWN BY: COD DATE: 4/15/2021
CHECKED: CAJ APPROVED: CAJ

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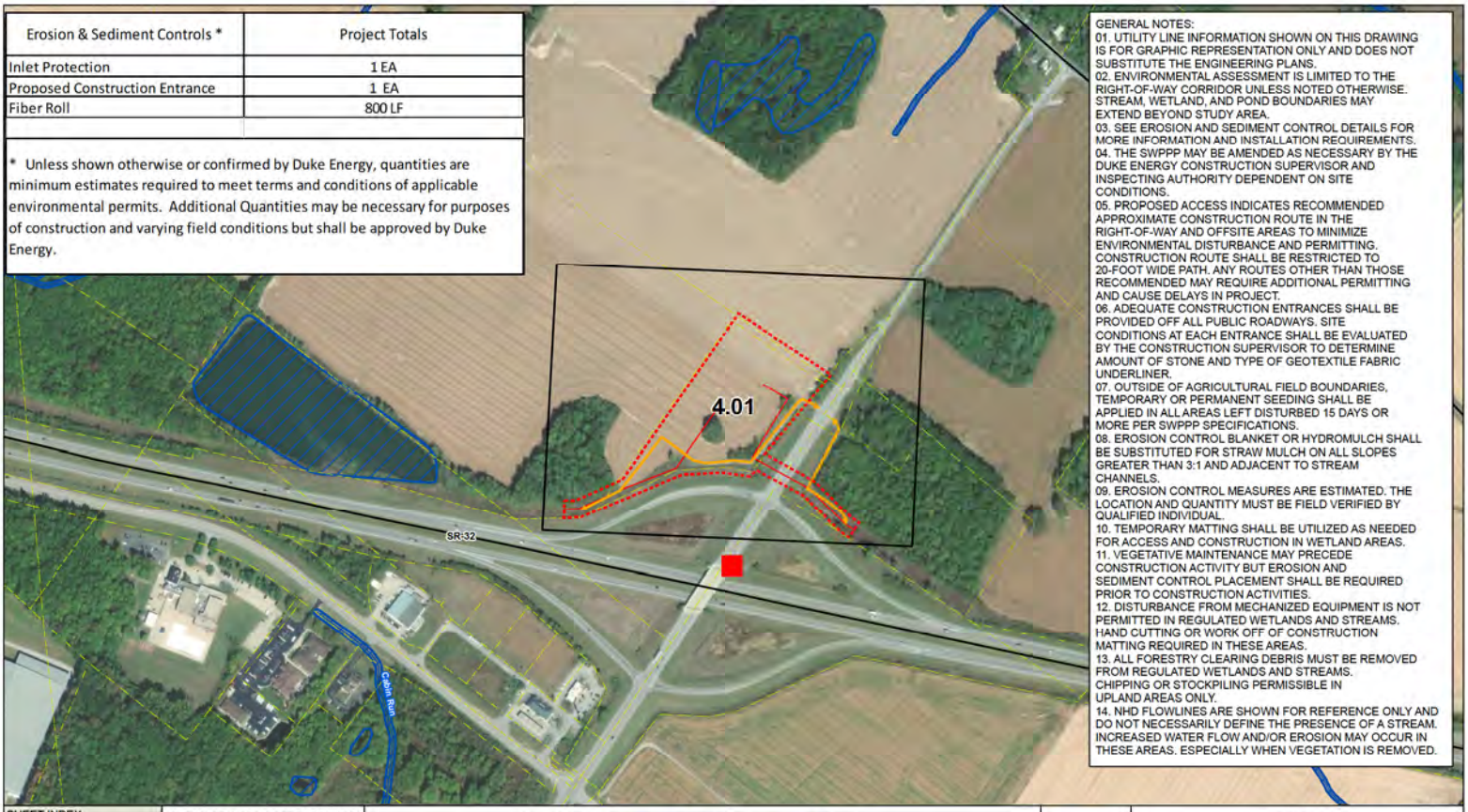
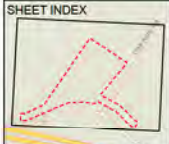
Erosion & Sediment Controls *	Project Totals
Inlet Protection	1 EA
Proposed Construction Entrance	1 EA
Fiber Roll	800 LF

* Unless shown otherwise or confirmed by Duke Energy, quantities are minimum estimates required to meet terms and conditions of applicable environmental permits. Additional Quantities may be necessary for purposes of construction and varying field conditions but shall be approved by Duke Energy.



GENERAL NOTES:
01. UTILITY LINE INFORMATION SHOWN ON THIS DRAWING IS FOR GRAPHIC REPRESENTATION ONLY AND DOES NOT SUBSTITUTE THE ENGINEERING PLANS.
02. ENVIRONMENTAL ASSESSMENT IS LIMITED TO THE RIGHT-OF-WAY CORRIDOR UNLESS NOTED OTHERWISE. STREAM, WETLAND, AND POND BOUNDARIES MAY EXTEND BEYOND STUDY AREA.
03. SEE EROSION AND SEDIMENT CONTROL DETAILS FOR MORE INFORMATION AND INSTALLATION REQUIREMENTS.
04. THE SWPPP MAY BE AMENDED AS NECESSARY BY THE DUKE ENERGY CONSTRUCTION SUPERVISOR AND INSPECTING AUTHORITY DEPENDENT ON SITE CONDITIONS.
05. PROPOSED ACCESS INDICATES RECOMMENDED APPROXIMATE CONSTRUCTION ROUTE IN THE RIGHT-OF-WAY AND OFFSITE AREAS TO MINIMIZE ENVIRONMENTAL DISTURBANCE AND PERMITTING. CONSTRUCTION ROUTE SHALL BE RESTRICTED TO 20-FOOT WIDE PATH. ANY ROUTES OTHER THAN THOSE RECOMMENDED MAY REQUIRE ADDITIONAL PERMITTING AND CAUSE DELAYS IN PROJECT.
06. ADEQUATE CONSTRUCTION ENTRANCES SHALL BE PROVIDED OFF ALL PUBLIC ROADWAYS. SITE CONDITIONS AT EACH ENTRANCE SHALL BE EVALUATED BY THE CONSTRUCTION SUPERVISOR TO DETERMINE AMOUNT OF STONE AND TYPE OF GEOTEXTILE FABRIC UNDERLINER.
07. OUTSIDE OF AGRICULTURAL FIELD BOUNDARIES, TEMPORARY OR PERMANENT SEEDING SHALL BE APPLIED IN ALL AREAS LEFT DISTURBED 15 DAYS OR MORE PER SWPPP SPECIFICATIONS.
08. EROSION CONTROL BLANKET OR HYDROMULCH SHALL BE SUBSTITUTED FOR STRAW MULCH ON ALL SLOPES GREATER THAN 3:1 AND ADJACENT TO STREAM CHANNELS.
09. EROSION CONTROL MEASURES ARE ESTIMATED. THE LOCATION AND QUANTITY MUST BE FIELD VERIFIED BY QUALIFIED INDIVIDUAL.
10. TEMPORARY MATTING SHALL BE UTILIZED AS NEEDED FOR ACCESS AND CONSTRUCTION IN WETLAND AREAS.
11. VEGETATIVE MAINTENANCE MAY PRECEDE CONSTRUCTION ACTIVITY BUT EROSION AND SEDIMENT CONTROL PLACEMENT SHALL BE REQUIRED PRIOR TO CONSTRUCTION ACTIVITIES.
12. DISTURBANCE FROM MECHANIZED EQUIPMENT IS NOT PERMITTED IN REGULATED WETLANDS AND STREAMS. HAND CUTTING OR WORK OFF OF CONSTRUCTION MATTING REQUIRED IN THESE AREAS.
13. ALL FORESTRY CLEARING DEBRIS MUST BE REMOVED FROM REGULATED WETLANDS AND STREAMS. CHIPPING OR STOCKPILING PERMISSIBLE IN UPLAND AREAS ONLY.
14. NHD FLOWLINES ARE SHOWN FOR REFERENCE ONLY AND DO NOT NECESSARILY DEFINE THE PRESENCE OF A STREAM. INCREASED WATER FLOW AND/OR EROSION MAY OCCUR IN THESE AREAS. ESPECIALLY WHEN VEGETATION IS REMOVED.

