

CONSTRUCTION NOTICE FOR THE
F1783 – 138kV EBENEZER SUBSTATION EXPANSION

PUCO Case No. 18-1572-EL-BNR

Submitted to:
The Ohio Power Siting Board
Pursuant to OAC 4906-06

Submitted by:
Duke Energy Ohio, Inc.

10/29/2018



Construction Notification

This Construction Notice has been prepared by Duke Energy Ohio, Inc. (hereafter "Duke Energy") in accordance with Ohio Administrative Code (OAC) Section **4906-6-05** for the review of Accelerated Certificate Applications. The following section corresponds to the administrative code sections for the requirements of a Construction Notice Application.

4906-06-05 ACCELERATED APPLICATION REQUIREMENTS

4906-6-05 (B): General Information

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

Name of Project: Duke Energy F1783 – 138kV Ebenezer Substation Expansion

Brief Description of the Project:

Duke Energy proposes to re-conductor along approximately 0.07 mile (394 feet) of existing 138 kV transmission line from Structure HL-404 to Structure HL-402A and from Structure 401-A to the existing Ebenezer Substation Bay. Additionally, Duke Energy proposes to relocate approximately 0.10 mile (513 feet) of existing 138 kV transmission line from Structure HL-402A to Structure HL-401A. Re-conductor as well as relocation activities will occur within 100-foot wide Duke Energy transmission line corridor right-of-way (ROW). The construction will include removing two wood poles and installing three steel transmission poles at the rear of the substation. The poles range in height from 77.5 to 95 feet above ground.

The F1783 Ebenezer Substation Expansion Project initiates at Duke Energy Structure HL-404 located west of Ebenezer Road, east of Wexford Lane, north of Cleves Warsaw Pike and south of Devils Backbone Road (39.122276, -84.652194) and terminates at Duke Energy Ebenezer Substation located west of Ebenezer Road, east of Wexford Lane, north of Cleves Warsaw Pike and south of Devils Backbone Road (39.122232, -84.655009).

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, items (1)(a). Item (1)(a) allows the filing of a Construction Notice for *"New construction, extension, or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distribution line(s) for operation at a higher transmission voltage, as follows: (a) Line(s) not greater than 0.2 miles in length."*

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

The purpose of the F1783 Ebenezer Substation Expansion Project is to re-conductor the existing transmission line to accommodate future expansion of the Ebenezer substation. This relocation and future expansion of the substation is required to maintain and improve the quality of the electric service and reliability to the service area. This area includes, but is not limited to Hamilton County, Ohio. The existing F1783 – 138kV Ebenezer Substation provides 138 kV electric transmission service to residential and commercial/industrial facilities and serves as a pathway in the transmission grid between Cleves, North Bend, Addyston, Cheviot, Cincinnati, Green Township, and surrounding areas. Due to the increased customer load growth in Hamilton County, circuits will not be able to reliably operate at the base case contingency condition, which may result in customer load disruption. Moreover, to ensure the integrity of the transmission line, the existing wooden structures will be upgraded to galvanized steel structures.

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

The location of the project in relation to existing or proposed lines and substations is depicted in Attachment B.

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

The proposed Project will occur entirely within existing Duke Energy property and within a newly acquired 0.104 acre easement located directly adjacent to Duke Energy property. No additional long-term impacts to adjacent properties are anticipated as a result of the Project due to limited changes in land use / land cover. Therefore, the current alignment is the only reasonable alternative available and no alternatives were considered.

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

The construction will include removing two wood poles and installing three steel transmission poles at the rear of the substation. The poles range in height from 77.5 to 95 feet above ground.

Due to the proposed Project being located entirely within existing and newly acquired easement primarily on Duke Energy Property, a public information program for this Project has not been developed. However, Duke Energy has worked closely with property owners during the development of the Project. Duke Energy has mailed letters, via first class mail, to affected landowners, tenants, contiguous owners, and anyone else Duke Energy determined may be affected by the Project. See Attachment C for a copy of the letter and list of landowners in receipt of the letter.

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

Construction is planned to begin November 19, 2018, upon approval of this Construction Notice. The Project is anticipated to be completed and in-service by December 14, 2018.

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

Attachment A, Figures 1 and 2 depict the general location of the Project. Attachment A, Figure 1 shows the general project vicinity depicted on a USGS quadrangle topographic map. Attachment A, Figure 2 depicts the planned transmission line location, ecological resources in the project vicinity, and additional details on an aerial imagery map.

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

The proposed F1783 – 138kV Ebenezer Substation Expansion project is located primarily on Duke Energy property and within new and existing ROW easements that were obtained by Duke Energy Ohio. Property owners have been notified as outlined in this response [Part 4906-6-05 (B)(5)]. A new easement has been obtained with regard to the following parcel number and records of this new easement can be found in Attachment C :

550-0260-0064-90

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

The Project involves the re-conductor of approximately 0.07 mile (394 feet) of existing 138 kV transmission line from Structure HL-404 to Structure HL-402A and from Structure 401-A to the existing Ebenezer Substation Bay. Additionally, the Project involves the relocation of approximately 0.10 mile (513 feet) of existing 138 kV transmission line from Structure HL-402A to Structure HL-401A. Re-conductor and relocation activities will occur within 100-foot wide Duke Energy transmission line corridor right-of-way (ROW). Existing structures will remain as part of re-conductor activities but two (2) existing structures will be removed and relocated and two (2) new structures will be installed as part of the substation expansion. Structure diagrams are provided in Attachment B.

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

Voltage:	138kV
Structure Type:	Four (4) Galvanized Steel Single Pole Structures
Conductors:	Structures 406-401B: 795 kcmil 37 Strand AAC
	Structures 401B-401A: 954 ACSR 45/7 "Rail"
	Structure 401A – Sub: 795 kcmil 37 Strand AAC

Static Wire: Structures 406-401B: 1/0 AAAC
Structures 401B-401A: 7#8 Alumoweld
Structure 401A – Sub: 1/0 AAAC

Insulators: 138kV Polymer post insulators and Porcelain suspension insulators

Right-of-Way/Land Requirements: Duke Energy owns the easements on which the transmission lines will be constructed.

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

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

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

The estimated cost for the proposed F1783 – 138kV Ebenezer Substation Expansion project is approximately \$664,000.00.

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

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

The project is located within the Covedale Census Designated Place (CDP), Green Township, unincorporated Hamilton County. The project is centered approximately 1.8 miles east, west, and north of Cincinnati, approximately 2.2 miles southeast of Addyston, and approximately 2.4 miles southwest of Cheviot. The Covedale CDP, which covers 2.8 square miles, contained a population of 6,195 people based on the 2016 census data. The land use immediately surrounding the Project area is commercial/industrial turf, secondary growth deciduous forest, and maintained Right-of-Way.

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

Agricultural land vegetation assemblage does not exist within the project area.

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

The Ohio History Connection, Ohio's Historic Preservation Office (OHPO), online mapping system was consulted to identify previously recorded cultural resources within 1.6 km (1 mi) of the project area (the study area). The OHPO records check indicates that 1 archaeological site, 35 historic structures, and 1 cemetery have been previously recorded in the study area. One (1) National Register of Historic Places (NRHP) listed resource and 2 NRHP Determination of Eligibility (DOE) structures were located within the study area. None of these resources are located within or adjacent to the project area. At this time, the project area has not been surveyed for cultural resources. However, the majority of the project area is located in disturbed and graded areas related to the installation of the adjacent substation facility. The majority of the project area appears to have been heavily graded in 2015. In addition, the majority of the project area that does not appear to have been subject to previous heavy ground disturbance is at a grade of 20 degrees or greater, indicating a decreased likelihood for cultural deposits. See Attachment D, Cultural Resources Literature Review.

It does not appear that a Federal Nexus, requiring further coordination with the OPHO, will occur for the project, as there are likely no impacts to wetlands or streams that would require Federal permitting.

Given that the project involves only removal, replacement, and relocation of existing and previously installed structures requiring little to no new ground disturbance, it does not appear that impacts to significant cultural resources will occur as a result of the project. The minimal impacts associated with structure replacement do not warrant additional cultural resource surveys based on the proposed scope of work.

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

NPDES permitting is not required for the project as ground disturbance is expected to be under 1.0 acre.

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 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 A, Table 1, contains a list of the Rare, Threatened and Endangered (RTE) species known to occur within Hamilton County and their potential to occur within the Study Area based on their habitat requirements and observations during the field survey.

Coordination with the U.S. Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources Division of Wildlife (ODNR-DOW) was initiated on July 16, 2018.

Correspondence from the USFWS regarding RTE located within a ½-mile of the Study Area was received August 7, 2018 and from the ODNR-DOW on September 18, 2018 (Attachment F). The correspondence from USFWS and the ODNR-DOW indicated that there are no verified records of federally or state listed endangered, threatened, or candidate species, or their habitats existing within the project site or vicinity.

The entire Project Area was field surveyed by Cardno, Inc. (Cardno) as part of contracted services to assess ecological impacts. This included habitat assessments to identify RTE species and their habitat, specifically Indiana Bat and Northern Long-eared Bat roost trees. Based on Cardno's field inspection, the Project Study Area consisted of commercial/industrial turf, secondary growth deciduous forest, and maintained right-of-way. Suitable bat roost habitat was observed within the approximate 0.89-acre portion of the study area, which consisted of secondary growth forest located outside the actively maintained ROW. However, based on the USFWS recommendation that all tree clearing activities occur between October 1 and March 31, impacts to the Indiana Bat or Northern Long-eared Bat are not expected. Additionally, it does not appear that a Federal Nexus requiring further coordination with the USFWS will occur, as there are no expected impacts to wetlands or streams.

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

As a part of the investigation, Duke Energy hired Cardno to conduct an investigation for areas of ecological concern. As a part of Cardno's investigation, a request was submitted to the ODNR Natural Heritage Program and U.S. Fish and Wildlife Service on July 16, 2018, to research the presence of any unique ecological sites, geological features, animal assemblages, scenic rivers state wildlife area, nature preserves, parks or forest, national wildlife refuges, or other protected areas within one (1) mile of the Project area using the ODNR natural Heritage Database. A copy of ODNR's Response and USFWS response letters are included in Attachment F.

The ODNR response on September 18, 2018 indicated that there are no records of state 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 one (1) mile of the Project area.

As a part of the field investigation and ecological assessment, Cardno conducted a wetland delineation and stream assessment of the Project area. Cardno's investigation included an approximate 3.1 acre study area around the proposed centerline, access roads, and additional workspace areas. The Study Area was over-surveyed to account for potential reconfigurations compared to the final Project Area. During the investigation, Cardno identified two (2) potentially regulated waters within the Project's Study Area. This includes one (1) emergent wetland (Wetland 1) and one unnamed ephemeral stream (Stream 1). See Attachment G, Regulated Waters Delineation Report.

The proposed construction access plan as shown in Attachment A, Figure 2, and Attachment E, Appendix A was developed by Cardno to avoid and/or minimize

disturbance to all streams and wetlands. No impacts to regulated waters or RTE habitat are anticipated by the Project.

No 100-year floodplains were identified within the Study Area.

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

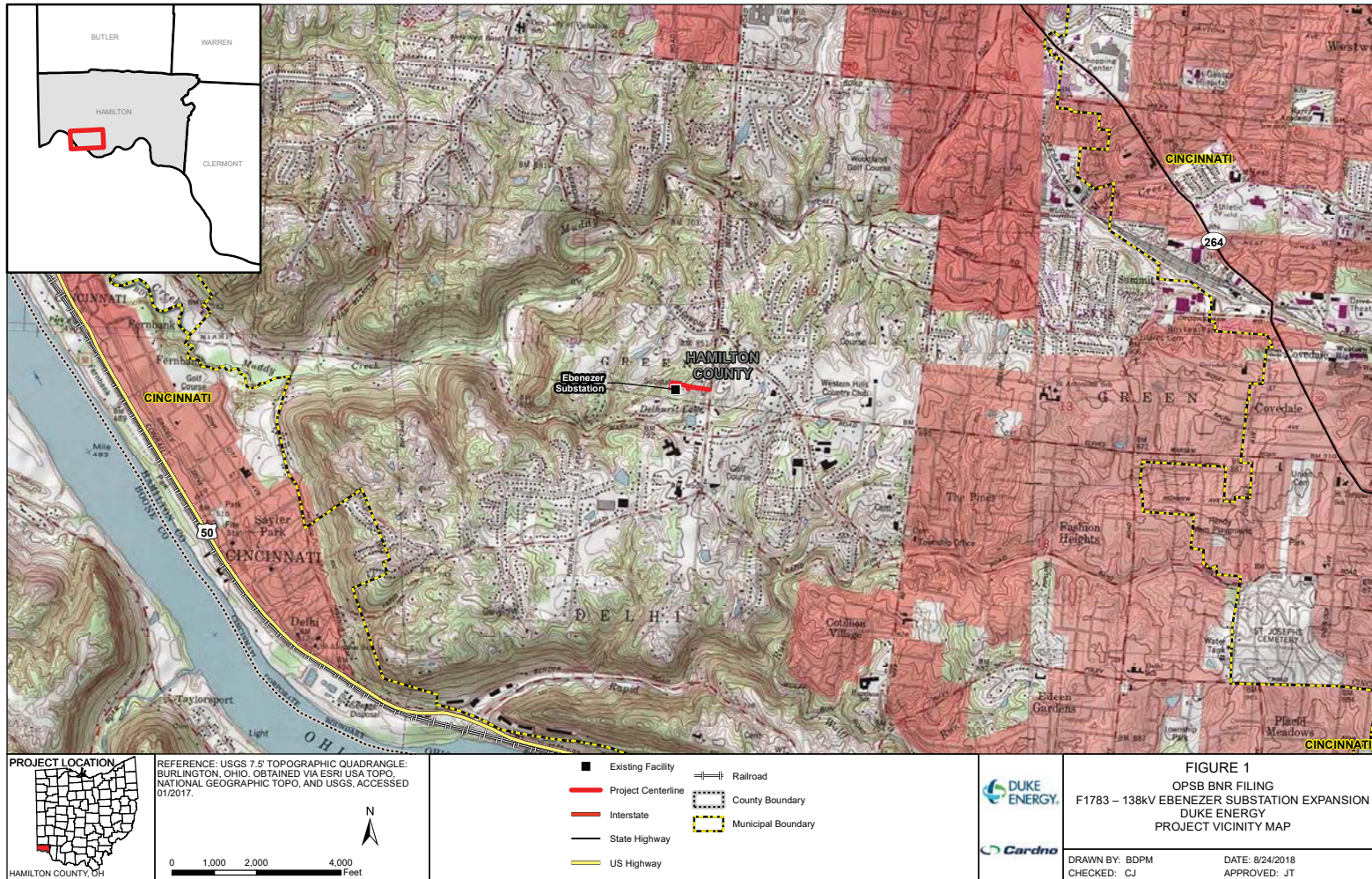
To the best of Duke Energy's knowledge, no unusual conditions exist that would result in environmental, social, health, or safety impacts. Construction and operation of the proposed Project will meet all applicable safety standards established by the Occupational Safety and Health Administration, and 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. The Stormwater Pollution Prevention Plan (SWPPP), depicting the project's access plan, is included in Attachment E.

4906-6-07: Document of Construction Notification Transmittal and Availability for Public Review

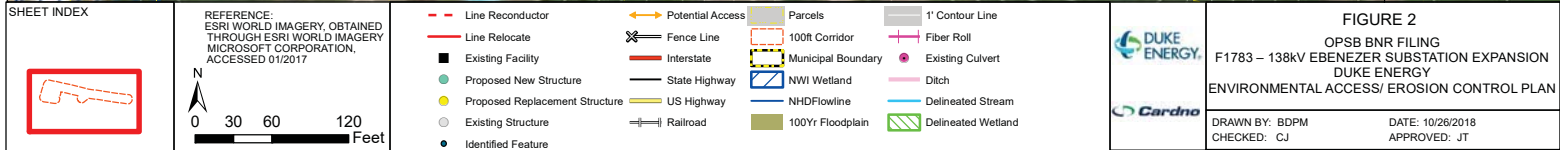
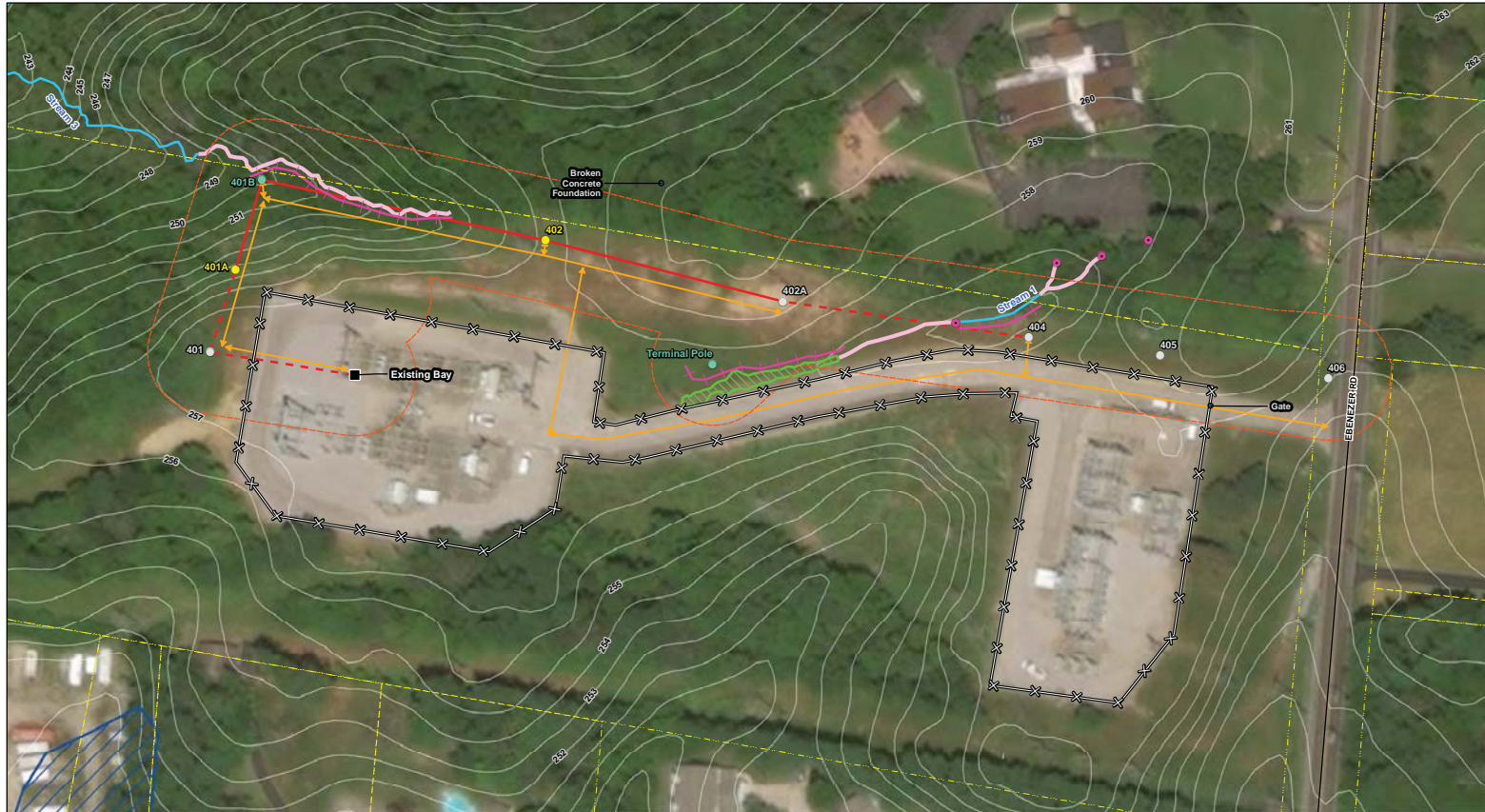
Copies of this Construction Notice have been sent to the appropriate offices of Hamilton County and Green Township. A notice of the availability of this application will be provided in the Green Township public library within 7 days of filing this application.

