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RUNNING BUFFALO CLOVER SURVEY REPORT
LINE D000B PIPELINE REPLACEMENT PROJECT
CINCINNATI, HAMILTON COUNTY, OHIO

PREPARED FOR:

DUKE ENERGY CORPORATION
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CINCINNATI, OHIO

CEC Project 153-230

September 23, 2016



Civil & Environmental Consultants, Inc.

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EXECUTIVE SUMMARY

On May 16, 18, and 19, 2016, Civil & Environmental Consultants, Inc. conducted a running buffalo clover (RBC) (*Trifolium stoloniferum*; federally-listed endangered) survey within the Duke Energy Corporation's (Duke Energy) Line D000B Pipeline Replacement Project study corridor (Project area), located in Cincinnati, Hamilton County, Ohio. The total potential RBC habitat that was surveyed was approximately 5.06 acres or about 6 percent of the total Project area. The remaining areas within the Project study corridor do not provide suitable habitat conditions for the RBC based on one or more of the following habitat considerations: extent of disturbance, solar exposure, soil saturation, and/or a dense understory. No RBC individuals or populations were observed during the survey. The survey was conducted following standard methods for endangered plant surveys, as approved by the United States Fish and Wildlife Service (USFWS), which included species-specific surveys within potentially suitable habitat during the timeframe when local RBC populations were within a vegetative state that allowed for positive identification of this species. Therefore, it is CEC's professional opinion that the proposed project is not likely to adversely affect the RBC.

1.0 INTRODUCTION

This report presents the findings of a running buffalo clover (RBC) (*Trifolium stoloniferum*; federally-listed endangered) survey conducted by Civil & Environmental Consultants, Inc. (CEC) for the Duke Energy Corporation (Duke Energy) within the Line D000B Pipeline Replacement study corridor, located in Cincinnati's East End, Hamilton County, Ohio. CEC understands that Duke is proposing to replace approximately 3.45 miles (18,200 feet) of a single existing 20- and 24-inch spiral welded bare steel high pressure natural gas pipeline with a new 24-inch corrosion protected steel pipe. The variable width Project study corridor, averaging 200-foot wide, is approximately 3.45 miles in length and totals approximately 84.2 acres and was extended beyond the pipeline easement and associated workspace. The pipeline easement is at maximum 50 feet in width, with another 20 to 50 feet of additional temporary workspace where available. Approximately 2.47 miles or 13,303 feet of the replacement pipeline is proposed to be collocated within the existing pipeline ROW, while the remaining 0.98 mile (5,162 feet) of replacement pipeline will be located within new pipeline ROW. Approximately 96 percent (4,939 feet) of the new pipeline ROW will be located in areas previously disturbed, including Kellogg Avenue, unnamed private roads, and several businesses. The existing pipeline is proposed to be abandoned in-place.

CEC conducted a RBC species habitat assessment, followed by a presence-absence survey within the Project study corridor on May 16, 18, and 19, 2016. The habitat survey revealed approximately 5.06 acres or about 6 percent of the Project study corridor met the habitat considerations as potential RBC habitat (Figures 4-19). CEC subsequently conducted a RBC survey on the potential habitat that was identified in the Project area. The survey was conducted following standard methods and guidelines for endangered plant surveys, as approved by the USFWS, which included a species-specific survey within potentially suitable habitat during the flowering period from late spring to early summer, as to allow for positive identification of the species. Detailed information on RBC life history and distribution, survey methods employed, and survey results are included in this report.

2.0 BACKGROUND

The Project study corridor is located entirely within Cincinnati's East End neighborhood. The Project area is bound by Duke Energy's East End natural gas distribution center to the north, the Little Miami River to the south, State Route 52 to the east, and the Ohio River to the west. Topography within the Project area consists of level to gently sloping terrain, with a steeply sloped embankment at the southern extent of the Project area. Elevations within the Project study corridor are mapped to range from approximately 470 feet to 515 feet above mean sea level (AMSL). Hydrologic features within the Project area include six wetlands (Figures 3-19). Drainage within the Project area is to the Little Miami and Ohio Rivers. The full extent of the Project study corridor is located within the Federal Emergency Management Agency (FEMA) 100-year floodplain.

The general types of habitats where the RBC survey was conducted included mowed park habitat with scattered overstory trees, periodically disturbed trail habitat that is located on an embankment that formerly functioned as a railroad corridor, mixed early successional/right-of-way (ROW) habitat, and second growth floodplain forest habitat (Figures 4-19). Representative photographs of the habitats are provided in Appendix A. The RBC survey was conducted within the Project area based on the presence of potentially suitable RBC survey habitat and the potential for this species to occur within Hamilton, Ohio (Appendix B).