SHEET INDEX



REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017.

N

0 165 330 660 Feet

Sheet Index
Existing Facility
Study Area
Potential Access
Interstate
State Highway
US Highway
Railroad
Project Centerline
Parcels
NWI Wetlands
NHD Flowline
Floodway
100-Year Floodplain
Municipal Boundary

DUKE ENERGY.

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FIGURE 4.0
STORMWATER POLLUTION PREVENTION PLAN
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS PLAN KEY MAP

DRAWN BY: COD DATE: 4/18/2021
CHECKED: CAJ APPROVED: CAJ

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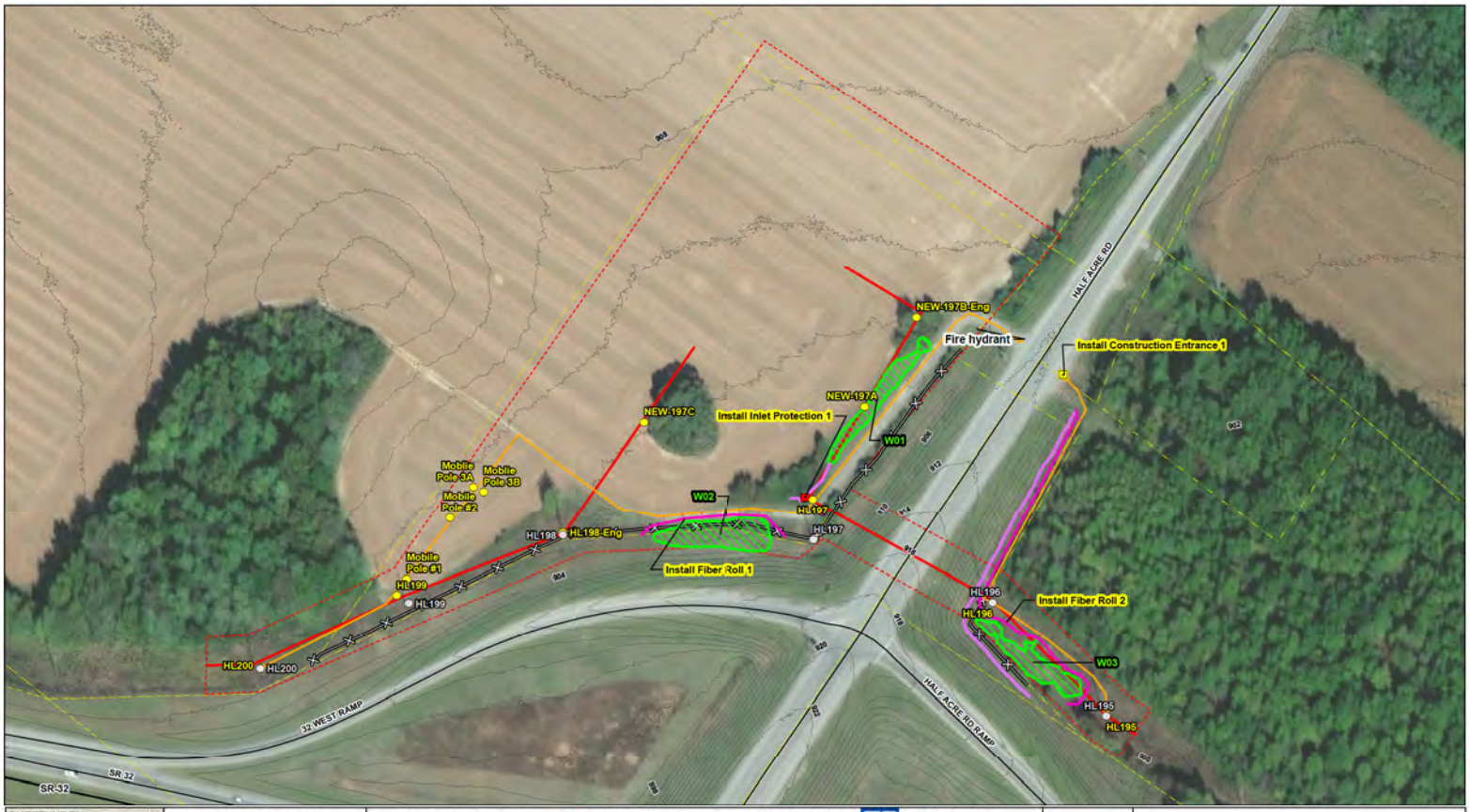

SHEET INDEX

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLE: WILLIAMSBURG, OHIO. OBTAINED VIA ESRI USA TOPO, NATIONAL GEOGRAPHIC TOPO, AND USGS, ACCESSED 01/2017.