Attachment A

Figures and Tables



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Table 1: Rare, Threatened and Endangered (RTE) Species Within Hamilton County

SPECIES	COMMON NAME	STATE STATUS ¹	FEDERAL STATUS ²	HABITAT ³	BREEDING PERIOD ³	PROBABILITY OF OCCURENCE ⁴
Hamilton County						
MAMMAL						
<i>Eptesicus fuscus</i>	Big Brown Bat	SSC	---	Wooded and Semi wooded areas, mainly along streams.	August-October	Moderate
<i>Lasionycteris noctivagans</i>	Silver-haired Bat	SSC	---	Wooded and Semi wooded areas, mainly along streams.	August-October	Moderate
<i>Lasiurus borealis</i>	Red Bat	SSC	---	Wooded area and wooded edges and hedgerows.	August-September	Moderate
<i>Lasiurus cinereus</i>	Hoary Bat	SSC	---	Wooded, Semi wooded areas, and wooded edges.	August -October	Moderate
<i>Microtus ochrogaster</i>	Prairie Vole	SSC	---	Dry, vegetated areas; pastures, fields, meadows and prairies	May-October	Low
<i>Microtus pinetorum</i>	Woodland Vole	SSC	---	Wooded areas with thick organic material on forest floor.	April-August	Moderate
<i>Myotis lucifugus</i>	Little Brown Bat	SSC	---	Under rocks, wood piles and sometimes caves.	August-December	Moderate
<i>Myotis sodalis</i>	Indiana Myotis	E	E	Wooded and Semi wooded areas, mainly along streams. Maternity colonies are around hollow trees.	August-October	Moderate
<i>Myotis septentrionalis</i>	Northern long-eared Bat	SSC	T	Wooded and Semi wooded areas; live trees and in snags.	July-August	Moderate
<i>Perimyotis subflavus</i>	Tri-colored Bat	SSC	---	Edge habitats near areas of mixed agricultural use.	August-October	Moderate
<i>Peromyscus maniculatus</i>	Deer Mouse	SCC	---	Grasslands, brushlands, and agricultural fields.	Year round; mostly during warmer months	Low
<i>Reithrodontomys humulis</i>	Eastern Harvest Mouse	T	---	Open grassy areas such as abandoned fields, marshes or wet meadows.	April and August	Low
<i>Synaptomys cooperi</i>	Southern Bog Lemming	SSC	---	Low, moist areas, glasslands, mixed deciduous forests, freshwater wetlands, marshes and meadows.	Year-round	Low
<i>Taxidea taxus</i>	Badger	SSC	---	Open grasslands, agricultural areas and other treeless spaces.	July-August	Low
BIRD						
<i>Dendroica cerulean</i>	Cerulean Warbler	SSC	---	Deciduous hardwood forests, uplands, wet bottomlands, moist slopes.	May-June	Moderate
<i>Regulus satrapa</i>	Golden-crowned Kinglet	SI	---	Deciduous and mixed forests, wooded bogs, parks, bottomland hardwoods, swamps and riversides.	June-July(Migratory)	Low
FISH						
<i>Ammocrypta pellucida</i>	Eastern Sand Darter	SSC	---	Rocky pools and runs of creeks and small to medium rivers, often near vegetation or other cover.	Late April-May	Low
<i>Cycleptus elongatus</i>	Blue Sucker	T	---	Large river systems, in a heavy current.	April-June	Low
<i>Esox masquinongy</i>	Muskellung	SSC	---	Lakes and large rivers; Prefer shallow water with a rocky bottom and heavy cover.	April	Low

Table 1: Rare, Threatened and Endangered (RTE) Species Within Hamilton County

<i>Ictalurus furcatus</i>	Blue Catfish	SSC	---	Large river systems.	May-August	Low
<i>Lepisosteus platostomus</i>	Shortnose Gar	E	---	Calm waters of large rivers and their backwaters.	February-June	Low
<i>Macrhybopsis hyostoma</i>	Shoal Chub	E	---	Small streams with various substrates.	April-June	Low
<i>Moxostoma carinatum</i>	River Redhorse	SSC	---	Medium to large rocky rivers with moderate to strong currents. Usually found in long, deep run habitats.	Early June	Low
<i>Notropis boops</i>	Bigeye Shiner	T	---	Small to medium sized streams with pools over substrates of gravel, rock, or sand.	April-August	Low
<i>Noturus eleutherus</i>	Mountain Madtom	T	---	Fast flowing clear riffles that are shallow.	June-July	Low
<i>Noturus stigmosus</i>	Northern Madtom	E	---	Large rivers in swift currents.	June-July	Low
<i>Percina copelandi</i>	Channel Darter	T	---	Gravelly shallows of lakes, and in small and medium-sized rivers in riffles over sand, gravel or rock bottoms.	April-May	Low
<i>Percina shumardi</i>	River Darter	T	---	Major rivers and mouths of tributaries with swift currents over sandy, gravelly or rocky substrates.	Year-round, depending on water temperatures.	Low
<i>Polyodon spathula</i>	Paddlefish	T	---	Large, slow moving rivers with access to sand or gravel bars.	March-June	Low
INVERTEBRATE						
<i>Alasmidonta marginata</i>	Elktoe	SSC	---	Shallow to medium sized creeks or rives.	June-July	Low
<i>Catocala maestosus</i>	---	SI	---	Riparian wooded areas.	July-October	Low
<i>Cyclonaias tuberculata</i>	Purple Wartyback	SSC	---	Large to medium sized rivers with a gravel or mixed sand substrates.	May-August	Low
<i>Cyprogenia stegaria</i>	Fanshell	E	E	Rivers and streams with abundant gravel and sand substrates.	April-August	Low
<i>Ellipsaria lineolata</i>	Butterfly Mussel	E	---	Large rivers with swift currents in sand or gravel substrates.	July-August	Low
<i>Elliptio crassidens crassidens</i>	Elephant-ear	E	---	Rivers and streams with muddy sand, sand, and rocky substrates in moderate currents.	April-May	Low
<i>Epioblasma obliquata obliquata</i>	Purple Cat's Paw	E	E	Large rivers with gravel or mixed sand substrates.	April-May	Low
<i>Epioblasma torulosa rangiana</i>	Northern Riffleshell	E	E	Large to small streams.	Breeding season occurs once a year, dependent upon water temperature	Low
<i>Epioblasma triquetra</i>	Snuffbox	E	E	Riffles areas of fast moving rivers and streams.	July-August	Low
<i>Fusconaia ebena</i>	Ebonyshell	E	---	Rivers and streams with coarse sand and gravel substrates.	June-September	Low
<i>Fusconaia maculate maculate</i>	Long-solid	E	---	Small to large rivers in gravel with strong currents.	May-July	Low

Table 1: Rare, Threatened and Endangered (RTE) Species Within Hamilton County

<i>Gomphus externus</i>	Plains Clubtail	E	---	Found near large, slow, muddy streams and rivers.	May-Late July	Low
<i>Lampsilis abrupta</i>	Pink Mucket	E	E	Small to medium rivers with swift currents.	June-July	Low
<i>Lampsilis fasciola</i>	Wavy-rayed Lampmussel	SSC	---	Medium streams with gravel or sand bottoms.	June-July	Low
<i>Lampsilis ovata</i>	Sharp-ridged Pocketbook	E	---	Ponds, lakes and streams with slow moving water and plenty of cover.	June-July	Low
<i>Lampsilis teres</i>	Yellow Sandshell	E	---	Large rivers with slow moving currents.	June-July	Low
<i>Lasmigona compressa</i>	Creek Heelsplitter	SSC	---	Medium to large rives in pools over compact sand and gravel, or mud patches near shore.	June-July	Low
<i>Ligumia recta</i>	Black Sandshell	T	---	Rivers, lakes and large streams in riffles over muddy to gravel substrates.	July-August	Low
<i>Lycaena helloides</i>	Purplish Copper	E	---	Wet meadows, marshes and streamsides.	July-August	Low
<i>Megaloniaias nervosa</i>	Washboard	E	---	Slow moving rivers and streams with muddy to rocky substrates.	August-October	Low
<i>Nannothermis bella</i>	Elfin Skimmer	E	---	Bogs and fens.	March-September	Low
<i>Obliquaria reflexa</i>	Threehorn Wartyback	T	---	Large rivers with sand or gravel substrates.	July-August	Low
<i>Orconectes sloanii</i>	Sloan's Crayfish	T	---	Freshwater lakes and streams, under rocks and logs.	August-October	Low
<i>Plethobasus cyphus</i>	Sheepnose	E	E	Large rivers in shallow areas with moderate to swift currents that flow over coarse sand and gravel substrates.	July-August	Low
<i>Pleurobema clava</i>	Clubshell	E	E	Medium to large rivers with gravel or sandy substrates.	July-August	Low
<i>Pleurobema cordatum</i>	Ohio Pigtoe	E	---	Large rivers in riffle areas with clear, swift moving water.	April-May	Low
<i>Pleurobema rubrum</i>	Pyramid Pigtoe	E	---	Medium to large rivers in sand or gravel.	May-July	Low
<i>Pleurobema sintoxia</i>	Round Pigtoe	SSC	---	Small to large rivers with moderate to swift flowing water with gravel, cobble or boulder substrates.	June-July	Low
<i>Ptychobranchus fasciolaris</i>	Kidneyshell	SSC	---	Small to medium sized rivers in riffle areas with clear, swift moving water.	April-August	Low
<i>Quadrula cylindrical cylindrical</i>	Rabbitsfoot	E	T	Large, clean, fast-flowing waters.	April-August	Low
<i>Quadrula metanevra</i>	Monkeyface	E	---	Large, clean, fast-flowing waters in silt-free rubble, gravel and sand bottoms.	March-July	Low
<i>Quadrula nodulata</i>	Wartyback	E	---	Large, clean, fast-flowing waters in silt-free rubble, gravel and sand bottoms.	May	Low
<i>Speyeria idalia</i>	Regal Fritillary	E	---	Tall-grass prairie and other open location including meadows, marshes and pastures.	June-July	Low
<i>Truncilla donaciformis</i>	Fawnsfoot	T	---	Rivers and lakes in slower moving water. Usually in sand or gravel substrates.	April-May	Low
<i>Truncilla truncate</i>	Deertoe	SSC	---	Lakes and medium to large rivers. Usually in mud, sand or gravel substrates.	August-July	Low

Table 1: Rare, Threatened and Endangered (RTE) Species Within Hamilton County

<i>Uniomerus tetralasmus</i>	Pondhorn	T	---	Freshwater rivers, ponds and lakes.	Unknown	Low
<i>Villosa fabalis</i>	Rayed Bean	E	E	Small headwater creeks, sometimes found in large rivers. Prefers gravel or sand substrates.	Unknown; Egg-bearing females have been found in May.	Low
REPTILE						
<i>Clonophis kirtlandii</i>	Kirtland's Snake	T	---	Prairie fens, wet meadows, wet prairies and associated open and wooded wetlands	February-March, May, August-September	Low
<i>Opheodrys aestivus aestivus</i>	Northern Rough Greensnake	SSC	---	Moist meadows and woodlands, often near water.	April-May	Low
AMPHIBIAN						
<i>Acris crepitans crepitans</i>	Eastern Cricket Frog	SSC	---	The shores of sparsely vegetated permanent ponds and streams.	April-June	Low
<i>Cryptobranchus alleganiensis alleganiensis</i>	Eastern Hellbender	E	---	Medium to large, rocky streams that are not excessively silty and have an abundance of crayfish.	September	Low
<i>Eurycea lucifuga</i>	Cave Salamander	E	---	In and around caves, seeps, springs, and small forested limestone creeks associated with groundwater. Rock crevices or under rocks, logs, or other debris.	December-February	Low
PLANT						
<i>Trifolium stoloniferum</i>	Running Buffalo Clover	---	E	Disturbed bottomland meadows. Disturbed sites that have shade part of the day.	n/a	Low

1. STATE STATUS - X = extirpated, E = endangered, T = threatened, R = rare, SSC = special concern, WL = watch list, SG = significant, SI = Special Interest ** = no status but rarity warrants concern

Ohio Department of Natural Resources, Division of Wildlife Website - <http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/information/pub356.pdf> (March 2016).

2. FEDERAL STATUS - E = endangered, T = threatened, R = rare, LELT = different listing for specific ranges or species, PE = proposed endangered, PT = proposed threatened, e/sa = appearance similar to a listed endanger species, ** = not listed

United States Fish and Wildlife Service, County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species - <http://www.fws.gov/midwest/endangered/lists/ohio-cty.html> (January 2017).

3. Habitats and Breeding Periods described by:

- NatureServe: An online encyclopedia of life [web application].2000. Version 1.1 Arlington, Virginia, USA: Association for Biodiversity information. Available: <http://www.natureserve.org/> (Accessed January 6, 2017).
- United States Fish and Wildlife Service Rayed Bean Fact Sheet - <http://www.fws.gov/midwest/endangered/clams/rayedbean/RayedBeanFactSheet.html> (January 6, 2017).
- United States Fish and Wildlife Service Indiana Bat Fact Sheet - <http://www.fws.gov/midwest/endangered/mammals/inba/index.html> (January 6, 2017).
- United States Fish and Wildlife Service Northern Long-eared Bat Fact Sheet - <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html> (January 6, 2017).
- United States Fish and Wildlife Service Eastern Massasauga Fact Sheet - <http://www.fws.gov/midwest/endangered/mammals/inba/index.html> (January 6, 2017).
- United States Fish and Wildlife Service Running buffalo clover Fact Sheet - <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html> (January 6, 2017).

4. Likelihood of occurrence: None, Low, Moderate, or High based on best available data and selective field observations.

Attachment B

Proposed Site Plans and Project Area Location Relative to Existing Electric Lines

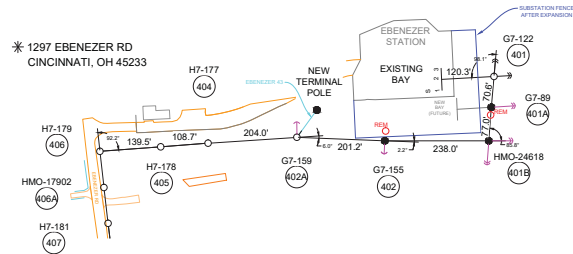
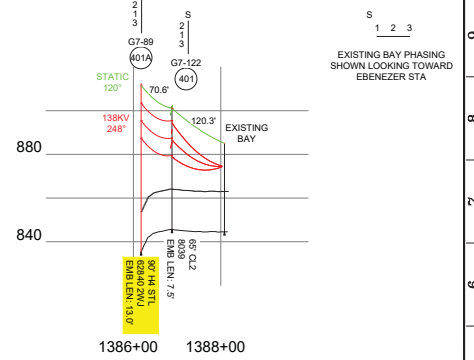
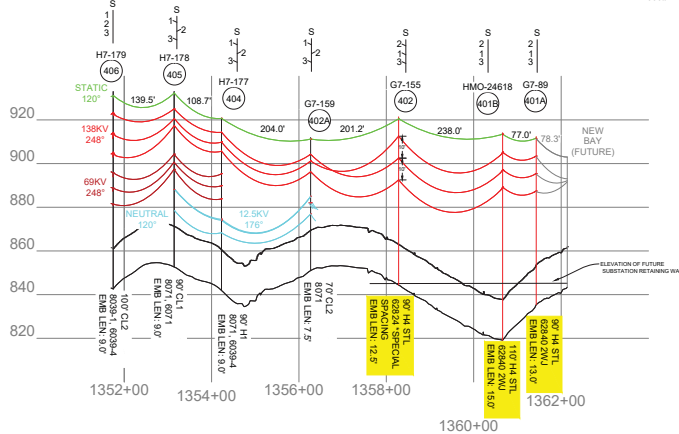
MAP GRID: N01W0212
COMMUNITY: COVEDALE
TWP: GREEN
STATE: OHIO
COUNTY: HAMILTON
TAX: 31 0450
OPERATING UNIT: VSOH
FEEDER (138KV): F1783
FEEDER (89KV): F6864
FEEDER (12.9KV): EBENEZER 43
DISTRICT: HARTWELL

CONTACT/ENGINEER:
JAKE DAWN
513-287-1371

TRANSMISSION:
WOF 26504219
PROJECT CODES:
PROJECT# ACTIVITY DESCRIPT.
T1504TL1 I INSTALL
T1504TL1 R RETIRE
T1504TL1 X MAINT.