3.0 RUNNING BUFFALO NATURAL HISTORY

3.1 REASON FOR LISTING

RBC was listed by the USFWS as federally endangered on July 6, 1987 (50 FR 21478-21480) (USFWS 2007). Specific threats identified by the RBC Recovery Team in 1995 were: 1) any irreversible, catastrophic disturbance, such as road construction that completely destroys the habitat and/or kills all plants and seeds within the path of the disturbance; 2) the closing of forest canopies through succession to the point of severe shading, leading to reduced flower and fruit production; 3) the elimination of bison leading to reduced seed dispersal and release of competing vegetation; 4) low population size and associated fragility and susceptibility to catastrophe (including genetic diversity concerns); 5) excessive herbivory; 6) viral and fungal diseases; 7) reduction in pollinators; and 8) competition from non-native, invasive plant species (USFWS 2007).

3.2 DESCRIPTION

RBC is a member of the Fabaceae (pea) family that produces erect flowering stems, 10 to 30 centimeters (cm) tall, that send out long basal runners (stolons) (USFWS 2007). The basal runners root at the nodes and produce leaves that have 1 to 2 cm long ovate-lanceolate stipules, whose tips gradually narrow to a distinctive point (USFWS 2007). The plant produces 9 to 12 millimeter (mm) long round white flowers from mid-April to June, with fruiting occurring from May to July. A single plant is defined as an individual rooted crown (USFWS 2007). These crowns may occur singly or be attached to other rooted crowns by stolons. Brooks (1983) provides a more comprehensive description of this species.

3.3 DISTRIBUTION

Historically, RBC was found from the central plains to the Appalachian Mountains. The species was once considered extinct until a single population was rediscovered in West Virginia in 1983 (Brooks 1983). Since then, populations have been discovered in Indiana, Kentucky, Missouri,

and Ohio. Current populations are divided into three regions based on proximity to each other and overall habitat similarities. These regions are Appalachian (West Virginia and southeastern Ohio), Bluegrass (southwestern Ohio, central Kentucky, and southeast Indiana), and Ozark (Missouri) (USFWS 2007). A total of 108 populations of RBC are currently known from Ohio, Indiana, Kentucky, Missouri, and West Virginia (NatureServe 2015; USFWS 2007, 2008).

3.4 HABITAT

Habitat for RBC typically includes locations with partial or filtered sunlight and with moist, fertile soils that have been exposed to long-term moderate patterns of disturbance (CPC 2016). It is thought that large herbivores like bison and cattle provided the necessary scarification of the soil for plants to germinate. Populations of this species are often found in the ecotone between forest and tallgrass prairie habitats (CPC 2016).

Additionally, others describe the habitat of this species as including mesophytic woodlands (Isely 1998), moist, well-drained disturbed woods associated with streams (Gleason and Cronquist 1991), and open woods, borders, and forest clearings (Cusick 1989). It has been reported from a variety of habitats, including mesic woodlands, savannahs, floodplains, stream banks, sandbars (especially where old trails cross or parallel intermittent streams), grazed woodlots, forested lawn areas or trails that are infrequently mowed (e.g. in cemeteries, parks, and residential lawns), old logging roads, jeep trails, skidder trails, mowed wildlife openings within mature forest, and steep ravines (USFWS 2007). No critical habitat has been designated for this species (NatureServe 2015).

3.5 RECENT HISTORY OF SPECIES IN OHIO

RBC was rediscovered in Ohio in 1988 and is listed as endangered by the state of Ohio. According to the USFWS (2007), 18 extant populations and eight extirpated populations were known from Ohio, as of 2005. Populations have been primarily found in mesic forest and lawn habitats in Hamilton, Clermont, Brown, and Lawrence counties. Most of the known populations are reportedly located on county park lands and have been managed as to protect and encourage

RBC. The first population on Federal land in Ohio was located in 2005 on Wayne National Forest (USFWS 2007).

4.0 SURVEY METHODOLOGY

4.1 LITERATURE REVIEW

A literature review of pertinent articles relating to the RBC was conducted as part of the background data acquisition activities for this study. The USFWS County Distribution List of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species in Ohio was reviewed during the initial stages of this project to obtain information concerning known threatened and endangered species populations within the area (USFWS 2016). The USFWS Hamilton County, Ohio listing reported that the Project area was within the known range of the RBC, though site specific species occurrences were not known. Several additional articles from the scientific literature were obtained and reviewed for additional information of use to the field study program (as cited in the references section). This information collected prior to conducting the field study was useful in supplementing the information concerning the preferred habitat conditions of known RBC populations in the region.