N

0 50 100 200 Feet

- Existing Structure
- Proposed Structure
- Existing Facility
- Stormwater Inlet
- Culvert
- Construction Entrance
- Fiber Roll
- Potential Access
- Ditch
- Delineated Wetland
- Fence
- Interstate
- State Highway
- US Highway
- Railroad
- Study Area
- Project Centerline
- Parcels
- NWI Wetlands
- NHD Flowline
- Floodway
- 100-Year Floodplain
- Municipal Boundary

DUKE ENERGY.

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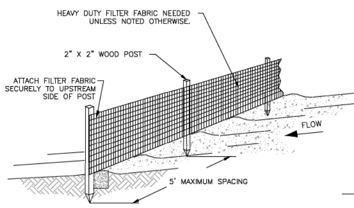
FIGURE 4.01
STORMWATER POLLUTION PREVENTION PLAN
HALF ACRE SUBSTATION & TRANSMISSION LINE RELOCATION (M190064) PROJECT
DUKE ENERGY OHIO
ENVIRONMENTAL ACCESS/ EROSION CONTROL PLAN

DRAWN BY: COD DATE: 4/18/2021
CHECKED: CAJ APPROVED: CAJ

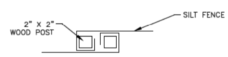
R:\Projects\19\19Y\19Y465\MC_DukeEnergy_Contract25320_SitingPermitting&Engagement\19Y4650MC_PC25361_Transmission\12_HalfAcreSubstation_ClermontCounty\GIS\MXD\SWPPP_MC12 Half Acre Substation\SWPPP4plus_HalfAcreSubProject_SWPPP_set_.mxd

Appendix B

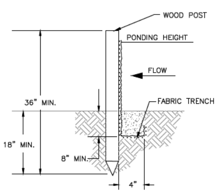
Storm Water Pollution Prevention Plan Typical Details



ISOMETRIC VIEW



JOINT WRAP



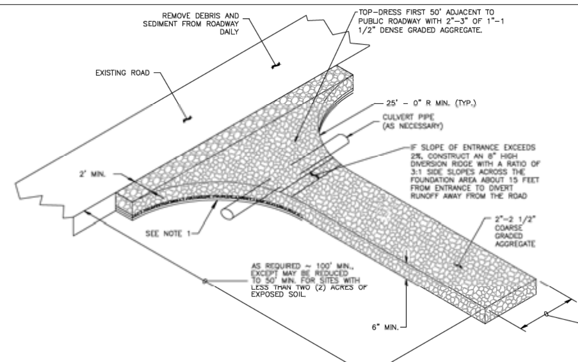
TYPICAL SECTION

NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN IT REACHES ONE-HALF HEIGHT OF FENCE OR FABRIC STARTS TO BULGE.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
4. TURN END OF SILT FENCE UP SLOPE TO PREVENT BYPASS FLOW AND ALLOW FOR PONDING.

SILT FENCE

001

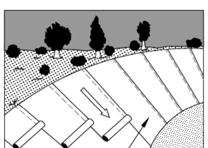


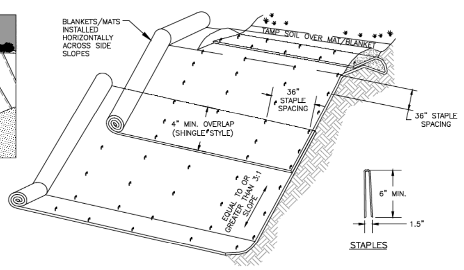
NOTES:

1. PLACE 8 OZ/SY NON-WOVEN GEOTEXTILE FABRIC UNDERLINER TO STABILIZE FOUNDATION (ESPECIALLY WHEN WET CONDITIONS ARE EXPECTED) TO EXTEND 2' FROM OUTSIDE EDGE. GEOGRID CAN ALSO BE ADDED FOR INCREASED STABILITY.
2. COUNTY OR STATE HIGHWAY ACCESS PERMITTING MAY BE REQUIRED FOR PLACEMENT OF ENTRANCE.
3. CULVERT PLACEMENT MAY BE REQUIRED TO MAINTAIN FLOW.
4. TEMPORARY CONSTRUCTION MATTING MAY BE SUBSTITUTED WITH FIELD VERIFICATION AND APPROVAL (SEE DETAIL 016).

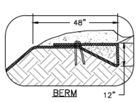
TEMPORARY CONSTRUCTION ENTRANCE

002





STAPLES



BERM

NOTES:

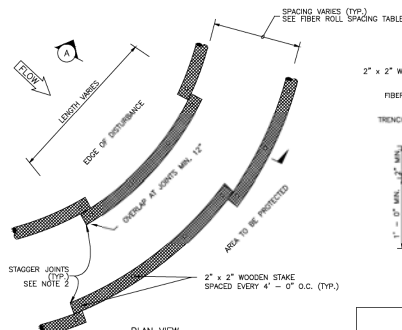
1. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS AND GRASS. MATS/BLANKETS SHALL HAVE GOOD SOIL CONTACT.
2. APPLY PERMANENT SEEDING BEFORE PLACING BLANKETS.
3. LAY BLANKETS LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH THE SOIL. DO NOT STRETCH.
4. USE ON SIDE SLOPES EXCEEDING A 3:1 SLOPE AND DISTURBED STREAMBANKS.
5. THE FOLLOWING BLANKET TYPES SHALL BE UTILIZED:
   A. LONG-TERM BIODEGRADABLE DOUBLE-NET COCONUT BLANKET ON STREAMBANKS.
   B. SHORT-TERM BIODEGRADABLE DOUBLE-NET STRAW BLANKET ON 3:1 SLOPES OR GREATER.
   C. SHORT-TERM BIODEGRADABLE SINGLE-NET STRAW ON LESSER SLOPES, FLAT FLOODPLAIN, AND WORKSPACE AREAS.
6. FOR STREAMBANK STABILIZATION;
   A. TUCK/UNDERLAP BASE OF BLANKET TO PREVENT HIGH WATER FROM REMOVING BLANKET AND SEED.
   B. STAPLE SPACING MAY NEED TO BE DECREASED.
   C. PREPARE SUBGRADE PRIOR TO INSTALLING BLANKET BY REMOVING DISPLACED ROCKS AND WOODY DEBRIS.

EROSION CONTROL BLANKET

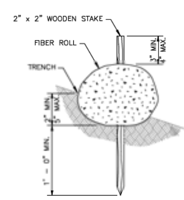
003

INTENTIONALLY LEFT BLANK

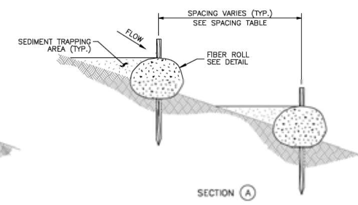
004



PLAN VIEW



TYPICAL SECTION



SECTION (A)

SPACING TABLE

SLOPE	MAXIMUM SPACING
1:1	10' - 0"
2:1	20' - 0"
3:1	30' - 0"
4:1	40' - 0"

* INSTALL FIRST ROW AT TOP OF BANK. INSTALL LAST ROW 10' FROM TOE OF SLOPE.