HL401B to HL401A
STATIC
500# NESC HEAVY 250B INITIAL RS
TRANSMISSION
1050# NESC HEAVY 250B INITIAL RS

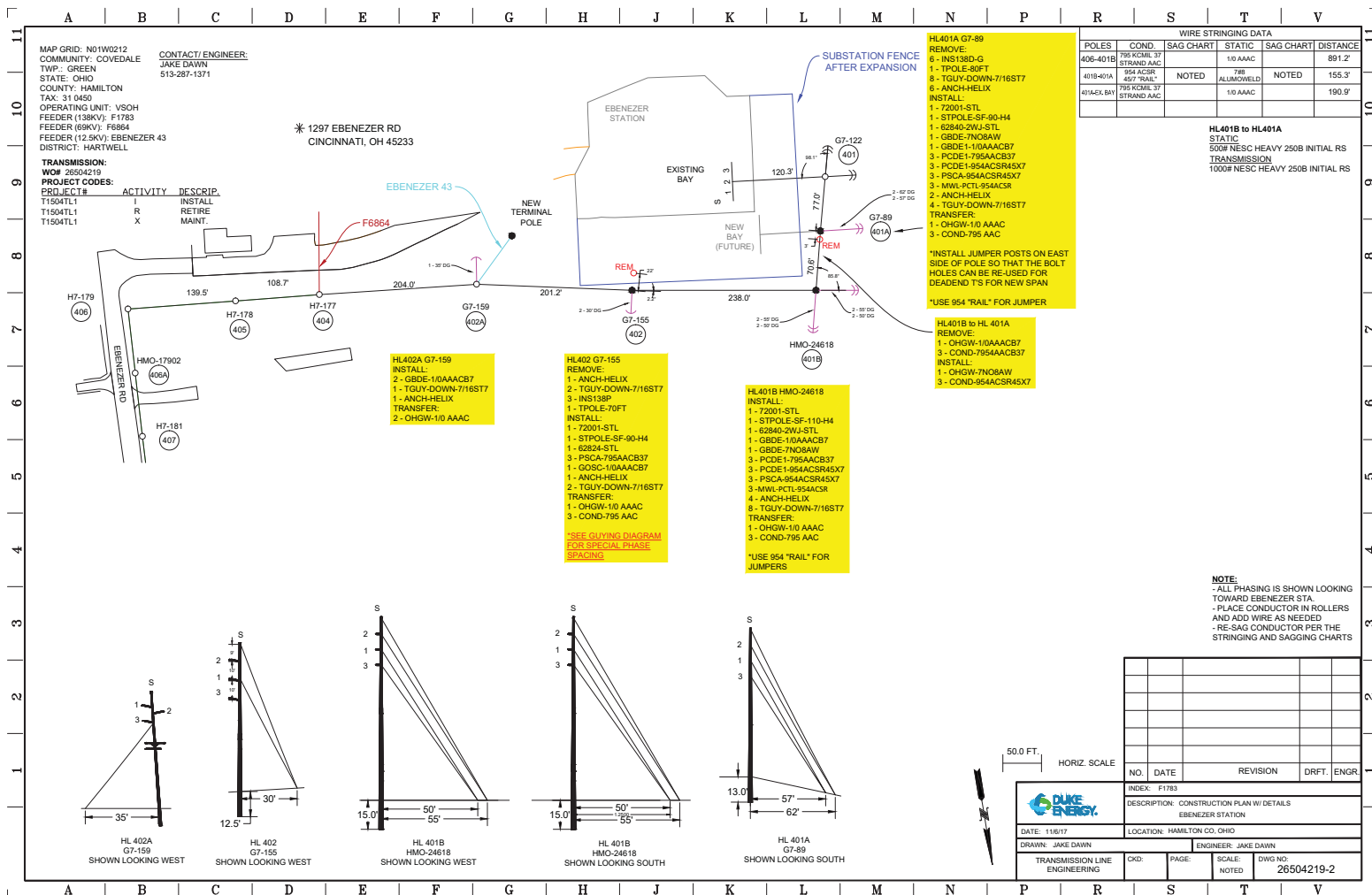
WIRE STRINGING DATA				
POLES	COND.	SAG CHART	STATIC	SAG CHART
406-401B	795 KCMIL 37 STRAND AAC		1/0 AAC	
401B-NEW BAY	894 ALCPH 457 "DALE"	NOTED	7/8 ALUMOWELD	NOTED
401A-EX BAY	795 KCMIL 37 STRAND AAC		1/0 AAC	



NOTE:
- ALL PHASING IS SHOWN LOOKING TOWARD EBENEZER STATION
- PLACE CONDUCTOR IN ROLLERS AND ADD WIRE AS NEEDED
- RE-SAG CONDUCTOR PER THE STRINGING AND SAGGING CHARTS

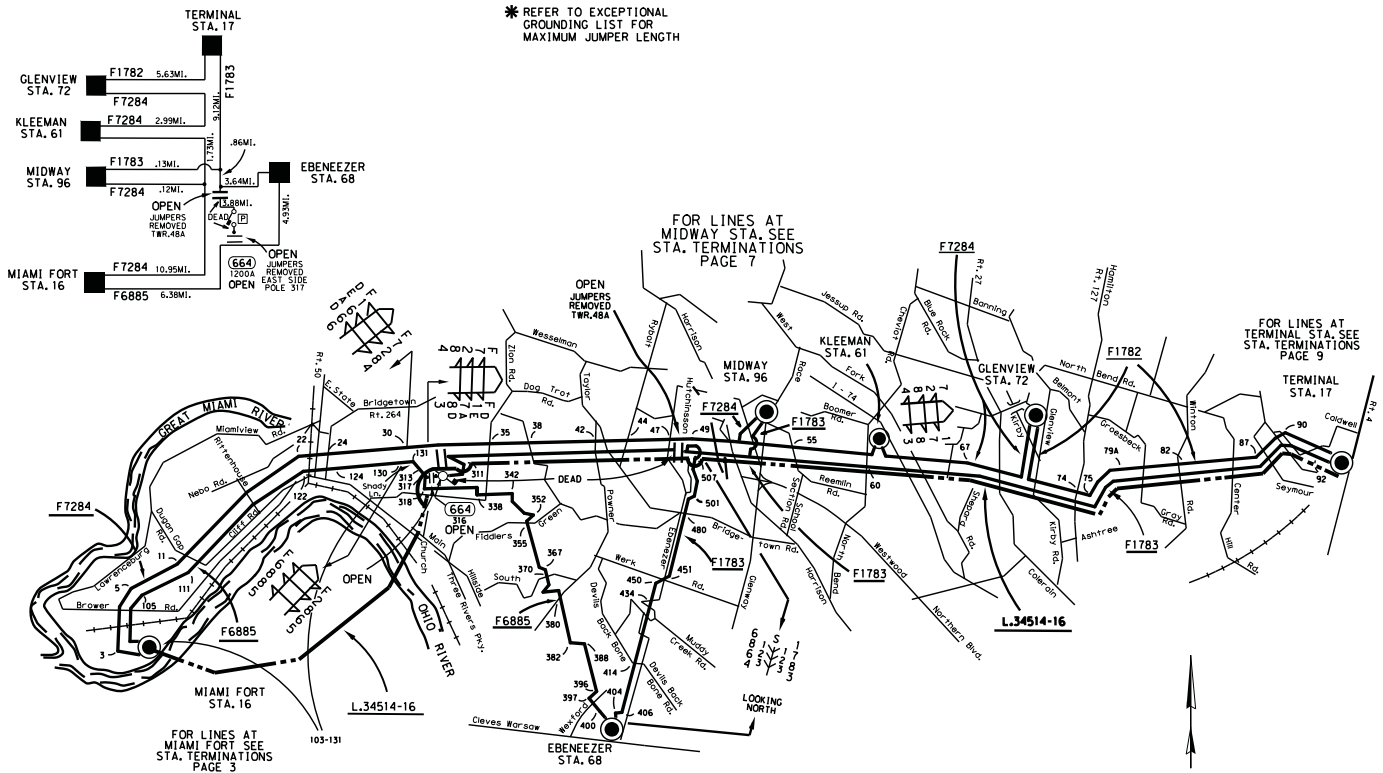
NO. DATE REVISION DRFT. ENGR			

DUKE ENERGY		INDEX: F1783	
DATE: 11/6/17		LOCATION: HAMILTON CO, OHIO	
DRAWN: JAKE DAWN		ENGINEER: JAKE DAWN	
TRANSMISSION LINE ENGINEERING		CKD:	PAGE:
		SCALE:	DWG NO: 26504219-1



* 1782
* 1783
* 6885
* 7284

* REFER TO EXCEPTIONAL
GROUNDING LIST FOR
MAXIMUM JUMPER LENGTH



Attachment C

Property Owner Notification Letter



Transmission–Public Engagement
EX552 | 315 Main St
Cincinnati, Ohio 45202
duke-energy.com

Oct. 11, 2018

Re: Important information about a Duke Energy Reliability Enhancement project in your area – Ebenezer Substation expansion

Dear Property Owner,

Reliability is a responsibility that Duke Energy takes very seriously. As a result of that commitment, we are upgrading the energy transmission system in your community, which will provide continued reliability of your area's electric service. As a neighbor to the project area in Hamilton County, we're writing to provide information on how to reach us should you have any questions.

Duke Energy is preparing to expand and upgrade the 138-kilovolt (kV) Ebenezer Substation at 1209 Ebenezer Road in Green Township. This work is planned to improve the reliability of your electric service and to speed up restoration times, such as outage occurrences, during extreme weather events.

The substation fence will be moved approximately 80-by-260 feet along the north end of the substation. Vegetation clearing for the expansion is scheduled for October. In November, a section of 69-kV transmission line will be rebuilt to prepare for the expansion. The construction will include removing two wood poles and installing three steel transmission poles at the rear of the substation. The poles range in height from 77 1/2 to 95 feet above the ground.

The majority of the construction – including the fence expansion and addition of two 138-kV transformers to convert energy to high or low voltage levels – is scheduled for April 2019. The construction also involves adding a 10-foot retaining wall running 272 feet along the north side of the substation.

Installing transmission equipment is similar to a typical construction site, with numerous crews, trucks and equipment. The right of way must be clear during the construction process for the safe and unobstructed access of our crews to the site. There may be lulls between the various phases of activity, which include:

- **Concrete work.** Concrete footings and foundations are poured shortly after the site is cleared. Property owners can expect large trucks with a concrete mixer in the right of way.

- **Steel Erection and Civil Construction.** Once the concrete on the concrete pad has cured, the substation steel framework – typically towers or poles – is installed. The steel supports electric control equipment and the transmission lines that connect the substation to the regional electric grid.
- **Equipment Testing.** The new equipment is extensively tested before the substation goes online to ensure the facility will operate safely and reliably.
- **Energizing and Site Restoration.** Upon completion of construction and testing activities, the substation is energized. All disturbed or exposed areas outside the substation fence line are re-vegetated and seeded to establish ground cover and protect the soil from erosion.
- **Post-construction Operation.** Most substations are not staffed once they're placed in operation. Technicians may make regular visits to perform routine maintenance and monitor its operation.

Generally, home and business owners can anticipate skilled contractors and trade workers working in the project area during daytime hours.

We don't anticipate that you will experience any power outages during the upgrades. We expect all construction to be completed by June 2019.

The need for energy has grown in Southwest Ohio, and Duke Energy is committed to providing dependable, cost-effective and reliable electric service to our customers. For additional questions, please call us toll-free at **888.827.5116** or email **MWOHioTransmission@duke-energy.com**.

Sincerely,



Joshua Gooding
Project Manager

State Parcel Identification Number: 055002600444

Over the past year, Duke Energy Ohio and Kentucky employees have volunteered more than 9,900 hours of service to the region.

EASEMENT EXHIBIT "A"

EASEMENT AREA TO DUKE ENERGY OHIO, INC.

SITUATED IN SECTION 25, TOWN 2, FRACTIONAL RANGE 2, MIAMI PURCHASE, GREEN TOWNSHIP, HAMILTON COUNTY, OHIO, BEING PART OF A TRACT OF LAND CONVEYED TO PEACE LUTHERAN CHURCH IN WARRANTY DEED RECORDED IN DEED BOOK 3346 PAGE 742, HAMILTON COUNTY RECORDS. THE BOUNDARY OF A VARIABLE WIDTH ELECTRIC EASEMENT BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF THE GRANTOR'S TRACT; THENCE ALONG THE GRANTOR'S SOUTH LINE, S80°17'30"E A DISTANCE OF 235.28 FEET TO THE **POINT OF BEGINNING**; THENCE N16°21'42"E 19.47 FEET; THENCE S77°52'44"E 20.00 FEET; THENCE N16°14'26"E 35.72 FEET; THENCE S73°45'34"E 10.00 FEET; THENCE S16°14'26"W 35.00 FEET; THENCE S77°52'44"E 226.67 FEET; THENCE N13°14'31"E 9.81 FEET; THENCE S76°45'29"E 10.00 FEET; THENCE S13°14'31"W 9.81 FEET; THENCE S75°38'17"E 97.61 TO A POINT ON SAID SOUTH LINE OF GRANTOR'S TRACT; THENCE ALONG SAID SOUTH LINE OF GRANTOR'S TRACT N80°17'30"W 365.99 FEET TO THE **POINT OF BEGINNING**;



CONTAINING 0.104 ACRES OF LAND MORE OR LESS AND BEING SUBJECT TO ALL LEGAL HIGHWAYS EASEMENTS AND RESTRICTIONS OF RECORD.



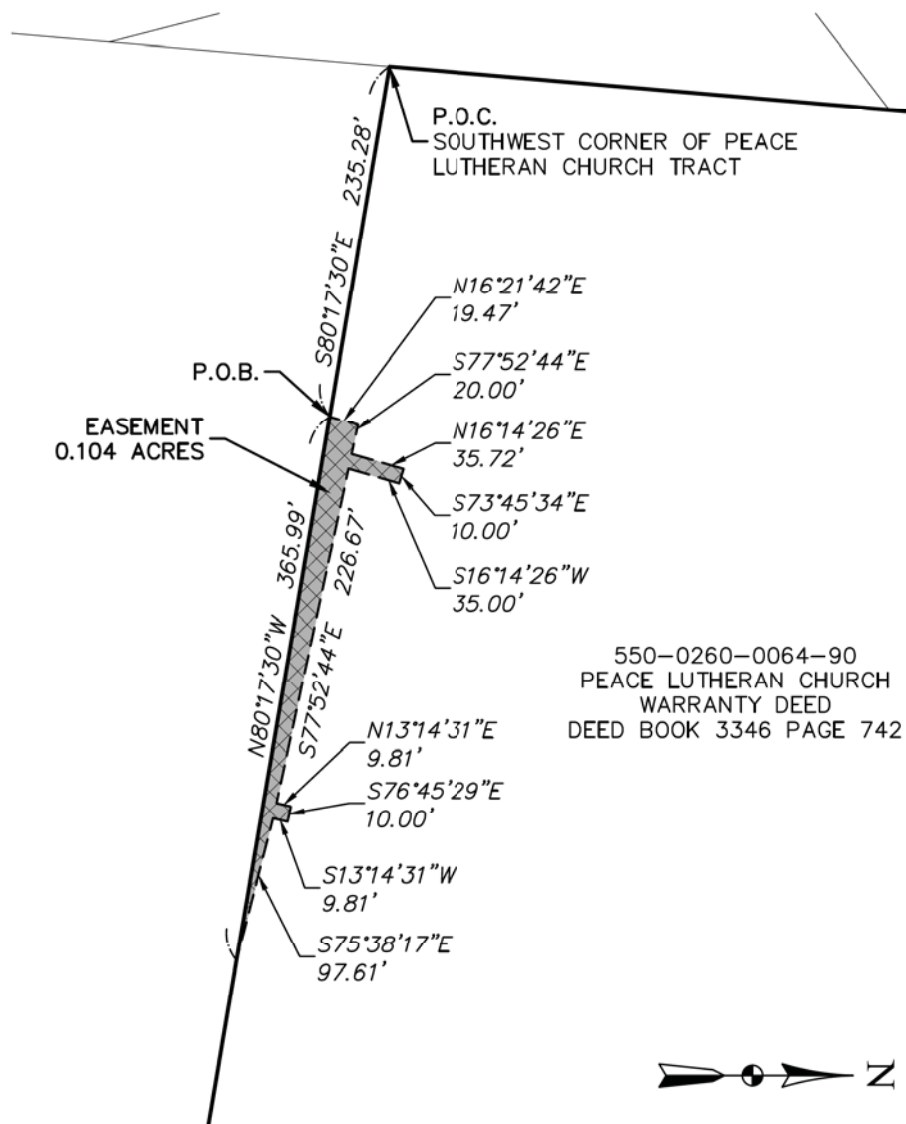
TREVOR A. McMANN, 1/30/2018
OHIO REGISTRATION NO. 8522



*BEARING BASIS: NAD83 OHIO STATE PLANE SOUTH ZONE, US FOOT

S. 25, T. 2, F. R. 2		MIAMI PURCHASE, GREEN TOWNSHIP		HAMILTON COUNTY	OHIO
 DUKE ENERGY®	 MCA 800.525.6016 www.metroca.net	PEACE LUTHERAN CHURCH		JOB: 1054-17-8385	
		PROJECT#		DATE: 1/30/2018	
		102053-1792		SHEET 1 OF 2	

EASEMENT EXHIBIT "A"



LEGEND

—	PROPERTY LINE
P.O.B.	POINT OF BEGINNING
P.O.C.	POINT OF COMMENCEMENT
	PROPOSED EASEMENT AREA

S. 25, T. 2, F. R. 2	MIAMI PURCHASE, GREEN TOWNSHIP	HAMILTON COUNTY	OHIO
	 800.525.6016 www.metroca.net	PEACE LUTHERAN CHURCH PROJECT# 102053-1792	JOB: 1054-17-8385 DATE: 1/30/2018
			SHEET 2 OF 2

PARCELID	OWNER NAME	OWNER ADDRESS	OWNER CITY	OWNER STATE	OWNER ZIP
055002600444	BOEHM MICHAEL E & PAMELA M	1386 WEXFORD LN	CINCINNATI	OH	45233
055002600447	BONNER MARK J	1370 WEXFORD LN	CINCINNATI	OH	45233
055002600115	LUKE ENERGY OHIO INC, C/O TAX DEPTMEN	550 TRYON ST	CHARLOTTE	NC	28201
055002600487	HORN RICHARD J & SHELLY D	1400 DAVIDS WAY	CINCINNATI	OH	45233
055002600512	IVY KNOLL HOMEOWNERS ASSOCIATION	1421 DAVIDS WAY	CINCINNATI	OH	45233
055002600422	JONES NICHOLAS A & SARAH M	1342 WEXFORD LN	CINCINNATI	OH	45233
055002600448	KANE STEVEN M & SHANNON M	1366 WEXFORD LN	CINCINNATI	OH	45233
055002600445	LAKE ROBERT E	1374 WEXFORD LN	CINCINNATI	OH	45233
054001200130	LANGENBRUNNER & GREVER CO	986 PINEKNOT DR	CINCINNATI	OH	45238
054001200131	LANGENBRUNNER & GREVER CO	986 PINEKNOT DR	CINCINNATI	OH	45238
054001200132	LANGENBRUNNER & GREVER CO	986 PINEKNOT DR	CINCINNATI	OH	45238
054001200169	LANGENBRUNNER & GREVER CO	986 PINEKNOT DR	CINCINNATI	OH	45238
054001200129	LANGENBRUNNER & GREVER CO	986 PINEKNOT DR	CINCINNATI	OH	45238
054001200170	LANGENBRUNNER & GREVER CO	986 PINEKNOT DR	CINCINNATI	OH	45238
054001200283	PATTON SAMUEL T JR	6194 CLEVES WARSAW PIKE	CINCINNATI	OH	45233
054001200007	PATTON SAMUEL T JR	6194 CLEVES WARSAW PIKE	CINCINNATI	OH	45233
055002600064	PEACE LUTHERAN CHURCH	1451 EBENEZER RD	CINCINNATI	OH	45233
055002600496	WEIKERT JONATHAN N & LAURA M	1505 JACKS WAY	CINCINNATI	OH	45233
055002600446	WESSELS LARRY & MARCIA	1372 WEXFORD LN	CINCINNATI	OH	45233
055002600423	YOUNTS PHILIP L & DENNIS W	1340 WEXFORD LN	CINCINNATI	OH	45233

Attachment D

Cultural Resources Literature Review

Duke Energy Ohio will coordinate directly with Staff of the Ohio Power Siting Board regarding Attachment D, Cultural Resources Literature Review.