NOTES:

1. INSTALL FIBER ROLLS ALONG CONTOURS DURING FINAL RESTORATION TO CHECK FLOW TO ALLOW ADEQUATE REVEGETATION.
2. ABUT ADJACENT FIBER ROLLS TIGHTLY WHILE OVERLAPPING THE ENDS. STAGGER JOINTS WITH THE NEXT PARALLEL ROW.
3. PILOT HOLES MAY BE DRIVEN THROUGH THE FIBER ROLLS AND INTO THE SOIL WHEN SOIL CONDITIONS REQUIRE.
4. FIBER ROLLS SHALL BE INSPECTED REGULARLY, AND IMMEDIATELY AFTER A RAINFALL PRODUCES RUNOFF, TO ENSURE THEY REMAIN THOROUGHLY ENTRENCHED AND IN CONTACT WITH THE SOIL.
5. A SINGLE ROW MAY BE INSTALLED ON FLAT SLOPES.

FIBER ROLL

005

REVISIONS

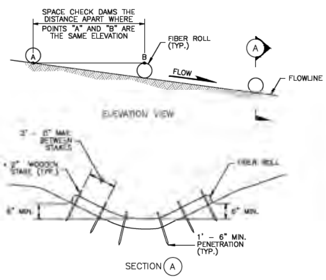
NO.	DATE	DESCRIPTION	APPROVED BY

DESIGN BY	DATE
CAM/MRW	2/18/2015
DRAWN BY	JOB NO.
KTH	--
CHECKED BY	APPROVED
MRW	CAM

DUKE ENERGY

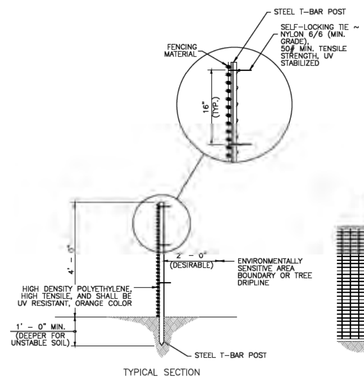
STORM WATER POLLUTION PREVENTION PLAN
TYPICAL DETAILS

SCALE: N.T.S.
DRAWING NO.
SHEET 1 OF 5

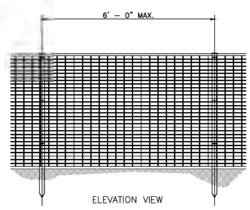


NOTE:
1. STRAW WATTLE SHALL NOT BE USED IN A CHECK DAM APPLICATION.

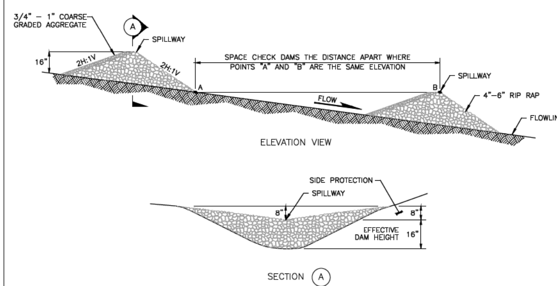
FIBER ROLL CHECK DAM 006



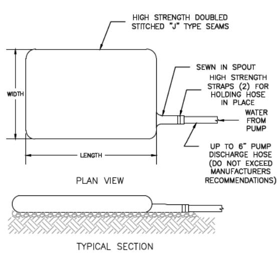
NOTE:
1. POST SHALL HAVE SUFFICIENT STRENGTH AND DURABILITY TO SUPPORT THE FENCE THROUGH THE LIFE OF THE PROJECT.



CONSTRUCTION BARRIER FENCING 007



ROCK CHECK DAM 008



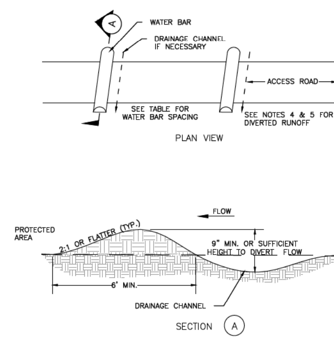
NOTES:

1. THE NECK OF THE FILTER BAG SHALL BE TIGHTLY STRAPPED (MINIMUM TWO STRAPS) TO THE DISCHARGE HOSE.
2. THE FILTER BAG IS FULL WHEN IT NO LONGER CAN EFFICIENTLY FILTER SEDIMENT OR PASS WATER AT A REASONABLE RATE.
3. FLOW RATES VARY DEPENDING ON THE SIZE OF THE DEWATERING DEVICE, AMOUNT OF SEDIMENT DISCHARGED INTO THE DEWATERING DEVICE, THE TYPE OF GROUND, ROCK, OR OTHER SUBSTANCE UNDER THE BAG AND THE DEGREE OF THE SLOPE ON WHICH THE BAG LIES. THE FILTER BAG SHOULD BE SIZED TO ACCOMMODATE THE ANTICIPATED FLOW RATES FROM THE TYPE OF PUMP USED. TYPICALLY FILTER BAGS CAN HANDLE FLOW RATES OF UP TO 1000 GALLONS PER MINUTE, BUT IN ALL CASES FOLLOW THE MANUFACTURERS RECOMMENDATIONS FOR FLOW RATES.
4. USE OF EXCESSIVE FLOW RATES OR OVERFILLING THE DEWATERING DEVICE WITH SEDIMENT WILL CAUSE RUPTURES OF THE BAG OR FAILURE OF THE HOSE ATTACHMENT STRAPS.
5. THE FILTER BAG SHALL BE REMOVED AND DISPOSED OF OFFSITE..
6. EACH STANDARD DEWATERING DEVICE SHALL HAVE A FILL SPOUT LARGE ENOUGH TO ACCOMMODATE THE DISCHARGE HOSE. USE TWO STAINLESS STEEL STRAPS TO SECURE THE HOSE AND PREVENT PUMPED WATER FROM ESCAPING WITHOUT BEING FILTERED.
7. THE DEWATERING DEVICE SHALL BE A NONWOVEN BAG, WHICH IS SEWN WITH A DOUBLE NEEDLE STITCHING USING A HIGH STRENGTH THREAD.
8. THE DEWATERING DEVICE SEAMS SHALL HAVE AN AVERAGE WIDE WITH STRENGTH PER ASTM D 4884 OF 100 LB/IN.
9. THE GEOTEXTILE FABRIC SHALL BE A NONWOVEN FABRIC WITH THE FOLLOWING PROPERTIES:

PROPERTIES	TEST METHOD	ENGLISH	METRIC
GRAB TENSILE	ASTM D - 4632	250 LBS.	113 KG
PUNCTURE	ASTM D - 4833	165 LBS.	75 KG
FLOW RATE	ASTM D - 4491	70 GAL/MIN/SQ FT	25 LITERS/MIN/SQ METER
PERMITIVITY	ASTM D - 4491	1.3 SEC. - 1	1.3 SEC. - 1
MULLEN BURST	ASTM D - 3786	550 LBS./SQ INCH	3.79 Mpa
UV RESISTANT	ASTM D - 4355	70%	70%
AOS % RETAINED	ASTM D - 4751	100%	100%

*ALL PROPERTIES ARE MINIMUM AVERAGE ROLL VALUE

DEWATERING BAG 009



NOTES:

1. SIDE SLOPES OF WATER BAR SHALL BE CONSTRUCTED SUFFICIENTLY FLAT TO ACCOMMODATE THE EXPECTED TRAFFIC.
2. THE SPACING BETWEEN WATER BARS SHALL BE AS NOTED (SEE SPACING TABLE):

WATER BAR SPACING TABLE

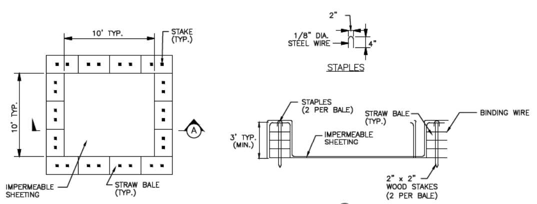
ROAD GRADE (%)	DISTANCE (FT.)
1	400
2	250
5	135
10	80
15	60
20	45

3. THE FIELD LOCATION SHALL BE ADJUSTED AS NEEDED TO PROVIDE A STABILIZED SAFE OUTLET.
4. DRAINAGE CHANNELS SHALL BE DIRECTED ONTO STABLE VEGETATIVE AREA OR A SEDIMENT TRAP OR A BASIN IF CONTRIBUTING AREA IS NOT STABLE.
5. DRAINAGE CHANNELS SHALL BE CONSTRUCTED WITH ≤ 2% WITH POSITIVE OUTLET TO STABLE AREA.
6. DIVERSIONS/WATER BARS SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT DURING CONSTRUCTION.
7. THE WATER BARS SHALL BE ANGLED SLIGHTLY DOWNSLOPE ACROSS THE CENTERLINE OF THE TRAVEL LANE.

WATER BAR 010

REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED BY

DESIGN BY	DATE	DUKE ENERGY	STORM WATER POLLUTION PREVENTION PLAN TYPICAL DETAILS	SCALE N.T.S.
CAM/MRW	12/18/2015			
DRAWN BY KTH	JOB NO. —			DRAWING NO.
CHECKED BY MRW	APPROVED CAM			SHEET 2 OF 5



PLAN VIEW

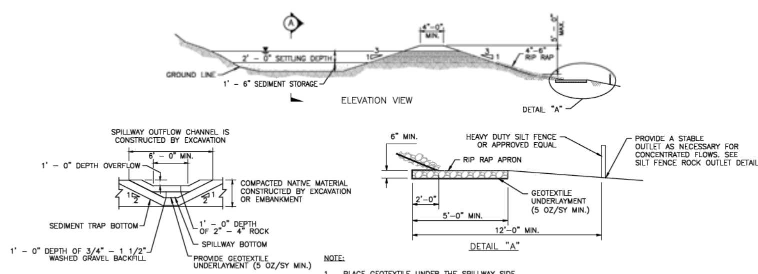
SECTION (A)

NOTES:

1. LOCATE WASHOUT STRUCTURE A MINIMUM OF 50 FEET AWAY FROM OPEN CHANNELS, STORM DRAIN INLETS, SENSITIVE AREAS, WETLANDS, BUFFERS AND WATER COURSES AND AWAY FROM CONSTRUCTION TRAFFIC.
2. SIZE WASHOUT STRUCTURE FOR VOLUME NECESSARY TO CONTAIN WASH WATER AND SOLIDS AND MAINTAIN AT LEAST 4 INCHES OF FREEBOARD. TYPICAL DIMENSIONS ARE 10 FEET X 10 FEET X 3 FEET DEEP.
3. PREPARE SOIL BASE FREE OF ROCKS OR OTHER DEBRIS THAT MAY CAUSE TEARS OR HOLES IN THE LINER. FOR LINER, USE 10 MIL OR THICKER UV RESISTANT, IMPERMEABLE SHEETING, FREE OF HOLES AND TEARS OR OTHER DEFECTS THAT COMPROMISE IMPERMEABILITY OF THE MATERIAL.
4. PROVIDE A SIGN FOR THE WASHOUT IN CLOSE PROXIMITY TO THE FACILITY.
5. KEEP CONCRETE WASHOUT STRUCTURE WATER TIGHT. REPLACE IMPERMEABLE LINER IF DAMAGED (E.G., RIPPED OR PUNCTURED). EMPTY OR REPLACE WASHOUT STRUCTURE THAT IS 75 PERCENT FULL, AND DISPOSE OF ACCUMULATED MATERIAL PROPERLY. DO NOT REUSE PLASTIC LINER. WET-VACUUM STORED LIQUIDS THAT HAVE NOT EVAPORATED AND DISPOSE OF IN AN APPROVED MANNER. PRIOR TO FORECASTED RAINSTORMS, REMOVE LIQUIDS OR COVER STRUCTURE TO PREVENT OVERFLOWS. REMOVE HARDENED SOLIDS, WHOLE OR BROKEN UP, FOR DISPOSAL OR RECYCLING. MAINTAIN RUNOFF DIVERSION AROUND EXCAVATED WASHOUT STRUCTURE UNTIL STRUCTURE IS REMOVED.
6. BALES CAN BE TWO STACKED OR PARTIALLY EXCAVATED TO REACH 3FT DEPTH (MIN.).
7. PREFABRICATED UNITS MAY BE USED WITH APPROVAL.

CONCRETE WASHOUT

011



ELEVATION VIEW

SECTION (A)

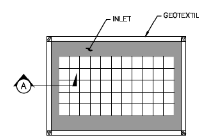
DETAIL "A"

NOTE:

1. PLACE GEOTEXTILE UNDER THE SPILLWAY SIDE SLOPES, SPILLWAY BOTTOM, AND RIP RAP APRON. PROVIDE A CONTINUOUS LAYER BETWEEN THE GRAVEL/ROCK AND THE NATIVE EARTHEN MATERIAL.