Attachment E

Stormwater Pollution Prevention Plan



Storm Water Pollution Prevention Plan

F1783 – 138kV Ebenezer Substation Expansion
Hamilton County, Ohio

Duke Project No. T1504TL1
Cardno Project No. J156720M68

July 20, 2018

Prepared for: **Duke Energy**
1000 East Main Street
Plainfield, Indiana 46168



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





Storm Water Pollution Prevention Plan

F1783 Ebenezer Substation Expansion

Hamilton County, Ohio

December 28, 2017

Document Information

Project Site Owner	Duke Energy
Duke Energy Contact	Amanda Sheehe, Duke Energy
Project(s) Name	F868 – 69kV Oakley to Fairfax Rebuild
Project(s) Number	Duke T1504TL1 Cardno J156702M68
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

Appendix A	Figures
Appendix B	Storm Water Pollution Prevention Plan Typical Details
Appendix C	Storm Water Evaluation Form for Construction
Appendix D	SWPPP Amendment Log
Appendix E	Local Reviewing Agency Approval
Appendix F	Notice of Termination (replace when filed)

Figures

Figure 1	Project Vicinity
Figure 2	Project Area Watersheds (14-Digit HUC)
Figure 3	Soils Classification
Figure 4	Environmental Access and Erosion Control Plan
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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 involves the addition of approximately 0.2 miles of existing transmission line within existing 100-foot wide Duke Energy transmission line corridor Right-Of-Way (ROW). The F1783 Ebenezer Substation Expansion project begins at Duke Energy Structure HL-406 located east of Ebenezer Road, west of Wexford Lane, north of Cleves Warsaw Pike and south of Devils Backbone Road (39.27913, -84.43978) and terminates at Duke Energy Ebenezer Substation located east of Ebenezer Road, west of Wexford Lane, north of Cleves Warsaw Pike and south of Devils Backbone Road (39.12221, -84.65502). A field investigation of the corridor was conducted on March 3, 2018.

The proposed F1783 Ebenezer Substation Expansion 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 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. Earth moving activities are anticipated to be minimal, if any. 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 October 2018.

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:

Burlington Ohio Quad

Section 25, Township 2E, Range 2N, Civil Township: Green Township

A6 Location of all lots and proposed site improvements

The proposed project is linear in scope and will take place entirely within an established transmission line ROW. Only approved areas beyond the ROW 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 watershed:

Muddy Creek - (14-digit HUC 05090203-020-040)

A8 Notation of any State or Federal water quality permits

There are no proposed impacts to regulated waters that would require a permit from either the U.S. Army Corps of Engineers (USACE) or the Ohio Environmental Protection Agency (OEPA). 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 Ohio River via Muddy Creek, and unnamed tributaries to Muddy Creek.

A12 Identification of potential discharges to groundwater

The proposed site 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

No structures associated with the F1783 Ebenezer Substation Expansion are located within FEMA-defined floodplains. See Appendix A, Figures 4.01 to 4.02, for the location of floodplains. Therefore, no additional floodplain coordination or permits will be 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 industrial, commercial, residential, palustrine emergent wetland, and scrub-shrub/maintained right-of-way (ROW).

A16 Locations and approximate boundaries of all disturbed areas

The majority of ground disturbance will occur within off-road sections of construction vehicle access routes and the structure installation locations. The expected disturbance for this project is conservatively estimated at 0.53 acres (20-foot wide access footprint for proposed 0.15 mile of off-road construction access routes).

A17 Identification of existing vegetative cover

The existing vegetative cover is mixture of secondary growth forest, herbaceous wetlands, and maintained ROW.

A18 Soils map including descriptions and limitations

According to the NRCS Soil Survey Geodatabase data collected for Hamilton County, five (5) mapped soil units are present within the Study Area. One of these soils (Ava silt loam) 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, 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 corridor 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 Project 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 alterations 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 F).

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

Where applicable, BMPs (fiber rolls or other catch basin protection) will be installed to prevent erosion from storm water runoff from areas of construction to enter directly into the storm sewer.

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 used 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
<i>Andropogon gerardii</i> (Big Bluestem)	24 oz./acre
<i>Bouteloua curtipendula</i> (Sideoats Grama)	1 oz./acre
<i>Carex bicknellii</i> (Prairie Oval Sedge)	2 oz./acre
<i>Elymus canadensis</i> (Canada Wild Rye)	2 oz./acre
<i>Dactylis glomerata</i> (Orchard grass)	24 oz./acre
<i>Panicum virgatum</i> , Switchgrass)	4 oz./acre
<i>Schizachyrium scoparium</i> (Little Bluestem)	3 oz./acre
<i>Sorghastrum nutans</i> (Indian Grass)	0.5 oz./acre
Cover Crop Species	Application Rate
<i>Avena sativa</i> (Seed Oats)	800 oz./acre
<i>Lolium multiflorum</i> (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 is a new transmission line rebuild project consisting of improvements made solely to Duke Energy transmission 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 site 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

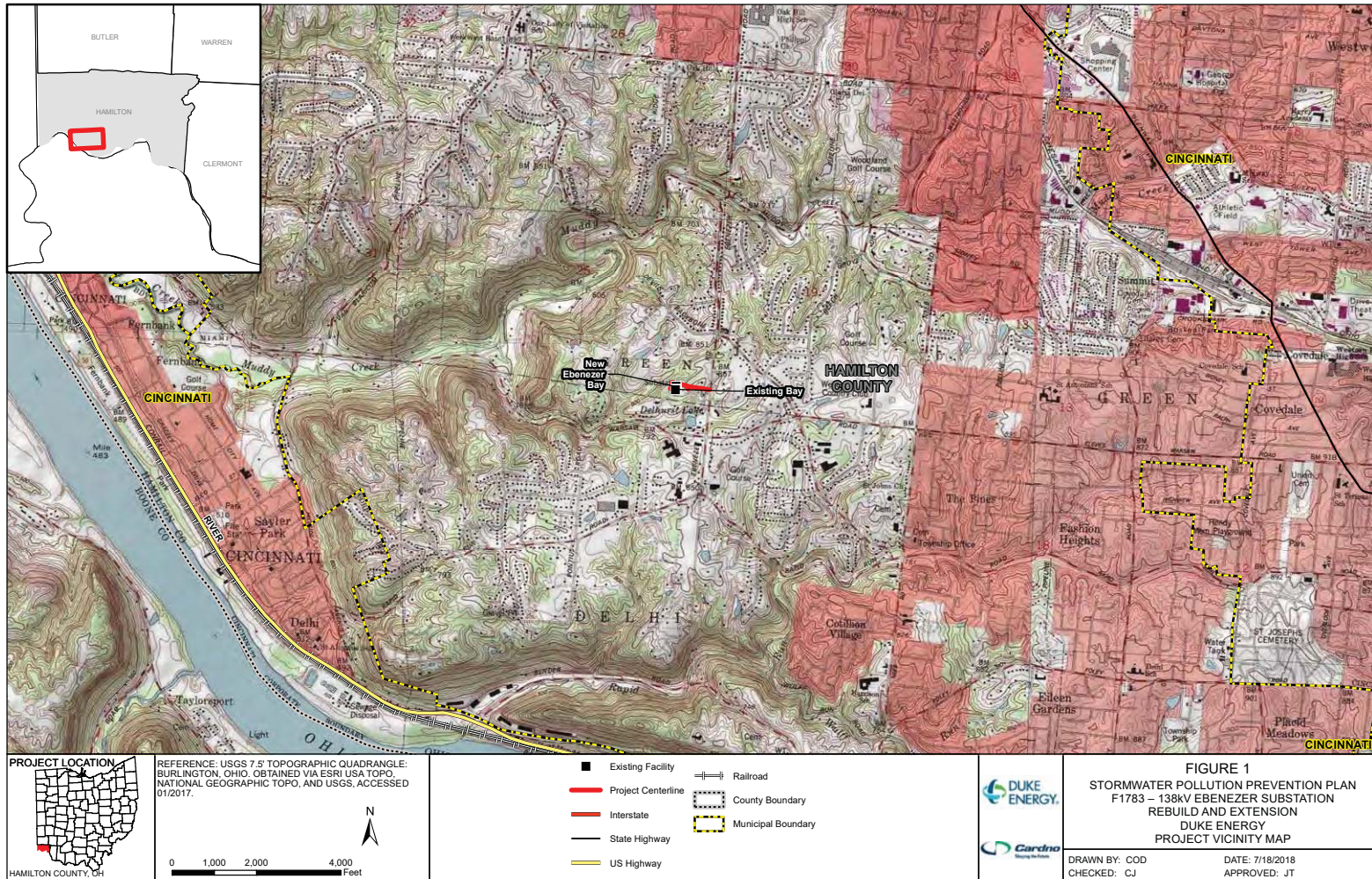
Seeded areas will be inspected to ensure adequate vegetative establishment and coverage. Adequate coverage shall be defined as greater than or equal to 70% areal coverage by visual estimation. Reseeding, watering or fertilization shall be utilized to meet this goal. Fertilizer should not be used in areas 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 its pre-construction agricultural use.

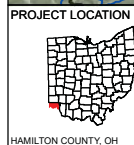
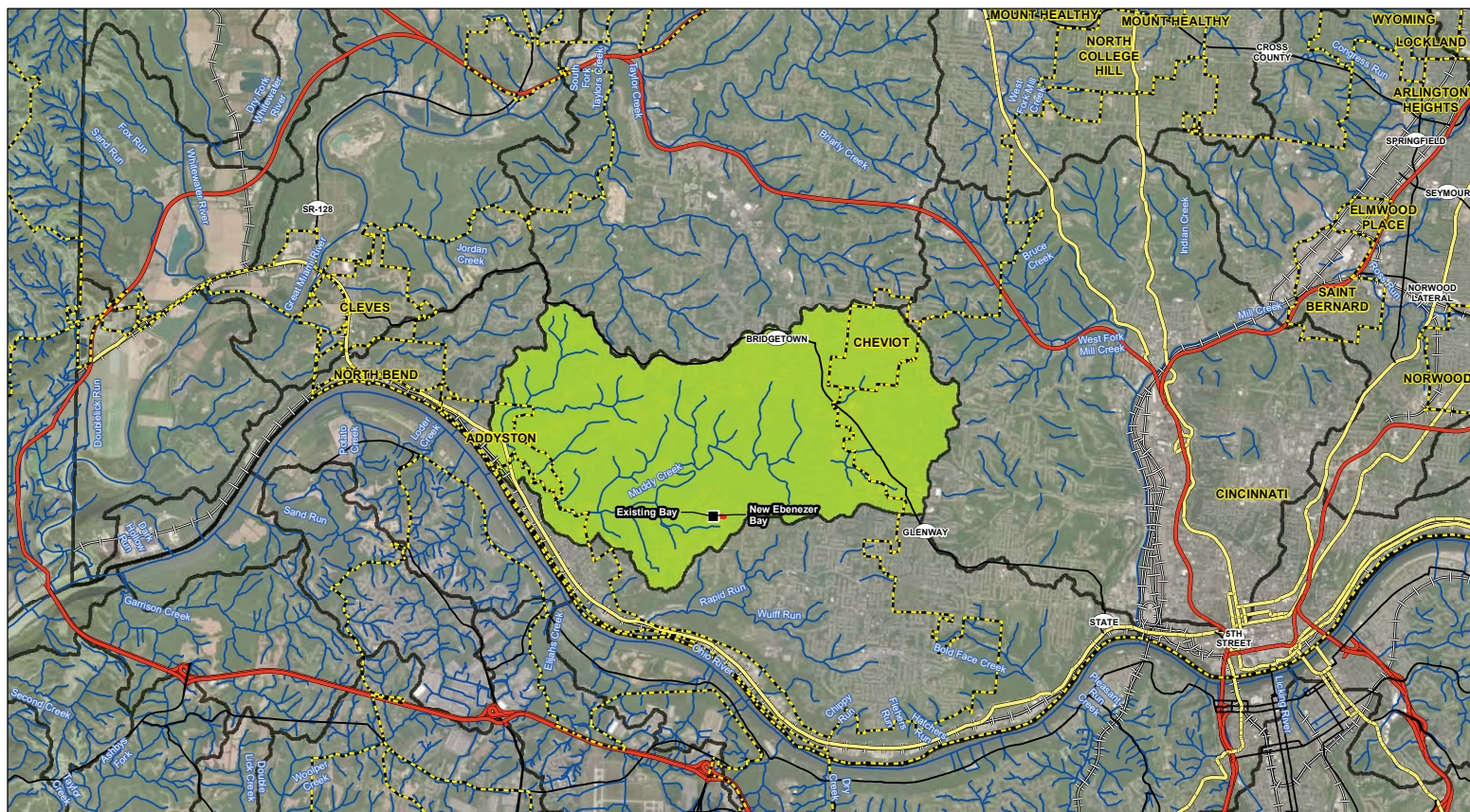
When all construction and ground disturbance activities have ceased, final stabilization has been documented, and all temporary erosion measures are removed, the NOT shall be submitted to the OEPA within 45 days. The NOT shall be also submitted to any other Local agencies that required review of the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

Appendix A

Figures



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

0 4,000 8,000 16,000 Feet

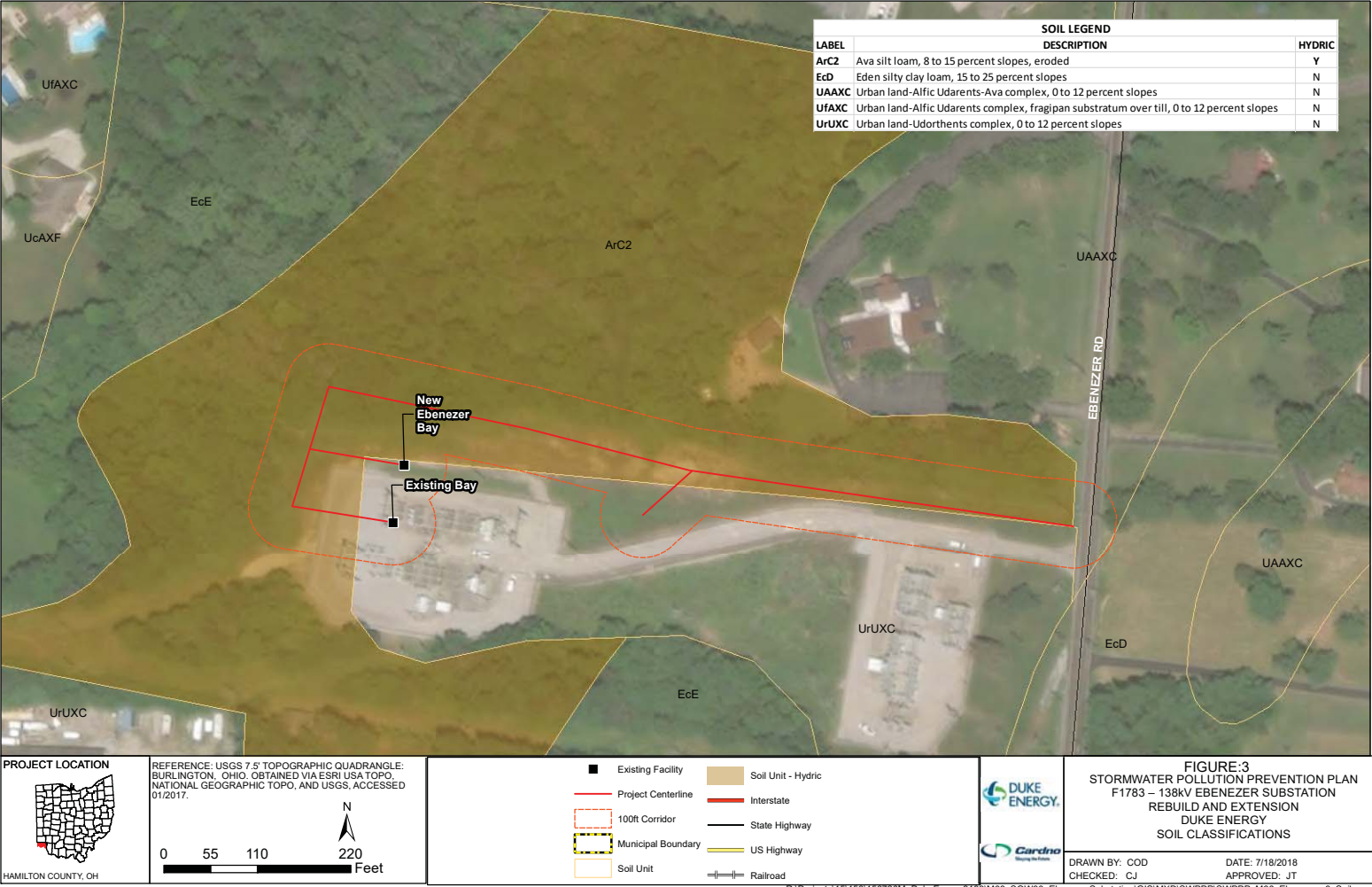
- Existing Facility
- Project Centerline
- Municipal Boundary
- Interstate
- State Highway
- US Highway
- Railroad
- NHD Flowline
- Adjacent Watersheds
- Muddy Creek



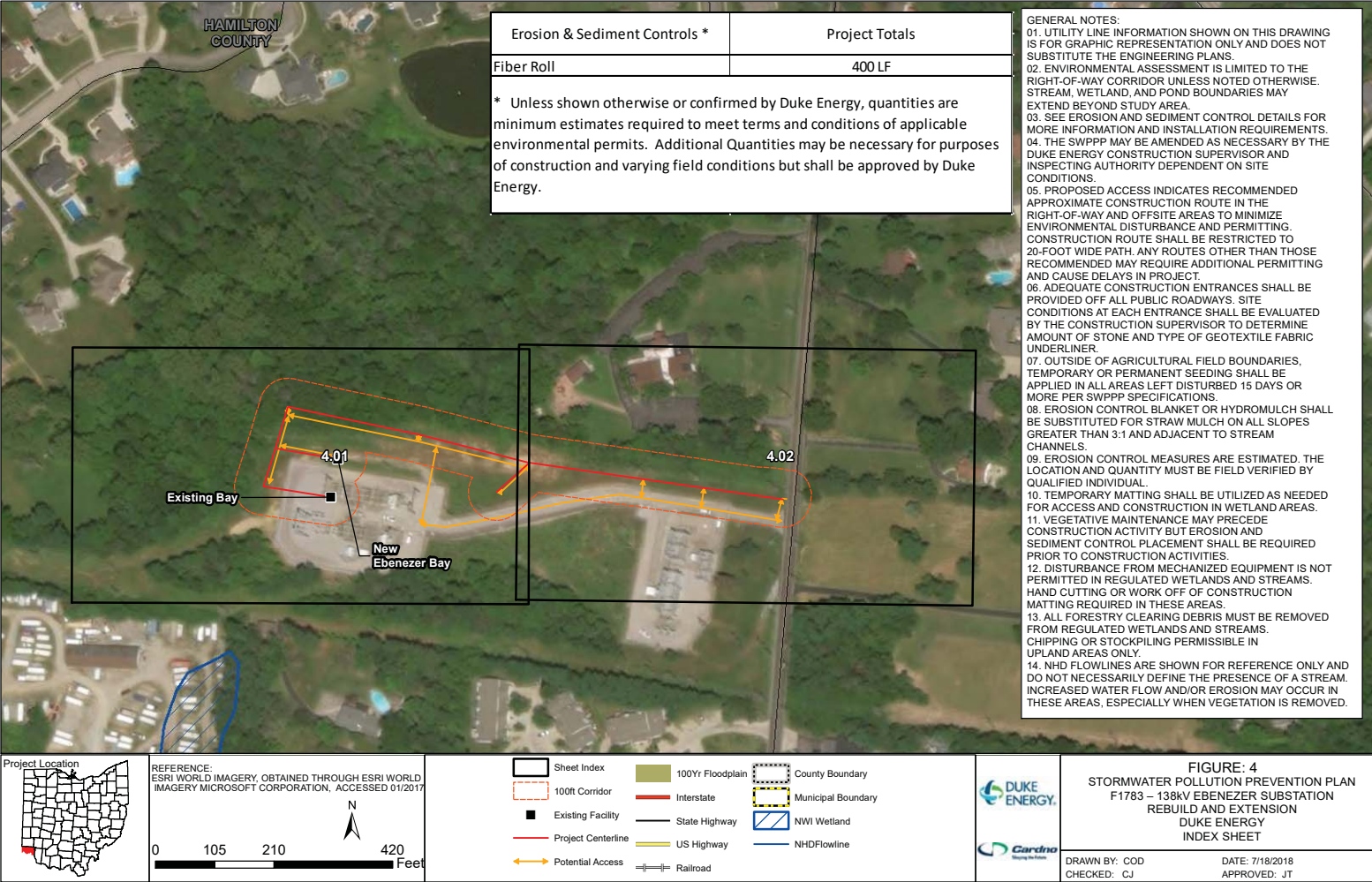
FIGURE 2
STORMWATER POLLUTION PREVENTION PLAN
F1783 - 138kV EBENEZER SUBSTATION
REBUILD AND EXTENSION
DUKE ENERGY
PROJECT AREA WATERSHEDS

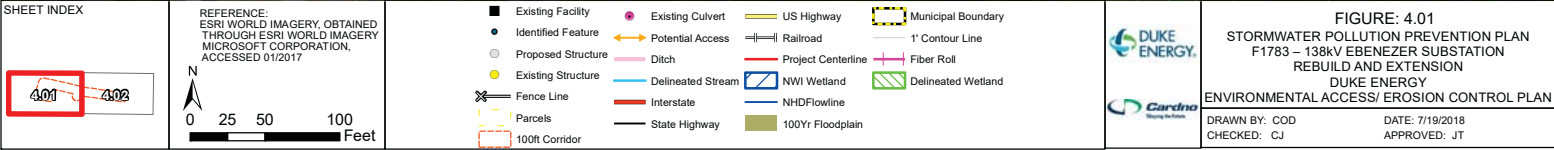
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 DATE: 7/19/2018
 APPROVED: JT

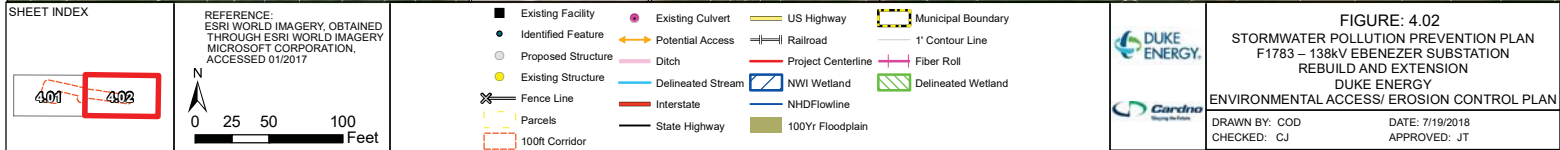
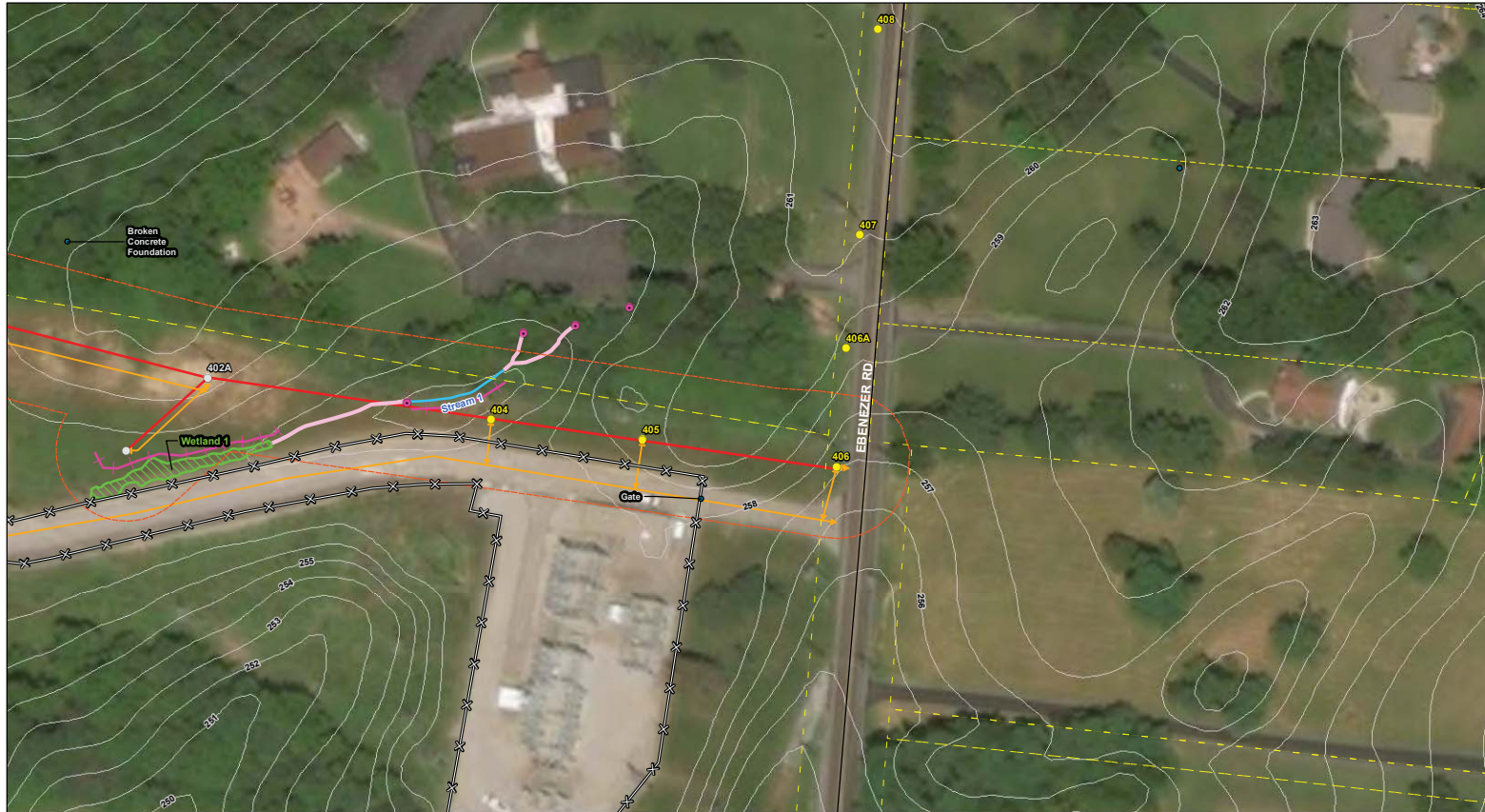
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Appendix B


Storm Water Pollution Prevention Plan Typical Details

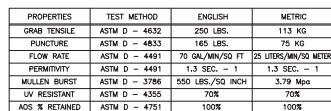
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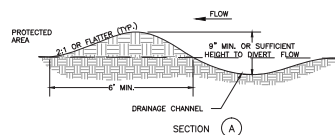
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REVISIONS				DESIGN BY	DATE	 STORM WATER POLLUTION PREVENTION PLAN TYPICAL DETAILS	SCALE
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*ALL PROPERTIES ARE MINIMUM AVERAGE ROLL VALUE

1. THE NECK OF THE FILTER BAG MUST BE TIGHTLY STRAPPED (MINIMUM TWO STRAPS) TO THE DISCHARGE HOSE.
2. THE FILTER BAG IS FULL WHEN IT IS NO LONGER CAN EFFICIENTLY FILTER THE DISCHARGE FLOW. THE BAG MUST BE REMOVED BEFORE IT OVERFLOWS.
3. FLOW RATES VARY DEPENDING ON THE SIZE OF THE DETERMINING DEVICE. AMOUNT OF SEDIMENT DISCHARGED INTO THE DETERMINING DEVICE DEPENDS ON THE SIZE OF THE DETERMINING DEVICE. THE SIZE OF THE FILTER BAG MUST BE SIZED TO ACCOMMODATE THE ANTICIPATED FLOW RATE. THE BAG MUST BE REMOVED BEFORE IT OVERFLOWS. IT CAN HANDLE FLOW RATES OF UP TO 1000 GALLONS PER MINUTE, BUT IT MUST BE REMOVED BEFORE IT OVERFLOWS.
4. USE OF EXCESSIVE FLOW RATES ON OVERFLOWING THE DETERMINING DEVICE CAN CAUSE RELEASE OF THE BAG OR FAILURE OF THE BAG.
5. THE FILTER BAG MUST BE REMOVED AND DISPOSED OF OFFSITE.
6. EACH STANDARD DETERMINING DEVICE SHALL HAVE A FULL SPOUT LEAKAGE CHECK TO ACCOMMODATE THE DISCHARGE HOSE. USE TWO STAINLESS STEEL BOLTS TO SECURE THE DISCHARGE HOSE TO THE DETERMINING DEVICE FROM ESCAPING WITHOUT FITTING.
7. THE DETERMINING DEVICE IS SHOWN BAG, WHICH IS SEAM WITH A DOUBLE NUTTED STITCHING USING A HIGH STRENGTH THREAD.
8. THE DETERMINING DEVICE SEAMS SHALL HAVE AN AVERAGE WIDE OF 1/4 INCH.
9. THE GEOTEKTYL FABRIC SHALL BE A NONWOVEN FABRIC WITH THE




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):

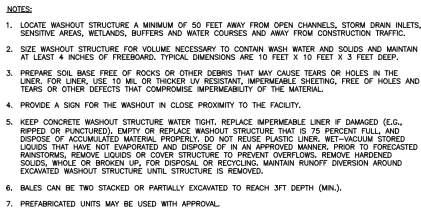
ROAD GRADE (%)	DISTANCE (FT.)
1	400
2	250
5	135
10	80
15	60
20	45

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 $\pm 2\%$ 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.

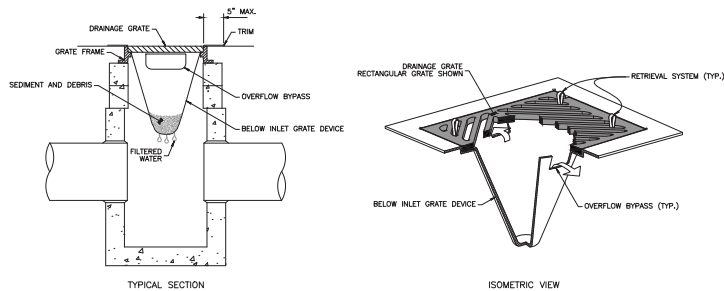
WATER BAR

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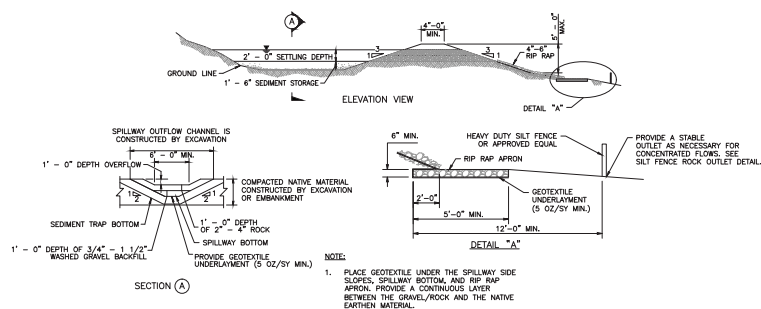
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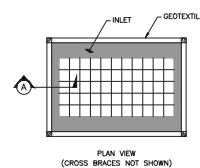
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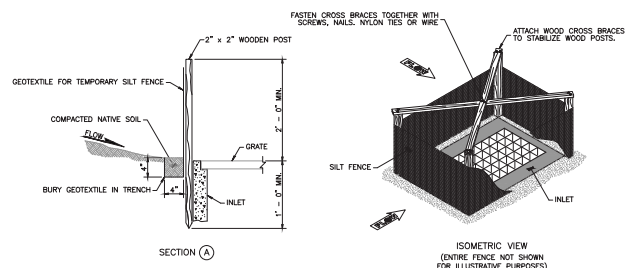
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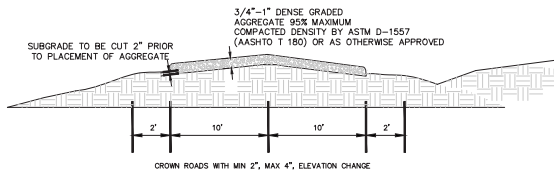


- NOTES:**
1. PREFABRICATED UNITS MAY BE USED WITH APPROVAL.
 2. STRUCTURE SHALL BE CONSTRUCTED SUCH THAT GEOTEXTILE MATERIAL SHALL BE FASTENED TO POSTS CREATING A SEAM-LESS JOINT.
 3. ENSURE THAT PONDING HEIGHT OF WATER DOES NOT CAUSE FLOODING ON ADJACENT ROADWAYS OR PRIVATE PROPERTY.



014

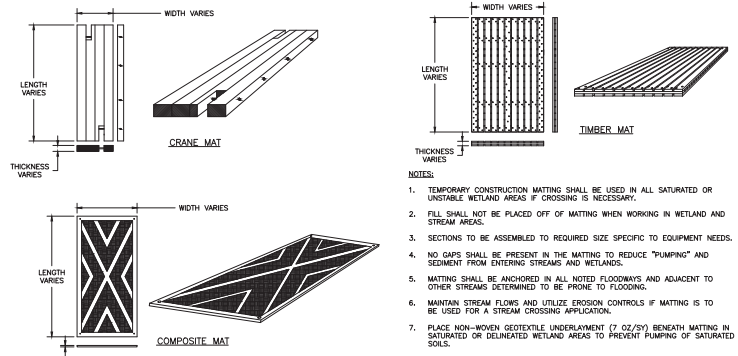
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NOTE:
1. VARYING FIELD CONDITIONS MAY WARRANT ALTERNATE AGGREGATE GRADATIONS.

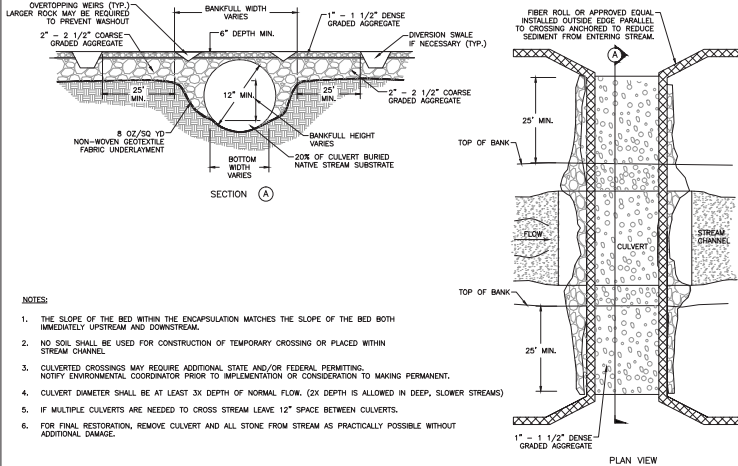
TEMPORARY ACCESS DRIVE

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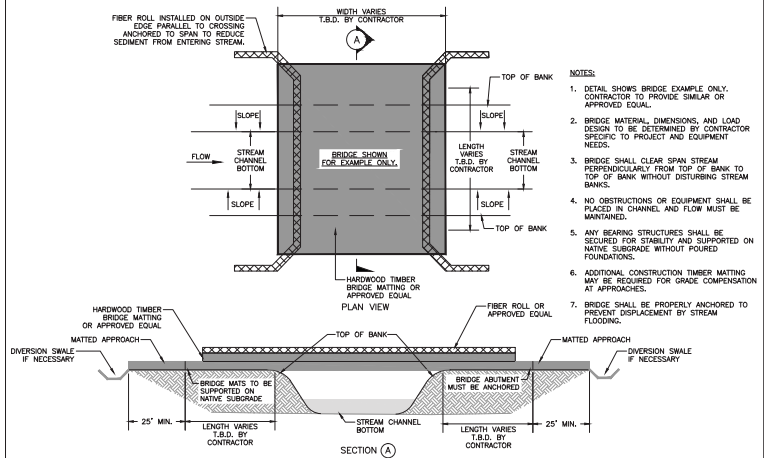
TEMPORARY CONSTRUCTION MATTING

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TEMPORARY CULVERT STREAM CROSSING

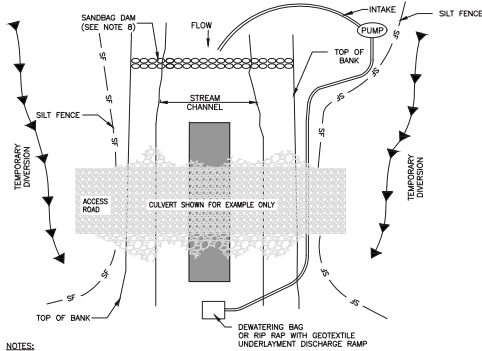
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TEMPORARY CLEAR SPAN BRIDGE CROSSING

018

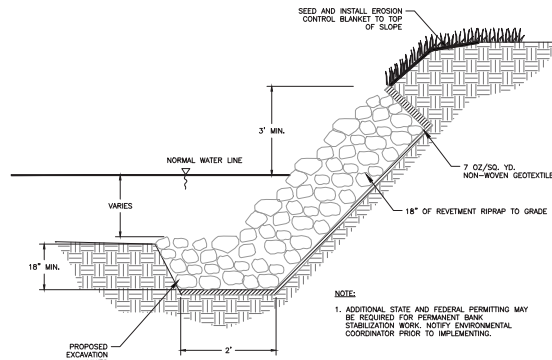
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- NOTES:**
1. INSTALL SILT FENCE, PUMP, DEWATERING BAG, AND SANDBAG DAM BEFORE TRENCHING STREAM.
 2. PUMP MUST BE OF SUFFICIENT CAPACITY TO CONVEY NORMAL AND/OR EXISTING STREAM FLOW OVER SANDBAG DAM. A BACK-UP PUMP OF EQUAL CAPACITY MUST BE AVAILABLE 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

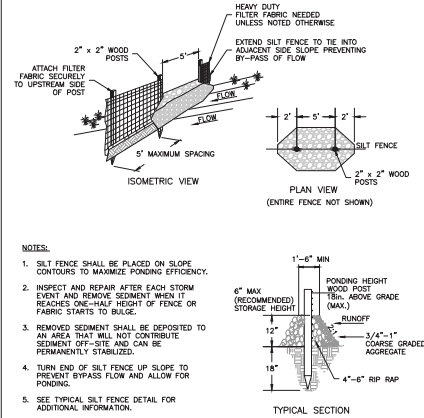
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- NOTES:**
1. ADDITIONAL STATE AND FEDERAL PERMITTING MAY BE REQUIRED FOR PERMANENT BANK STABILIZATION WORK. NOTIFY ENVIRONMENTAL COORDINATOR PRIOR TO IMPLEMENTING.