TEMPORARY SEDIMENT TRAP

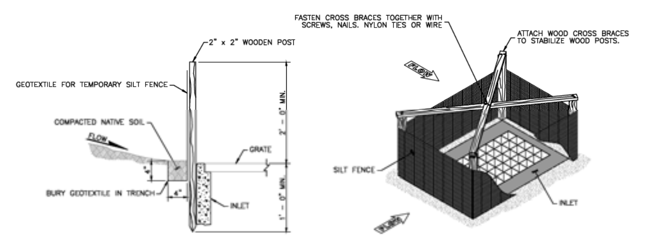
012



PLAN VIEW
(CROSS BRACES NOT SHOWN)

NOTES:

1. PREFABRICATED UNITS MAY BE USED WITH APPROVAL.
2. STRUCTURE SHALL BE CONSTRUCTED SUCH THAT GEOTEXTILE MATERIAL SHALL BE FASTENED TO POSTS CREATING A SEAM-LESS JOINT.
3. ENSURE THAT PONDING HEIGHT OF WATER DOES NOT CAUSE FLOODING ON ADJACENT ROADWAYS OR PRIVATE PROPERTY.

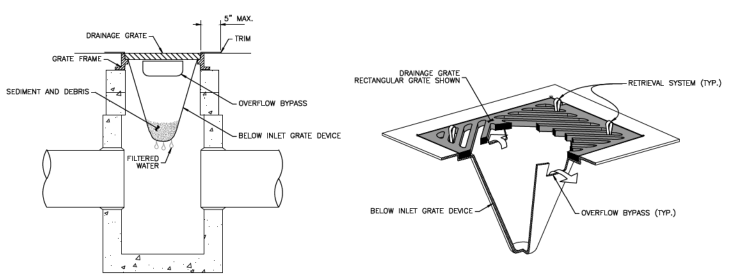


SECTION (A)

ISOMETRIC VIEW
(ENTIRE FENCE NOT SHOWN FOR ILLUSTRATIVE PURPOSES)

NON-PAVED AREA INLET PROTECTION

014



TYPICAL SECTION

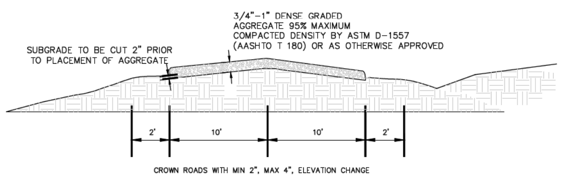
ISOMETRIC VIEW

PAVED AREA INLET PROTECTION

013

REVISIONS			
NO.	DATE	DESCRIPTION	APPROVED BY

DESIGN BY	DATE			SCALE
CAM/MRW	12/16/2015	DUKE ENERGY	STORM WATER POLLUTION PREVENTION PLAN TYPICAL DETAILS	N.T.S.
DRAWN BY	JOB NO.			DRAWING NO.
KTH	— —			
CHECKED BY	APPROVED			SHEET 3 OF 5
MRW	CAM			

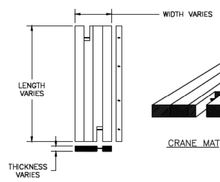


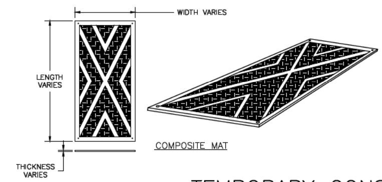
NOTE:

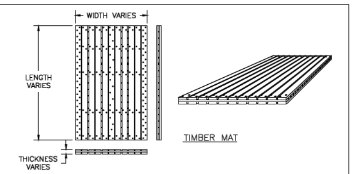
1. VARYING FIELD CONDITIONS MAY WARRANT ALTERNATE AGGREGATE GRADATIONS.

TEMPORARY ACCESS DRIVE

015





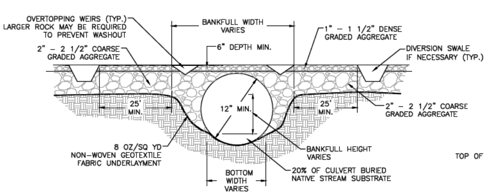


NOTES:

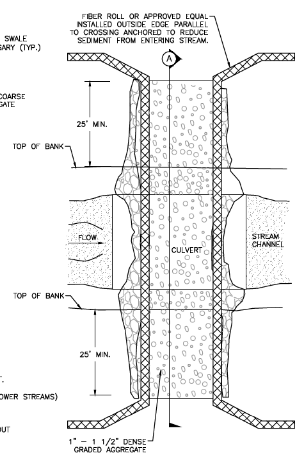
1. TEMPORARY CONSTRUCTION MATTING SHALL BE USED IN ALL SATURATED OR UNSTABLE WETLAND AREAS IF CROSSING IS NECESSARY.
2. FILL SHALL NOT BE PLACED OFF OF MATTING WHEN WORKING IN WETLAND AND STREAM AREAS.
3. SECTIONS TO BE ASSEMBLED TO REQUIRED SIZE SPECIFIC TO EQUIPMENT NEEDS.
4. NO GAPS SHALL BE PRESENT IN THE MATTING TO REDUCE "PUMPING" AND SEDIMENT FROM ENTERING STREAMS AND WETLANDS.
5. MATTING SHALL BE ANCHORED IN ALL NOTED FLOODWAYS AND ADJACENT TO OTHER STREAMS DETERMINED TO BE PRONE TO FLOODING.
6. MAINTAIN STREAM FLOWS AND UTILIZE EROSION CONTROLS IF MATTING IS TO BE USED FOR A STREAM CROSSING APPLICATION.
7. PLACE NON-WOVEN GEOTEXTILE UNDERLAYMENT (7 OZ/SY) BENEATH MATTING IN SATURATED OR DELINEATED WETLAND AREAS TO PREVENT PUMPING OF SATURATED SOILS.
8. INSTALL FIBER ROLL ALONG ENTIRE PERIMETER OF MATTING WITHIN DELINEATED WETLAND AREAS EXCEPT FOR THE INGRESS AND EGRESS LOCATIONS.