HARD ARMAMENT BANK STABILIZATION

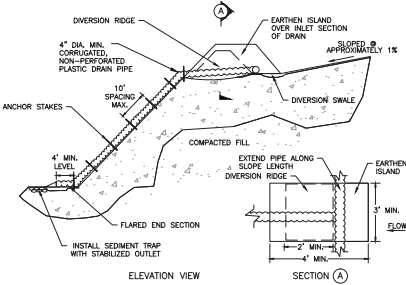
020



- 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

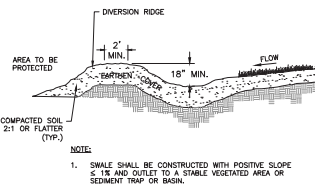
021



- NOTES:**
1. THE SLOPE DRAIN SHALL BE CONSTRUCTED/LENGTHENED WITH THE CONSTRUCTION OF THE FULL 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

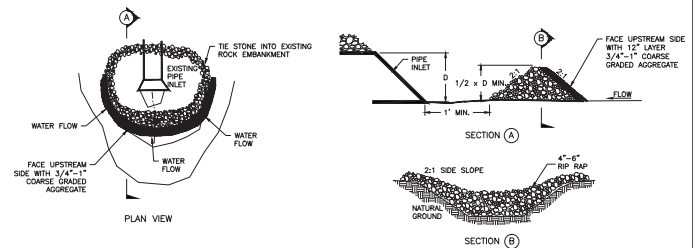
022



- NOTES:**
1. SWALE SHALL BE CONSTRUCTED WITH POSITIVE SLOPE $\leq 1\%$ AND OUTLET TO A STABLE VEGETATED AREA OR SEDIMENT TRAP OR BAY.

DIVERSION SWALE

023



ROCK PIPE INLET PROTECTION

024

REVISIONS				DESIGN BY	DATE	SCALE	
NO.	DATE	DESCRIPTION	APPROVED BY	CAM/MRW	12/18/2015	N.T.S.	
				DRAWN BY	JOB NO.	DRAWING NO.	
				KTH	--		
				CHECKED BY	APPROVED	SHEET	
				MRW	CAM	5 OF 5	



STORM WATER POLLUTION PREVENTION PLAN
TYPICAL DETAILS

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: F1783 – 138kV Ebenezer Substation Expansion	Evaluation Date:
Construction Supervisor:	Evaluated By:
Reason for Evaluation: <input type="checkbox"/> Routine <input type="checkbox"/> Post Rain Event <input type="checkbox"/> Non-Routine	
Location and Phase of Construction:	Conditions at time of evaluation? <input type="checkbox"/> Dry <input type="checkbox"/> Wet <input type="checkbox"/> Frozen

OBSERVATIONS	INSTALLED	CORRECTIVE ACTION NEEDED
Silt Fence	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Fiber Rolls/Filter Socks	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Check Dams	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Seeding/Mulching	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Erosion Control Blanket	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Construction Entrances	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Stream Crossings	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Wetland Crossings	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Concrete Washout Areas	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comment/Action:		
Is sediment or other pollutants leaving the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, corrective action is needed.	
Is sediment being tracked onto public roadways?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, corrective action is needed.	
Have any areas been left disturbed for 21 days or more?	<input type="checkbox"/> Yes <input type="checkbox"/> 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, (317) 838-2447, Amanda.Sheehe@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: F1783 – 138kV Ebenezer Substation Expansion

[illegible]

Appendix E

Local Reviewing Agency Approval



HAMILTON COUNTY EARTHWORK APPLICATION

Hamilton County Soil & Water Conservation District
1325 E. Kemper Rd, Ste 115, Cincinnati, OH 45246
ph (513) 772-7645 / fax (513) 772-7656
EMAIL: earthworkpermits@hamilton-co.org

APPLICATION NO.

DO NOT WRITE IN THIS SPACE

- 1. INSTRUCTIONS:** Legibly complete all applicable sections of this form. Depths of excavation and fill refer to mass earthwork sections, and should not include excavations or backfill for footings/foundations. Slopes are expressed in terms of ratio: horizontal to vertical (e.g. 3H:1V), and/or as a percentage. Earthwork quantities and import/export information should refer to mass earthwork quantities, not including aggregate for backfill and/or road base, or other construction materials. Use "?" if uncertain, "UNKN" if unknown, or describe on back.

DATE OF SUBMITTAL: _____ **PROJECT DESCRIPTION:** Duke Energy proposes to install four new steel structures within existing ROW to facilitate the expansion of the Ebenezer Substation.

NAME	STREET ADDRESS	CITY	STATE	ZIP	PHONE	EMAIL
A) Owner Duke Energy	1000 E Main Street	Plainfield	IN	46168	317-838-2447	amanda.sheehe@duke-energy.com
B) Developer N/A						
C) Applicant Duke Energy	1000 E Main Street	Plainfield	IN	46168	317-838-2447	amanda.sheehe@duke-energy.com
D) Contractor TBD						

2. PROJECT INFORMATION:

Is disturbed area greater than one (1) acre? NO ☒ YES ☐ If YES, what is total acreage disturbed: _____

Project Title: Ebenezer Substation Expansion Project Address: 1297 Ebenezer Road City/Twp: Cincinnati

3. EARTHWORK INFORMATION: (Complete parts A, B, C) --OR-- Initial here _____ for NO EARTHWORK REQUIRED (Proceed to Section 4)

A. EXCAVATION

- Volume of **EXCAVATION** (cubic yards): 8.88 CY
- Maximum depth of **Excavation**: 15 ft
- Existing Maximum Slope of Area to be **Excavated**: 0 H:V
- Proposed Maximum Slope of Area to be **Excavated**: 0 H:V

B. FILL

- Volume of **FILL** (cubic yards): 8.88 CY
- Maximum depth of **Fill**: 15 ft
- Existing Maximum Slope of Area to be **Filled**: 0 H:V
- Proposed Maximum Slope of Area to be **Filled**: 0 H:V

C. Will **EXPORT** or **IMPORT** be required: NO ☐ YES ☒ If YES: Volume: _____ CY Export / Import (Circle One)

Location of Borrow or Export site: _____

4. THE OWNER OF THE DEVELOPMENT, AND/OR UNDERSIGNED AS AGENT FOR THE OWNER, DO HEREBY COVENANT AND AGREE TO COMPLY WITH ALL LAWS OF THE STATE OF OHIO AND THE REGULATIONS OF THE COUNTY OF HAMILTON, PERTAINING TO EARTHWORK, AND INCLUDING SEDIMENT AND EROSION CONTROL, AND THAT THE SAID CONSTRUCTION WILL BE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS SUBMITTED HERewith, AND CERTIFY THAT THE INFORMATION AND STATEMENT GIVEN ON THIS APPLICATION ARE TRUE.

APPLICATION BY: Amanda Sheehe

(PRINT)

EMAIL: amanda.sheehe@duke-energy.com

SIGNATURE: _____

(SIGN)

TELEPHONE: 317-838-2447

PLEASE DO NOT WRITE BELOW THIS LINE

revn 7/14

EXEMPT _____

PERMIT REQUIRED _____

DATE _____

INITIALS _____

From: Aaron Habig
To: [Cori Jansing](#)
Cc: [Alberto, Marcelo](#)
Subject: RE: Duke Energy-Ebenezer Substation Expansion
Date: Monday, March 12, 2018 4:10:43 PM
Attachments: [image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)

Cori,

Yes, we have jurisdiction over all of the townships in Hamilton County. This project would require a plan submittal like the Oakley to Fairfax project.

Contact myself or Chey Alberto with any questions.

Thanks,

Aaron

From: Cori Jansing [mailto:cori.jansing@cardno.com]
Sent: Monday, March 12, 2018 16:05
To: Aaron Habig
Subject: Duke Energy-Ebenezer Substation Expansion

Hi Aaron,

I am currently working on the Ebenezer Substation Expansion project for Duke Energy located in Covedale CDP, Green Township, Ohio. Can you please clarify whether or not the HCSWCD has jurisdiction over this area and if activities associated with this project will require an Earthwork Permit through the Hamilton County Soil & Water Conservation District in addition to the Ohio EPA NPDES general construction permit. I currently estimate roughly 1 Ac. of ground disturbance and the construction of approximately four (4) new steel transmission single pole structures. I just want to make sure we advise Duke on the correct level of coordination, whether a local earthwork permit and/or General Construction NPDES permit is needed, and what if anything else is necessary for transmission line work in your jurisdiction.

Thanks for your ongoing help,

Cori

Corrine Jansing
PROJECT SCIENTIST
CARDNO



Office +1 513 489 2402 Direct +1 513 233 7034 Mobile +1 513 833 6392
Address 11121 Canal Rd., Cincinnati (Sharonville), Ohio 45241
Email cori.jansing@cardno.com Web www.cardno.com

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Appendix F

Notice of Termination



Notice of Termination (NOT) of Coverage Under Ohio Environmental Protection Agency General NPDES Permit Division of Surface Water

(Read accompanying instructions carefully before completing this form.)

Submission of this NOT constitutes notice that the party identified in Section II of this form is no longer authorized to discharge into state waters under the NPDES general permit program. NOTE: All necessary information must be provided on this form. Do not use correction fluid on this form. Forms transmitted by fax will not be accepted. There is no fee associated with submitting this form.

I. Permit Information:

NPDES General Permit Number: OH

Facility General Permit Number:

II. Owner/Applicant Information/Mailing Address

Company (Applicant) Name: Duke Energy

Mailing (Applicant) Address: 1000 E. Main Street

City: Plainfield State: Ohio Zip Code: 46168 - 8906

Contact Person: Amanda Sheehee Phone: (317) 838 - 2447 Fax: () -

Contact Email: Amanda.Sheehee@Duke-Energy.com

III. Facility/Site Location Information

Facility Name: F1783 Ebenezer Substation Expansion

Facility Address/Location: 1297 Ebenezer Road

City: Cincinnati State: Ohio Zip Code: 45233 -

County: Hamilton Township(s): 2E2N Section: 25

Facility Contact Person: Amanda Sheehee Phone: (317) 838 - 2447 Fax: () -

Facility Contact Email: Amanda.Sheehee@Duke-Energy.com

IV. Reason for Termination

Transfer of Ownership ☐ Cease to Discharge ☐ Facility Closed ☐

Project Completed ☐ Obtained Individual Permit ☐

V. Certifications

Standard Certification:

I certify under penalty of law that all discharges authorized by the NPDES general permit have been eliminated or that I am no longer the operator of the facility. I understand that by submitting this NOT, I am no longer authorized to discharge under this general permit and that discharging pollutants to waters of the state without an NPDES permit is unlawful under ORC 6111.

Name (typed): Title:

Signature: Date:

Industrial Storm Water and Coal Mining Activity Certification Only:

I certify under penalty of law that all discharges associated with the identified facility that are authorized by the above referenced NPDES general permit have been eliminated, that I am no longer the operator of the facility, or in the case of a coal mine that the SMCRA bond has been released by ODNR-Division of Reclamation. I understand that by submitting this NOT, I am no longer authorized to discharge storm water associated with industrial activity under this general permit, and that discharging pollutants in storm water associated with industrial activity to waters of the state is unlawful under ORC 6111 where the discharge is not authorized by an NPDES permit.

Name (typed): Title:

Signature: Date:

Storm Water Construction Activity Certification Only:

For non-residential developments, I certify under penalty of law that, prior to the submittal of this NOT, all elements of the storm water pollution prevention plan have been completed, the disturbed soil at the identified facility have been stabilized and temporary erosion and sediment control measures have been removed at the appropriate time, or all storm water discharges associated with construction activity from the identified facility that are authorized by the above referenced NPDES general permit have otherwise been eliminated.

For residential developments only, I certify under penalty of law that, prior to the submittal of this NOT, either (i) temporary stabilization has been completed and the lot, which includes a home, has been transferred to the homeowner; (ii) final stabilization has been completed and the lot, which does not include a home, has been transferred to the property owner; or (iii) no stabilization has been implemented on a lot, which includes a home, and the lot has been transferred to the homeowner.

I understand that, by submitting this NOT, I am no longer authorized to discharge storm water associated with construction activity by the general permit, and that discharging pollutants in storm water associated with construction activity to waters of the state is unlawful under ORC 6111 where the discharge is not authorized by an NPDES permit.

Name (typed): Title:

Signature: Date:

Attachment F

Agency Coordination Letters



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldrige, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

September 18, 2018

Cori Jansing
Cardno
11121 Canal Road
Cincinnati, Ohio 45241

Re: 18-869; Environmental Review Request, Duke Energy Ebenezer Substation

Project: The proposed project involves the installation of approximately 0.2 miles of new transmission line, encompassing a total study corridor of 2.4 acres of existing 100-foot wide Duke Energy transmission line corridor Right-of-Way to facilitate the expansion of the Ebenezer Substation.

Location: The proposed project is in Greene Township, Hamilton County, Ohio.

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

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

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

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

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between May 15 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the sheepsnout (Plethobasus cyphus), a state endangered and federally endangered mussel, the fanshell (Cyprogenia stegaria), a state endangered and federally endangered mussel, the pink mucket (Lampsilis orbiculata), a state endangered and federally endangered mussel, the rayed bean (Villosa fabalis), a state endangered and federally endangered mussel, the snuffbox (Epioblasma triquetra), a state endangered and federally endangered mussel, the ebonyshell (Fusconaia ebena), a state endangered mussel, the long-solid (Fusconaia maculata maculata), a state endangered mussel, the butterfly (Ellipsaria lineolata), a state endangered mussel, the washboard (Megaloniais nervosa), a state endangered mussel, the elephant-ear (Elliptio crassidens crassidens), a state endangered mussel, the Ohio pigtoe (Pleurobema cordatum), a state endangered mussel, the monkeyface (Quadrula metanevra), a state endangered mussel, the wartyback (Quadrula nodulata), a state endangered mussel, the black sandshell (Ligumia recta), a state threatened mussel, the fawnsfoot (Truncilla donaciformis), a state threatened mussel, and the threehorn wartyback (Obliquaria reflexa), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the shortnose gar (Lepisosteus platostomus), a state endangered fish, the shoal chub (Macrhybopsis hyostoma), a state endangered fish, the shovelnose sturgeon (Scaphirhynchus platyrhynchus), a state endangered fish, the lake sturgeon (Acipenser fulvescens), a state endangered fish, the northern madtom (Noturus stigmosus), a state endangered fish, the bigeye shiner (Notropis boops) a state threatened fish, the mountain madtom (Noturus eleutherus), a state threatened fish, the river darter (Percina shumardi) a state threatened fish, the channel darter (Percina copelandi), a state threatened fish, the blue sucker (Cycleptus elongatus), a state threatened fish, and the paddlefish (Polyodon spathula) a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the cave salamander (*Eurycea lucifuga*), a state endangered species. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the lark sparrow (*Chondestes grammacus*), a state endangered bird. This sparrow nests in grassland habitats with scattered shrub layers, disturbed open areas, as well as patches of bare soil. In the Oak Openings area west of Toledo, lark sparrows occupy open grass and shrubby fields along sandy beach ridges. These summer residents normally migrate out of Ohio shortly after their young fledge or leave the nest. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Sloan's crayfish (*Orconectes sloanii*), a state threatened species. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

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

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

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

Benjamin Mannies

From: Cori Jansing <cori.jansing@cardno.com>
Sent: Monday, September 24, 2018 6:35 AM
To: Danielle Thompson
Subject: FW: Cardno #F1783 Ebenezer Substation Expansion, Hamilton Co. OH

Corrine Jansing

PROJECT SCIENTIST

CARDNO

Office +1 513 489 2402 Direct +1 513 233 7034 Mobile +1 513 833 6392

Address 11121 Canal Rd., Cincinnati (Sharonville), Ohio 45241

Email cori.jansing@cardno.com Web www.cardno.com

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From: susan_zimmermann@fws.gov <susan_zimmermann@fws.gov> **On Behalf Of** Ohio, FW3
Sent: Tuesday, August 7, 2018 11:40 AM
To: Cori Jansing <cori.jansing@cardno.com>
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: Cardno #F1783 Ebenezer Substation Expansion, Hamilton Co. OH



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



TAILS# 03E15000-2018-TA-1823

Dear Ms. Jansing,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the 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. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed 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 travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) 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 and abandoned mines.

Should the proposed site contain trees ≥ 3 inches dbh, we recommend that trees be saved 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 that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being 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, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

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

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

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@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,

A handwritten signature in blue ink, appearing to read "Scott Pruitt", is positioned above the printed name.

Scott Pruitt
Acting Field Office Supervisor

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

Attachment G

Regulated Waters Delineation Report

Regulated Waters Delineation Report

F1783 – 138kV Ebenezer Substation Expansion

Green Township, Hamilton County, Ohio

October 16, 2018



Document Information

Prepared for Duke Energy
Client Contact Amanda Sheehe
Project Name F1783 – 138kV Ebenezer Substation Expansion
Project Number Cardno #J156720M68
Duke # T1504TL1
Project Manager Cori Jansing
Date October 16, 2018

Prepared for:



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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 System
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 at the F1783 – 138kV Ebenezer Expansion project in Green Township, Hamilton County, Ohio. This task was performed on March 5, 2018. Table 1-1 summarizes the location of the project based on the Public Land Survey Section (PLSS) data.

Table 1-1 PLSS within the F1783 – 138kV Ebenezer Expansion Study Area

Township	Range	Section
2E	2N	25

The total size of the Study Area was approximately 3.1 acres. The Study Area consisted of a mix of habitats including commercial/industrial turf, secondary growth deciduous forest, and maintained right-of-way (ROW).

This report identifies the jurisdictional status of 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. § 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. § 706(2).”

Until further notice, the June 29, 2015 WOTUS Rule is not in effect. Furthermore, this report does not attempt to include a professional opinion as it relates to the June 29, 2015 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: Eastern Mountains and Piedmont Region (Environmental Laboratory, 2012) 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 Eastern Mountains and Piedmont 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, Technical Descriptions and datasheets are provided in the Appendix B.

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 1) did not identify any wetland complexes within the Study Area.

3.1.2 National Hydrography Dataset

The NHD dataset (Figure 4) did not identify surface waters within the Study Area.

3.1.3 Soil Survey

The NRCS Soil Survey identified five (5) soil series within the project 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 3-2 Soil Map Units within the F1783 – 138kV Ebenezer Substation Expansion Study Area

Symbol	Description	Hydric
ArC2	Ava silt loam, 8 to 15 percent slopes, eroded	Y
EcD	Eden silty clay loam, 15 to 25 percent slopes	N
UAAXC	Urban land-Alfic Udarents-Ava Complex, 0 to 12 percent slopes	N
UfAXC	Urban land-Alfic Udarents complex, fragipan substratum over till, 0 to 12 percent slopes	N
UrUXC	Urban land-Udorthents complex, 0 to 12 percent slopes	N

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: Eastern Mountains and Piedmont Region* (Environmental Laboratory, 2012) as required by current USACE policy.