TEMPORARY CONSTRUCTION MATTING

016



SECTION (A)



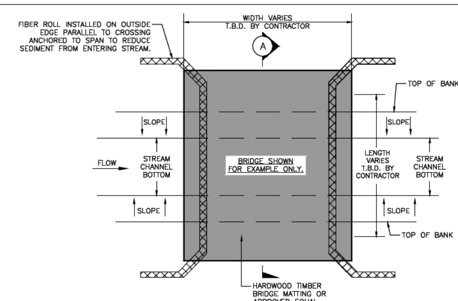
PLAN VIEW

NOTES:

1. THE SLOPE OF THE BED WITHIN THE ENCAPSULATION MATCHES THE SLOPE OF THE BED BOTH IMMEDIATELY UPSTREAM AND DOWNSTREAM.
2. NO SOIL SHALL BE USED FOR CONSTRUCTION OF TEMPORARY CROSSING OR PLACED WITHIN STREAM CHANNEL
3. CULVERTED CROSSINGS MAY REQUIRE ADDITIONAL STATE AND/OR FEDERAL PERMITTING. NOTIFY ENVIRONMENTAL COORDINATOR PRIOR TO IMPLEMENTATION OR CONSIDERATION TO MAKING PERMANENT.
4. CULVERT DIAMETER SHALL BE AT LEAST 3X DEPTH OF NORMAL FLOW. (2X DEPTH IS ALLOWED IN DEEP, SLOWER STREAMS)
5. IF MULTIPLE CULVERTS ARE NEEDED TO CROSS STREAM LEAVE 12" SPACE BETWEEN CULVERTS.
6. FOR FINAL RESTORATION, REMOVE CULVERT AND ALL STONE FROM STREAM AS PRACTICALLY POSSIBLE WITHOUT ADDITIONAL DAMAGE.

TEMPORARY CULVERT STREAM CROSSING

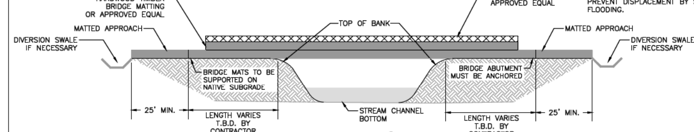
017



PLAN VIEW

NOTES:

1. DETAIL SHOWS BRIDGE EXAMPLE ONLY. CONTRACTOR TO PROVIDE SIMILAR OR APPROVED EQUAL.
2. BRIDGE MATERIAL, DIMENSIONS, AND LOAD DESIGN TO BE DETERMINED BY CONTRACTOR SPECIFIC TO PROJECT AND EQUIPMENT NEEDS.
3. BRIDGE SHALL CLEAR SPAN STREAM PERPENDICULARLY FROM TOP OF BANK TO TOP OF BANK WITHOUT DISTURBING STREAM BANKS.
4. NO OBSTRUCTIONS OR EQUIPMENT SHALL BE PLACED IN CHANNEL AND FLOW MUST BE MAINTAINED.
5. ANY BEARING STRUCTURES SHALL BE SECURED FOR STABILITY AND SUPPORTED ON NATIVE SUBGRADE WITHOUT POURED FOUNDATIONS.
6. ADDITIONAL CONSTRUCTION TIMBER MATTING MAY BE REQUIRED FOR GRADE COMPENSATION AT APPROACHES.
7. BRIDGE SHALL BE PROPERLY ANCHORED TO PREVENT DISPLACEMENT BY STREAM FLOODING.

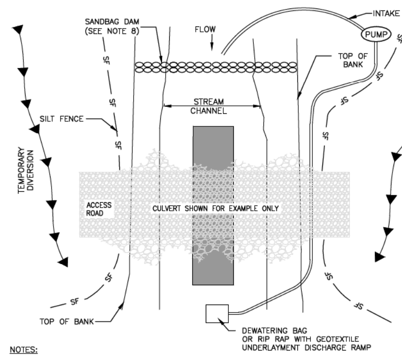


SECTION (A)

TEMPORARY CLEAR SPAN BRIDGE CROSSING

018

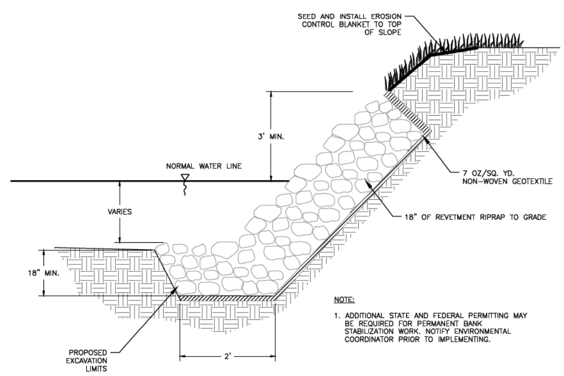
REVISIONS				DESIGN BY	DATE			SCALE	
NO.	DATE	DESCRIPTION	APPROVED BY	CAM/MRW	12/16/2015	DUKE ENERGY	STORM WATER POLLUTION PREVENTION PLAN TYPICAL DETAILS	N.T.S.	
				DRAWN BY	JOB NO.			DRAWING NO.	
				KTH					
				CHECKED BY	APPROVED			SHEET	OF
				MRW	CAM			4	5



NOTES:

1. INSTALL SILT FENCE, PUMP, DEWATERING BAG, AND SANDBAG DAM BEFORE TRENCHING STREAM.
2. PUMP MUST BE OF SUFFICIENT CAPACITY TO CONVEY NORMAL AND/OR EXISTING STREAM FLOW OVER SANDBAG DAM. A BACK-UP PUMP OF EQUAL CAPACITY MUST BE AVAILABLE ON-SITE DURING CONSTRUCTION OF THE CROSSING.
3. ANY SOIL PILES TO BE PLACED A MINIMUM OF 10 FEET FROM TOP OF BANK.
4. INSTALL DIVERSIONS AT APPROACHES TO STREAM CROSSING AND SILT FENCE (AS INDICATED ON PLAN SHEETS).
5. MAINTAIN SURFACE OF TEMPORARY EQUIPMENT CROSSING TO PREVENT SOIL DISCHARGES TO STREAM.
6. APPROACHES TO CROSSINGS ARE NOT TO EXCEED A DEPTH OF 6 INCHES ABOVE ORIGINAL GRADE.
7. RESTORE AREA TO APPROXIMATE ORIGINAL CONTOURS.
8. ADJUST HEIGHT AS NEEDED BASED ON FLOW CONDITIONS AND PUMP INTAKE.

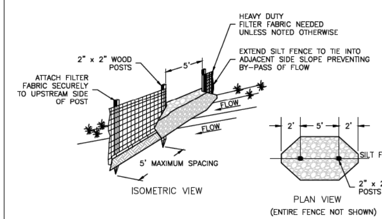
TEMPORARY STREAM CROSSING PUMP DIVERSION 019



NOTE:

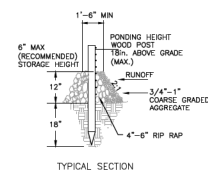
1. ADDITIONAL STATE AND FEDERAL PERMITTING MAY BE REQUIRED FOR PERMANENT BANK STABILIZATION WORK. NOTIFY ENVIRONMENTAL COORDINATOR PRIOR TO IMPLEMENTING.

HARD ARMAMENT BANK STABILIZATION 020

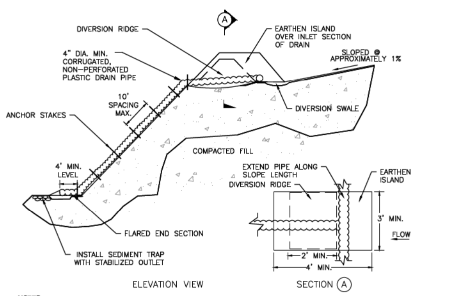


NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN IT REACHES ONE-HALF HEIGHT OF FENCE OR FABRIC STARTS TO BULGE.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
4. TURN END OF SILT FENCE UP SLOPE TO PREVENT BYPASS FLOW AND ALLOW FOR PONDING.
5. SEE TYPICAL SILT FENCE DETAIL FOR ADDITIONAL INFORMATION.



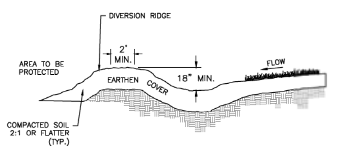
SILT FENCE ROCK OUTLET 021



NOTES:

1. THE SLOPE DRAIN SHALL BE CONSTRUCTED/LENGTHENED WITH THE CONSTRUCTION OF THE FILL SLOPE. AS A RESULT, INLET ELEVATIONS WILL VARY ACCORDING TO GRADE ELEVATIONS AT THE TIME OF CONSTRUCTION.
2. INSPECT SLOPE DRAIN AND SUPPORTING DIVERSIONS AFTER EVERY RAINFALL EVENT AND MAKE NECESSARY REPAIRS FOR PROPER OPERATION OF THE SYSTEM.
3. UPON PROJECT COMPLETION, REMOVE THE SLOPE DRAIN AND PROPERLY STABILIZE ALL DISTURBED AREAS.

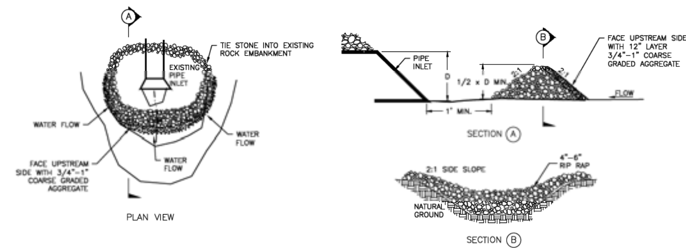
TEMPORARY SLOPE DRAIN 022



NOTE:

1. SWALE SHALL BE CONSTRUCTED WITH POSITIVE SLOPE ≤ 1% AND OUTLET TO A STABLE VEGETATED AREA OR SEDIMENT TRAP OR BASIN.

DIVERSION SWALE 023



ROCK PIPE INLET PROTECTION 024

REVISIONS				DESIGN BY	DATE			SCALE
NO.	DATE	DESCRIPTION	APPROVED BY	CAM/MRW	12/18/2015	DUKE ENERGY	STORM WATER POLLUTION PREVENTION PLAN TYPICAL DETAILS	N.T.S.
				DRAWN BY	JOB NO.			DRAWING NO.
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				CHECKED BY	APPROVED			SHEET 5 OF 5
				MRW	CAM			

Storm Water Pollution Prevention Plan
Half Acre Substation & Transmission Line
Relocation (M190064) Project
Clermont County, Ohio

Appendix C

Storm Water Evaluation Form for Construction

Storm Water Evaluation Form for Construction

(Complete at least once per week and after each storm event of 0.5 inches or more.)

Project Name: Half Acre Substation & Transmission Line Relocation (M190064) Project	**Evaluation Date:**
Construction Supervisor:	**Evaluated By:**
Reason for Evaluation: ☐ **Routine** ☐	**Post Rain Event** ☐ **Non-Routine**
Location and Phase of Construction:	**Conditions at time of evaluation?** ☐ Dry ☐ Wet ☐ Frozen

OBSERVATIONS	INSTALLED	CORRECTIVE ACTION NEEDED
Inlet Protection	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Fiber Rolls/Filter Socks	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Construction Entrances	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
Seeding/Mulching	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		
	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No
Comment/Action:		

Is sediment or other pollutants leaving the site?	☐ Yes ☐ No	If yes, corrective action is needed.
Is sediment being tracked onto public roadways?	☐ Yes ☐ No	If yes, corrective action is needed.
Have any areas been left disturbed for 21 days or more?	☐ Yes ☐ No	If yes, corrective action is needed.

See Reverse Side for More Information and Additional Space for Comments

Storm Water Evaluation Form for Construction

(Complete at least once per week and after each storm event of 0.5 inches or more.)

General Information:

- This storm water evaluation program is intended to comply with self-monitoring requirements and the project specific Storm Water Pollution Prevention Plan (SWPPP).
- A Storm Water Evaluation is required by a trained individual at a minimum of one (1) time per week and by the end of the next business day following each measurable storm event (total rainfall accumulation equal to one-half (0.5) inches or greater.
- Observed erosion and sediment control deficiencies shall be corrected within 7 days. Modifications to erosion and sediment control structures and/or locations shall be recorded in the SWPPP Amendment Log within 10 days.
- Areas that are scheduled to be inactive for 21 days or more must be temporarily or permanently stabilized with appropriate measures within 7 days of last disturbance.
- Erosion and sediment control structures shall be maintained until a vegetative cover of 70% or greater density in all disturbed, non-agricultural areas is achieved. At which time, all temporary erosion and sediment control structures shall be removed and Notice of Termination (NOT) will be filed with Ohio Environmental Protection Agency (OEPA).
- Completed Evaluation Forms to be submitted to Amanda Sheehe at 1000 East Main Street, Plainfield, IN 46168, (513) 417-9100, Jessica.Callaway@Duke-Energy.com
- Upon request, Evaluation Forms must be provided to inspecting authorities within 48 hours and must be retained for 3 years after project completion.

Additional Comments/Actions (attach photographs and additional pages as necessary):

Appendix D

SWPPP Amendment Log

SWPPP Amendment Log

Project: Half Acre Substation & Transmission Line Relocation (M190064) Project

Date	Description/Location	Initials