Prior to the field work, 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

Complete stream field data sheets from the site investigation are located in Appendix B and wetland field data sheets are located in Appendix C for the Duke Energy F1783 – 138kV Ebenezer Substation Expansion. The project included the review of an approximate 3.1 acre Study Area, centered on existing and proposed overhead electric transmission line ROW and existing substation infrastructure located in Green Township, Hamilton County, Ohio (see Figure 1). The F1783 Ebenezer Substation Expansion project initiates at Duke Energy Structure HL-406 located west of Ebenezer Road, east of Wexford Lane, north of Cleves Warsaw Pike and south of Devils Backbone Road (39.122276, -84.652194) and terminates at Duke Energy Ebenezer Substation located west of Ebenezer Road, east of Wexford Lane, north of Cleves Warsaw Pike and south of Devils Backbone Road (39.122232, -84.655009). The Study Area consisted of a mix of habitats including commercial/industrial turf, secondary growth deciduous forest, and maintained ROW. The project Study Area is located entirely within Muddy Creek watershed (14-digit HUC 05090203-020-040).

4.2.1 Wetland and Stream Descriptions

Stream 1 (UNT to Muddy Creek) (74 linear feet within the Study Area)

Stream 1 was an ephemeral stream that flowed west through the project Study Area. This stream was at base flow conditions at the time of the stream survey. The dominant substrates were sand and silt. Bank Full width was approximately two feet and depth was one foot. The maximum pool depth observed was less than two inches. Stream 1 flows directly into a culvert within the Study Area. Though the culvert outlet was not directly observed, it is our best professional judgement based on desktop review and topography that this culvert flows off site into an unnamed tributary to Muddy Creek, which flows into Muddy Creek, a Traditional Navigable Water. Due to this connection, this stream should be considered a jurisdictional water of the United States. The HHEI score for Stream 1 was 22, categorizing the stream as a Modified Class I Primary Headwater Habitat.

Wetland 1 (Palustrine Emergent Wetland) (0.02 acres within the Study Area)

Wetland 1 was palustrine emergent wetland located near Stream 1 (UNT to Muddy Creek). This wetland appeared to be hydraulically connected to a jurisdictional water of the United States. The ORAM score for Wetland 1 was 22, categorizing the wetland as a category 2, or moderate quality, wetland.

Dominant vegetation in the vicinity of Wetland 1 DP01 included Lamp Rush (*Juncus effusus*, FACW). In addition, non-dominant vegetation observed included Broom-Sedge (*Andropogon virginicus*, FACU), Gray Dogwood (*Cornus racemosa*, FAC), and Small White Aster (*Symphyotrichum lateriflorum*, FACW). The plants at this data point qualified as hydrophytic vegetation. The soil from 0-3" had a matrix soil color of 10YR 4/2 with concentrations in the matrix at 15%, and a texture of Clay Loam. The soil from 3-18" had a matrix soil color of 10YR 5/2 with concentrations in the matrix at 15%, and a texture of Clay Loam. The soil at the data point was mapped as Urban land-Udorthents complex, 0 to 12 percent slopes (UrUXC), and met the Depleted Matrix (F3) hydric soil criterion. The indicators of hydrology observed included High Water Table (A2), and the FAC-Neutral Test (D5). This data point qualified as a wetland.

4.3 Endangered, Threatened and Rare Species

The potential for listed species known to occur within Hamilton County were evaluated based on the habitat observed within the Study Area. 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.

Tables summarizing the results of ETR species as they relate to the habitat observed within the Study Area are included with this report.

4.3.1 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). Correspondence from USFWS regarding Indiana Bat and Northern Long-eared Bat is included within Appendix D.

The entire project 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, suitable bat roost habitat was observed within the approximate 0.89 acre of the Study Area that consisted of secondary growth forest located outside the actively maintained ROW. Dominant canopy species included Sugar Maple (*Acer saccharum*), Black Cherry (*Prunus serotina*), White Ash (*Fraxinus americana*), Common Hackberry (*Celtis occidentalis*), American beech (*Fagus grandifolia*), and American Sycamore (*Platanus occidentalis*), Black Walnut (*Juglans nigra*), and Black Locust (*Robinia pseudoacacia*). Average diameter at breast height (DBH) for these canopy species was approximately ten (10) to twelve (12) inches with a maximum of approximately 24 inches. Understory vegetation was dominated by dense Amur Honeysuckle (*Lonicera maackii*), Multiflora Rose (*Rosa multiflora*) and saplings of the canopy species.

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 (NWP) 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 (NWP) 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 §401 Water Quality Certification must be received before the USACE can issue any §404 Department of the Army Permit. The OEPA must issue Individual §401 WQC for all Individual §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 F1783 – 138kV Ebenezer Substation Expansion Study Area on March 5, 2018.

6.1.1 Wetlands and Waterways

One (1) emergent wetland and one (1) ephemeral stream were identified within the F1783 – 138kV Ebenezer Substation Expansion Study Area.

Table 6-1 Features Identified within the F1783 – 138kV Ebenezer Substation Expansion Study Area

Feature Name	USGS/ NWI Identified	Feature Class	Regulatory Status ¹	Riffles / Pools	Dimensions (ft)		Substrate	QHEI/HHEI/ ORAM Score	Linear Footage (LF)	Acreage (AC)
					Width	Depth				
Stream 1	No	Ephemeral	Jurisdictional	No	2	1	G-Sa	22	74	.003
Wetland 1	No	PEM	Jurisdictional	N/A	N/A	N/A	N/A	22	N/A	.02
Totals			Streams		Ephemeral		74 LF		0.003	

Table 6-1 Features Identified within the F1783 – 138kV Ebenezer Substation Expansion Study Area

Feature Name	USGS/ NWI Identified	Feature Class	Regulatory Status ¹	Riffles / Pools	Dimensions (ft)		Substrate	QHEI/HHEI/ ORAM Score	Linear Footage (LF)	Acreage (AC)
					Width	Depth				
Stream 1	No	Ephemeral	Jurisdictional	No	2	1	G-Sa	22	74	.003
Wetland 1	No	PEM	Jurisdictional	N/A	N/A	N/A	N/A	22	N/A	.02
			Wetlands		PEM	JD	---			0.02

¹ Regulatory Status is based on our “professional judgment” on experience; however, the USACE makes the final determination.

6.1.2 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 Hamilton County and their potential to occur within the Study Area based on their habitat requirements and field observations.

Correspondence with the ODNR DOW and the USFWS regarding RTE species located within a ½-mile of the Study Area was sent July 16, 2018. Results from the USFWS were received on August 7, 2018. Results from the ODNR DOW were received on September 18, 2018. The copies of the correspondence letters are located in Appendix D.

6.1.3 Indiana Bat and Northern Long-eared Bat Roost Habitat

Suitable bat roost habitat was observed within the approximate 0.89 acre portion of the Study Area which consisted of secondary growth forest located outside the actively maintained ROW.

However, based on our current project understanding and our best professional judgment, we do not recommend any further survey options for this site at this time if the USFWS recommendation that all tree clearing activities shall occur between October 1 and March 31 is adhered to. Additionally, it does not appear that a Federal Nexus requiring further coordination with the USFWS will occur, as there are no expected impacts to wetlands or streams.

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. Correspondence with the USFWS and ODNR regarding RTE located within a ½-mile of the Study Area were sent July 16, 2018. Results from the ODNR was received on September 19, 2018 and results from the USFWS was received on August 7, 2018. This correspondence is located in Appendix D.

6.2 Conclusion

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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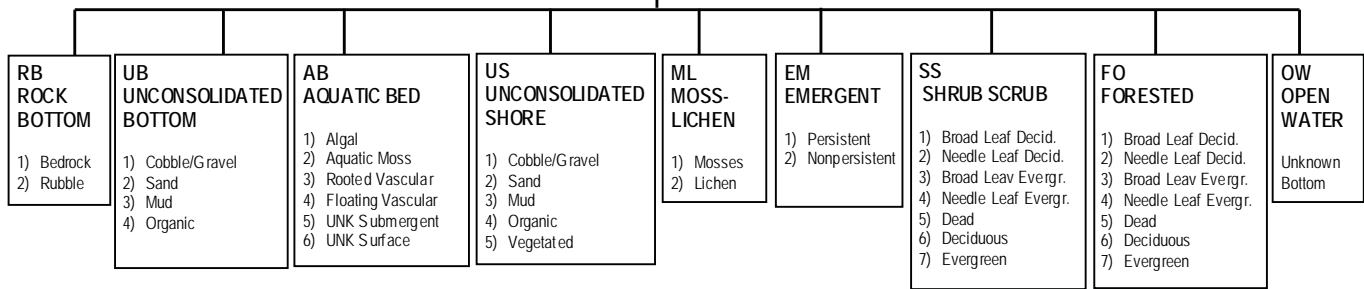
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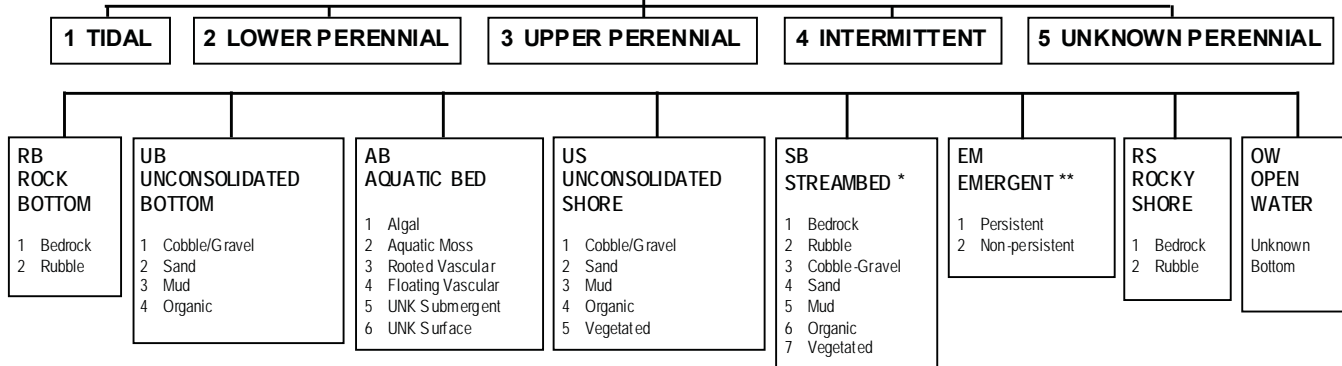
FIGURES

FRESHWATER WETLAND CLASSIFICATION

P—PALUSTRINE



R—RIVERINE



MODIFYING TERMS

In order to more adequately describe wetland and aquatic habitats water regime, water chemistry, soil of special modifiers may be applied.

WATER REGIME		WATER CHEMISTRY		SOIL	SPECIAL MODIFIERS
NON-TIDAL		INLAND SALINITY pH MODIFIERS FOR FRESHWATER			
A Temporarily Flooded	J Intermittently Flooded	7 Hypersaline	a Acid	g Organic	b Beaver
B Saturated	K Artificially Flooded	8 Eusaline	t Circumneutral	n Mineral	d Partially Drained/Ditched
C Seasonally Flooded	W Intermittently Flooded/ Temporary	9 Mixosaline	i Alkaline		f Farmed
D Seasonally Flooded/ Well-Drained	Y Saturated/Semipermanent/ Seasonal	0 Fresh			h Diked/Impounded
E Seasonally Flooded/Saturated	Z Intermittently Exposed/ Permanent				r Artificial Substrate
F Semipermanently Flooded	U Unknown				s Spoil
G Intermittently Exposed					x Excavated
H Permanently Flooded					

Dominance types must be added by users.

Classification of wetland and deepwater habitats of the U.S. Cowardin et. al. 1979 as modified for national wetland inventory mapping conventions.

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

Figure 2: NWI KEY
REGULATED WATERS DELINEATION REPORT
F1783 - 138kV EBENEZER SUBSTATION EXPANSION
DUKE ENERGY
HAMILTON COUNTY, OHIO

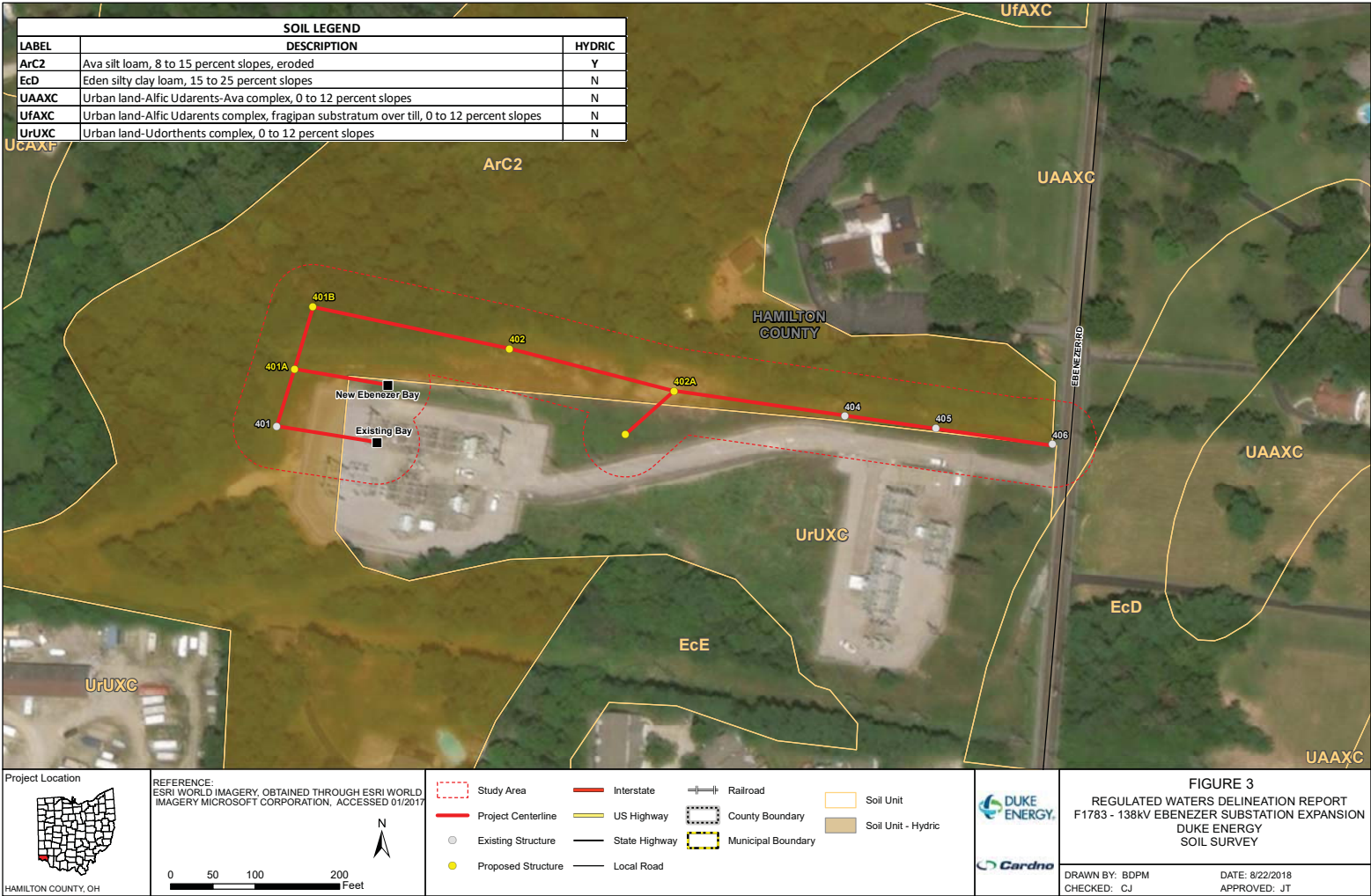
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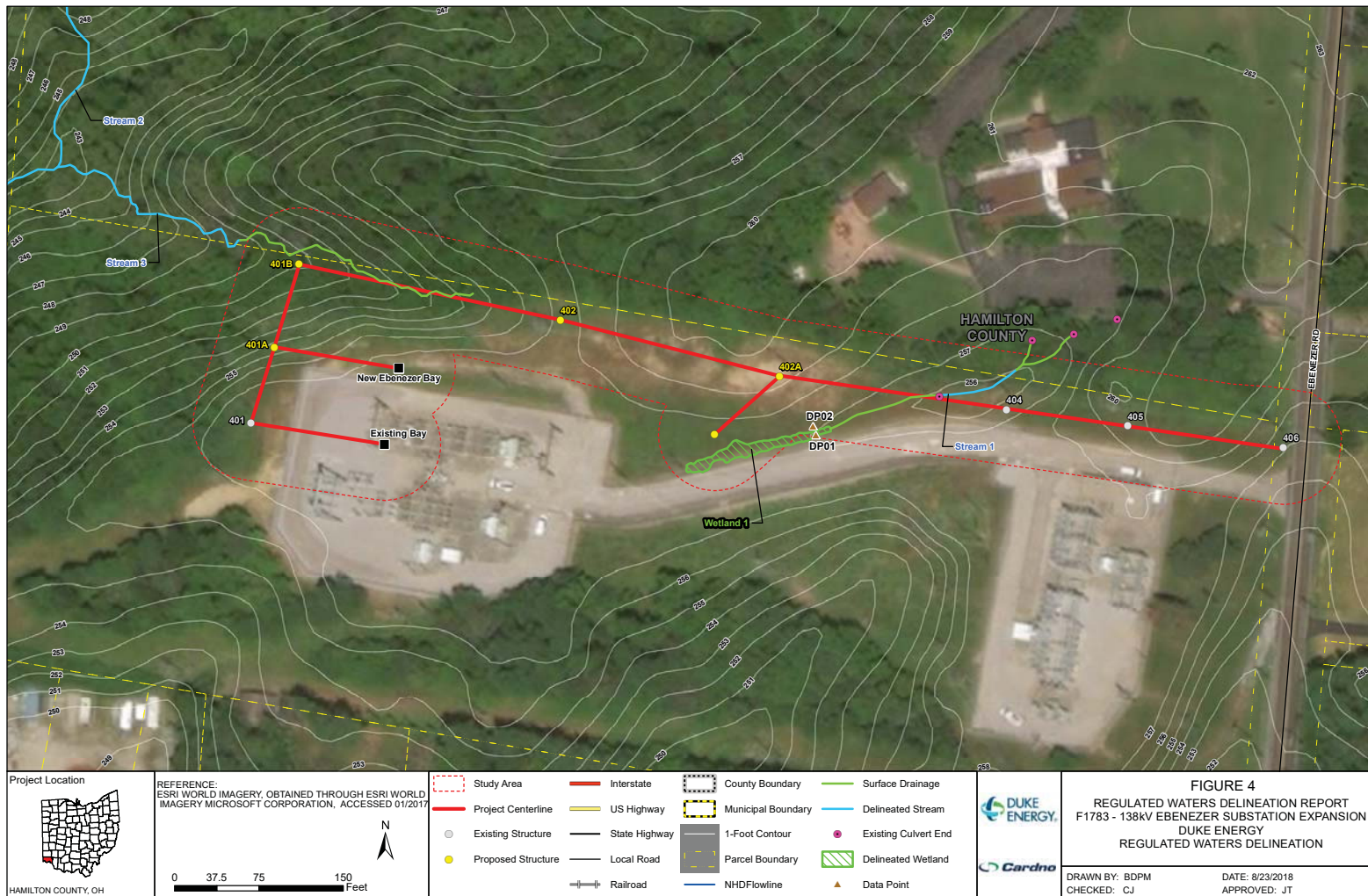
Project No.
J156720M68

Date Created: 8/22/2018 Date Revised: 8/22/2018 File Path: R:\Projects\15156\156720M_DukeEnergy\9193\M68_SOW30_EbenzerSubstation\GIS\WDX\Delineation\20180822_D2_M68_NWI_KeY.mxd
 Data Sources:

Saved By: ben.mannies

SOIL LEGEND		
LABEL	DESCRIPTION	HYDRIC
ArC2	Ava silt loam, 8 to 15 percent slopes, eroded	Y
EcD	Eden silty clay loam, 15 to 25 percent slopes	N
UAAXC	Urban land-Alfic Udarents-Ava complex, 0 to 12 percent slopes	N
UfAXC	Urban land-Alfic Udarents complex, fragipan substratum over till, 0 to 12 percent slopes	N
UrUXC	Urban land-Udorthents complex, 0 to 12 percent slopes	N





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APPENDIX

A

SITE PHOTOGRAPHS



Photo 1. Stream 1, ephemeral, facing upstream.



Photo 2. View of Stream 1 as it enters a culvert.



Photo 3. Wetland 1, located adjacent the existing.



Photo 4. Overview of secondary growth forest vegetation assemblage.

Project Number:
J156720M08

Site Photographs

Duke Energy — F1783 Ebenezer Substation
Greene Township, Hamilton County, Ohio
ETR Consultation





Photo 5. Overview of the project study area, facing east.



Photo 6. Overview of the project study area, facing west.



Photo 7: Overview of the project study area, facing north.



Photo 8: View of the existing substation.

Project Number:
J156720M568

Site Photographs

Duke Energy — F1783 Ebenezer Substation
Greene Township, Hamilton County, Ohio
ETR Consultation



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F1783 – 138kV Ebenezer Substation
Expansion

APPENDIX

B

OHIO HHEI FORMS



Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) :

22

SITE NAME/LOCATION Ebenezer Substation Expansion
SITE NUMBER S 1 RIVER BASIN Muddy Creek DRAINAGE AREA (mi²) <1
LENGTH OF STREAM REACH (ft) 74 LAT 39.1224 LONG -84.652700 RIVER CODE RIVER MILE
DATE 3/5/2018 SCORER C. Jansing COMMENTS

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

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

1. SUBSTRATE (Est. % of every type of substrate present. Check ONLY 2 predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is A + B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]		<input checked="" type="checkbox"/> SILT [3 PTS]	60
<input type="checkbox"/> BOULDER (>256mm) [16 pts]		<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 PTS]	
<input type="checkbox"/> BEDROCK [16 PTS]		<input type="checkbox"/> FINE DETRITUS [3 PTS]	
<input type="checkbox"/> COBBLE (65-256mm) [12 pts]		<input type="checkbox"/> CLAY or HARDPAN [0 PT]	
<input type="checkbox"/> GRAVEL (2-64mm) [9 pts]	19	<input type="checkbox"/> MUCK [0 PT]	
<input checked="" type="checkbox"/> SAND (<2mm) [6 pts]	21	<input type="checkbox"/> ARTIFICIAL [3 PTS]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, & Bedrock 0 (A)

9

(B)

3

SCORE OF 2 MOST PREDOMINANT SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

12

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61m (200') evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> >30 centimeters [20 pts]	<input type="checkbox"/> >5 cm - 10 cm [15 pts]
<input type="checkbox"/> >22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> <5 cm [5 pts]
<input type="checkbox"/> >10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

3

Pool Depth
Max = 30

5

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> >4.0 meters (>13') [30 pts]	<input type="checkbox"/> >1.0 m - 1.5 m (>3'3" - 4'8") [15 pts]
<input type="checkbox"/> >3.0 m - 4.0 m (>9'7" - 13') [25 pts]	<input checked="" type="checkbox"/> ≤1.0 m (≤ 3'3") [5 pts]
<input type="checkbox"/> >1.5 m - 3.0 m (>4'8" - 9'7") [20 pts]	

COMMENTS

AVERAGE BANKFULL WIDTH (meters)

0.6

Bankfull
Width
Max = 30

5

This information must also be completed

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

L	R	RIPARIAN WIDTH (Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

Comments

Stream was partially within maintained overhead electric ROW

L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Immature Forest, Shrub, or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

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

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

Comments

Flows in to culvert within study area near existing embankment (road) leading to existing substation

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

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

STREAM GRADIENT ESTIMATE

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

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):**S 1**QHEI PERFORMED? ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Muddy Creek Distance from Evaluated Stream 1.4 miles

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Hamilton County Township/City: Green Township

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: _____ Quantity: _____

Photographer Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 90

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. And attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream? (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impact: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Hedwater Habitat Assessment Manual)

Fish observed? (Y/N) N Voucher(Y/N) N Salamander Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher(Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

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

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

FLOW →

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Expansion

APPENDIX

C

OHIO RAPID ASSESSMENT METHOD 5.0
FORM AND USACE WETLAND
DELINEATION DATA SHEETS

Site: Wetland 1	Rater(s): C. Jansing	Date: March 5, 2018
-----------------	----------------------	---------------------

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)
☒ <0.1 acres (0.04ha) (0 pts)

Project: F1783 - 138kV EBENEZER SUBSTATION EXPANSION

3	3
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

8	11
max 30 pts.	subtotal

Metric 3. Hydrology

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

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

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

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

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

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

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)

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

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

Check all disturbances observed

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

7.5	19
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

19

subtotal this page

Site: Wetland 1	Rater(s): C. Jansing	Date: March 5, 2018
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3

subtotal this page

0

0

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, interspersions, microtopography.

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)
- ☐ None (0)

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but 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

22

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:

Wetland 01 is a localized depressional impoundment adjacent to an existing drive leading to an existing overhead electric substation. A portion of the wetland is within and/or abutting the actively maintained overhead electric ROW.

Project/Site:	F1783 - 138kV Ebenezer Substation Expansion		City/County:	Green Township, Hamilton County		Sampling Date:	3/5/2018	
Applicant/Owner:	Duke Energy			State:	OH		Sampling Point:	DP01
Investigator(s):	C. Jansing			Section, Township, Range:	Section 25, Township 2E, Range 2N			
Landform (hillslope, terrace, etc.):	Slough			Local relief (concave, convex, none):	concave			
Slope (%):	2%	Lat:	39.122279	Long:	-84.653659	Datum:	NAD83 UTM16N	
Soil Map Unit Name:	Urban land-Udorthents complex, 0 to 12 percent slopes (UrUXC)					NWI classification:	N/A	
Are climatic / hydrologic conditions on the site typical for this time of year?				Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/> (If no, explain in Remarks.)	
Are Vegetation	<input type="checkbox"/>	Soil	<input type="checkbox"/>	or Hydrology	<input type="checkbox"/>	significantly disturbed?	Are "Normal Circumstances" present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Are Vegetation	<input type="checkbox"/>	Soil	<input type="checkbox"/>	or Hydrology	<input type="checkbox"/>	naturally problematic?	(If needed, explain any answers in Remarks.)	

Hydrophytic Vegetation Present?	Yes	X	No		Is the Sampled Area within a Wetland? If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes	X	No		
Wetland Hydrology Present?	Yes	X	No		
Remarks: (Explain alternative procedures here or in a separate report.)					

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)		<input type="checkbox"/> Moss Trim Lines (B16)			
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)		<input type="checkbox"/> Crayfish Burrows (C8)			
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)		<input type="checkbox"/> Stunted or Stressed Plants (D1)			
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)		<input type="checkbox"/> Shallow Aquitard (D3)			
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Microtopographic Relief (D4)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)			
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)						
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)						
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)						
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <input type="text" value="12"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks:							

VEGETATION - Use scientific names of plants.

Sampling Point: DP01

	Absolute % Cover	Dominant Species?	Indicator Status																	
<u>Tree Stratum</u> (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		= Total Cover																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>235</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.24</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>235</u> (B)	Prevalence Index = B/A = <u>2.24</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>105</u> (A)	<u>235</u> (B)																			
Prevalence Index = B/A = <u>2.24</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		= Total Cover																		
<u>Herb Stratum</u> (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> Dominance Test is >50% <input checked="" type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ _____ 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.																
1. <u>Juncus effusus</u>	<u>85</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Andropogon virginicus</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Cornus racemosa</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Symphyotrichum lateriflorum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
13. _____	_____	_____	_____																	
14. _____	_____	_____	_____																	
15. _____	_____	_____	_____																	
16. _____	_____	_____	_____																	
17. _____	_____	_____	_____																	
18. _____	_____	_____	_____																	
19. _____	_____	_____	_____																	
20. _____	_____	_____	_____																	
	<u>105</u>	= Total Cover																		
<u>Woody Vine Stratum</u> (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		= Total Cover																		
Hydrophytic Vegetation Present ? <div style="text-align: right;">Yes <u>x</u> No <u>_____</u></div>																				
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 (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3"	10YR 4/2	85	10YR 5/8	15	C	M	Clay Loam	
3-18"	10YR 5/2	85	10YR 5/8	15	C	M	Clay Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Black Histic (A3)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Umbric Surface (F13)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Very Shallow Dark Surface (F22) (Test)
<input type="checkbox"/> Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present?

Yes X

No _____

Remarks:

Project/Site:	F1783 - 138kV Ebenezer Substation Expansion		City/County:	Green Township, Hamilton County		Sampling Date:	3/5/2018						
Applicant/Owner:	Duke Energy			State:	OH		Sampling Point:	DP02					
Investigator(s):	C. Jansing			Section, Township, Range:	Section 25, Township 2E, Range 2N								
Landform (hillslope, terrace, etc.):	Shoulder			Local relief (concave, convex, none):	none								
Slope (%):	7%		Lat:	39.122301		Long:	-84.653668		Datum:	NAD83 UTM16N			
Soil Map Unit Name:	Urban land-Udorthents complex, 0 to 12 percent slopes (UrUXC)						NWI classification:	N/A					
Are climatic / hydrologic conditions on the site typical for this time of year?				Yes	<input checked="" type="checkbox"/>		No	<input type="checkbox"/> (If no, explain in Remarks.)					
Are Vegetation	<input type="checkbox"/>	Soil	<input type="checkbox"/>	or Hydrology	<input type="checkbox"/>	significantly disturbed?		Are "Normal Circumstances" present?	Yes	<input checked="" type="checkbox"/>		No	<input type="checkbox"/>
Are Vegetation	<input type="checkbox"/>	Soil	<input type="checkbox"/>	or Hydrology	<input type="checkbox"/>	naturally problematic?		(If needed, explain any answers in Remarks.)					

Hydrophytic Vegetation Present?	Yes _____	No <u> X </u>	Is the Sampled Area within a Wetland? Yes _____ No <u> X </u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes _____	No <u> X </u>	
Wetland Hydrology Present?	Yes _____	No <u> X </u>	
Remarks: (Explain alternative procedures here or in a separate report.)			

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

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <input type="text"/> (includes capillary fringe)				Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:					

VEGETATION - Use scientific names of plants.

Sampling Point: DP02

	Absolute % Cover	Dominant Species?	Indicator Status																	
Tree Stratum (Plot size: <u>30 ft.</u>)				Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			= Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u>)					Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>155</u></td> <td>x 4 = <u>620</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>620</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>155</u>	x 4 = <u>620</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>620</u> (B)	Prevalence Index = B/A = <u>4.00</u>
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>155</u>	x 4 = <u>620</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>155</u> (A)	<u>620</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			= Total Cover																	
Herb Stratum (Plot size: <u>5 ft.</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Andropogon virginicus</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Festuca rubra</u>	<u>45</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Solidago canadensis</u>	<u>30</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Apocynum cannabinum</u>	<u>15</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Schedonorus arundinaceus</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Rubus allegheniensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
13. _____	_____	_____	_____																	
14. _____	_____	_____	_____																	
15. _____	_____	_____	_____																	
16. _____	_____	_____	_____																	
17. _____	_____	_____	_____																	
18. _____	_____	_____	_____																	
19. _____	_____	_____	_____																	
20. _____	_____	_____	_____																	
			= Total Cover																	
Woody Vine Stratum (Plot size: <u>30 ft.</u>)				Definitions of Vegetation Strata: Tree - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
			= Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.) 				Hydrophytic Vegetation Present ? <div style="text-align: right;"> Yes <u> </u> No <u> x </u> </div>																

SOIL

Sampling Point: DP02

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

_____ Histosol (A1)	_____ Dark Surface (S7)
_____ Histic Epipedon (A2)	_____ Loamy Gleyed Matrix (F2)
_____ Black Histic (A3)	_____ Depleted Matrix (F3)
_____ Hydrogen Sulfide (A4)	_____ Redox Dark Surface (F6)
_____ Stratified Layers (A5)	_____ Depleted Dark Surface (F7)
_____ 2 cm Muck (A10)	_____ Redox Depressions (F8)
_____ Depleted Below Dark Surface (A11)	_____ Iron-Manganese Masses (F12)
_____ Thick Dark Surface (A12)	_____ Umbric Surface (F13)
_____ Sandy Mucky Mineral (S1)	_____ Red Parent Material (F21)
_____ Sandy Gleyed Matrix (S4)	
_____ Sandy Redox (S5)	
_____ Stripped Matrix (S6)	

Indicators for Problematic Hydric Soils²:

_____ 2 cm Muck (A10) (**MLRA 147**)
 _____ Very Shallow Dark Surface (F22) (Test)
 _____ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present?	Yes	No	X
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Remarks:

DUKE ENERGY
F1783 – 138kV Ebenezer Substation
Expansion

APPENDIX

D

ENDANGERED, THREATENED, AND
RARE SPECIES



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldrige, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
Fax: (614) 267-4764

September 18, 2018

Cori Jansing
Cardno
11121 Canal Road
Cincinnati, Ohio 45241

Re: 18-869; Environmental Review Request, Duke Energy Ebenezer Substation

Project: The proposed project involves the installation of approximately 0.2 miles of new transmission line, encompassing a total study corridor of 2.4 acres of existing 100-foot wide Duke Energy transmission line corridor Right-of-Way to facilitate the expansion of the Ebenezer Substation.

Location: The proposed project is in Greene Township, Hamilton County, Ohio.

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

Natural Heritage Database: The Natural Heritage Database has no records at or within a one-mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no other records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

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

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

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between May 15 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the sheepsnout (Plethobasus cyphus), a state endangered and federally endangered mussel, the fanshell (Cyprogenia stegaria), a state endangered and federally endangered mussel, the pink mucket (Lampsilis orbiculata), a state endangered and federally endangered mussel, the rayed bean (Villosa fabalis), a state endangered and federally endangered mussel, the snuffbox (Epioblasma triquetra), a state endangered and federally endangered mussel, the ebonyshell (Fusconaia ebena), a state endangered mussel, the long-solid (Fusconaia maculata maculata), a state endangered mussel, the butterfly (Ellipsaria lineolata), a state endangered mussel, the washboard (Megaloniais nervosa), a state endangered mussel, the elephant-ear (Elliptio crassidens crassidens), a state endangered mussel, the Ohio pigtoe (Pleurobema cordatum), a state endangered mussel, the monkeyface (Quadrula metanevra), a state endangered mussel, the wartyback (Quadrula nodulata), a state endangered mussel, the black sandshell (Ligumia recta), a state threatened mussel, the fawnsfoot (Truncilla donaciformis), a state threatened mussel, and the threehorn wartyback (Obliquaria reflexa), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size, this project is not likely to impact these species.

The project is within the range of the shortnose gar (Lepisosteus platostomus), a state endangered fish, the shoal chub (Macrhybopsis hyostoma), a state endangered fish, the shovelnose sturgeon (Scaphirhynchus platyrhynchus), a state endangered fish, the lake sturgeon (Acipenser fulvescens), a state endangered fish, the northern madtom (Noturus stigmosus), a state endangered fish, the bigeye shiner (Notropis boops) a state threatened fish, the mountain madtom (Noturus eleutherus), a state threatened fish, the river darter (Percina shumardi) a state threatened fish, the channel darter (Percina copelandi), a state threatened fish, the blue sucker (Cycleptus elongatus), a state threatened fish, and the paddlefish (Polyodon spathula) a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the cave salamander (*Eurycea lucifuga*), a state endangered species. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the American bittern (*Botaurus lentiginosus*), a state endangered bird. Nesting bitterns prefer large undisturbed wetlands that have scattered small pools amongst dense vegetation. They occasionally occupy bogs, large wet meadows, and dense shrubby swamps. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the lark sparrow (*Chondestes grammacus*), a state endangered bird. This sparrow nests in grassland habitats with scattered shrub layers, disturbed open areas, as well as patches of bare soil. In the Oak Openings area west of Toledo, lark sparrows occupy open grass and shrubby fields along sandy beach ridges. These summer residents normally migrate out of Ohio shortly after their young fledge or leave the nest. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Sloan's crayfish (*Orconectes sloanii*), a state threatened species. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

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

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

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

From: Cori Jansing
To: [Danielle Thompson](#)
Subject: Fwd: Cardno #F1783 Ebenezer Substation Expansion, Hamilton Co. OH
Date: Tuesday, August 7, 2018 2:50:58 PM
Attachments: [Letterhead for Emails 2.jpg](#)
[Scott.jpg](#)

Sent from my iPhone

Begin forwarded message:

From: "Ohio, FW3" <ohio@fws.gov>
Date: August 7, 2018 at 11:39:40 AM EDT
To: <cori.jansing@cardno.com>
Cc: <nathan.reardon@dnr.state.oh.us>, <kate.parsons@dnr.state.oh.us>
Subject: Cardno #F1783 Ebenezer Substation Expansion, Hamilton Co. OH



TAILS# 03E15000-2018-TA-1823

Dear Ms. Jansing,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the 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. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In

Ohio, presence of the Indiana bat and northern long-eared bat is assumed 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 travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) 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 and abandoned mines.

Should the proposed site contain trees ≥ 3 inches dbh, we recommend that trees be saved 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 that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being 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, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

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

Due to the project type, size, and location, we do not anticipate adverse effects to

any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@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,



Scott Pruitt
Acting Field Office Supervisor

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

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/29/2018 11:10:56 AM

in

Case No(s). 18-1572-EL-BNR

Summary: Application electronically filed by Ms. Emily Olive on behalf of Duke Energy Ohio and D'Ascenzo, Rocco O. Mr. and Kingery, Jeanne W. Ms.