4.2 PRE-SURVEY KNOWN POPULATION FIELD VERIFICATION

In addition to the literature review, a pre-survey verification of a known RBC population was conducted at the Dinsmore Woods State Nature Preserve in Boone County, Kentucky. The purpose of this verification was to determine the precise flowering period and “phenophase” of the known population. This would allow the field survey to be conducted knowing the growth condition of the species to assist in better observation and species presence determinations. During the pre-survey site verification, photographs of the condition of the existing known population were made and the specific plant growth stage was noted. In addition, attention was directed toward observation of plant associations, soils, amount of vegetative shading, duration of disturbance, and amount of disturbance that were habitat characteristics of the known RBC population. Appendix A-1 contains representative photographs of the RBC population that was observed in Dinsmore Woods State Nature Preserve, as photographed by CEC on May 6, 2016.

4.3 POTENTIAL RBC HABITAT AND PRESENCE-ABSENCE SURVEY

On May 16, 18, and 19, 2016, CEC biologist and USFWS approved RBC surveyor Joey Van Skaik conducted an RBC habitat survey, followed by an RBC presence-absence survey of the Project area. This two-phased approach involved an initial ground truthing effort to identify areas within the Project study corridor that contained suitable habitat for the RBC. The areas that were identified as potential RBC habitat were subsequently and systematically searched to determine the presence or absence of the species.

The presence-absence survey involved walking transects spaced approximately 10 to 15 feet apart, depending on the density of vegetation in the understory. Observed species of clover (*Trifolium* spp.), or with clover-like leaves, were visually reviewed when encountered. A Trimble GeoXT Global Positioning System (GPS) was used to guide the field survey relative to the limits of the Project study corridor and to establish approximate coordinates of photograph points, voucher specimen locations, and other features of interest. CEC surveyed maintained, early successional park habitat with scattered overstory trees, periodically disturbed trail habitat that is located on an embankment that formerly functioned as a railroad corridor, mixed early successional/right-of-way (ROW) habitat, and second growth floodplain forest habitat within the Project area.

Dominant plant species in the overstory, understory, and herbaceous ground cover were documented. See Appendix A-2 for representative photographs of the areas that were surveyed for RBC within the Project study corridor. It is worth noting that Appendix A-2 also includes site reconnaissance photographs that were taken as part of the wetland and waterbody delineation effort. Areas that lacked potentially suitable habitat and/or contained dense vegetation were not included in the transect survey.

5.0 RESULTS

The RBC survey results for the Project study corridor and reference population location are presented below on Table 1.

TABLE 1 RUNNING BUFFALO CLOVER SURVEY RESULTS						
Survey Date	Site Name	Latitude	Longitude	Site Location	Habitat Type	RBC Present/ Absent
May 5, 2016	Reference Population	39.000841	-84.814890	Dinsmore Woods State Nature Preserve Boone County, Kentucky	Walking trail leading to ridge top and adjacent cemetery. Site receives periodic disturbance and filtered sunlight.	Present
May 16 & 18, 2016	1	39.080896	-84.427648	Near Four Seasons Marina and the confluence of the Little Miami and Ohio Rivers	Bottomland hardwood forest bisected by a pipeline right-of-way/early successional habitat. Site receives periodic disturbance and filtered sunlight.	Absent
May 18, 2016	2	39.082402	-84.427663	Near Four Seasons Marina and the confluence of the Little Miami and Ohio Rivers	Trail or two track habitat that is located on an embankment that formerly functioned as a railroad corridor. Site receives periodic disturbance and filtered sunlight.	Absent
May 19, 2016	3A 3B 3C 3D	39.115040 39.115381 39.115666 39.115969	-84.443193 -84.443573 -84.443945 -84.444430	Adjacent to Turkey Ridge Park, the Ohio River Trail, and Humbert Avenue	Mowed park habitat with scattered overstory trees. Site receives periodic disturbance and filtered sunlight.	Absent
May 19, 2016	4	39.118429	-84.448547	Located at Schmidt Recreation Complex and adjacent to the Ohio River Trail	Mowed park habitat with scattered overstory trees. Site receives periodic disturbance and filtered sunlight.	Absent

The observation and photo documentation of the known RBC population at the Dinsmore Woods State Nature Preserve in Boone County, Kentucky assisted significantly in identifying the stage of growth and flowering of the species in the area.

Although potentially suitable habitat for the RBC was present within the Project study corridor, no RBC individuals or populations were identified during the survey conducted by CEC on May 16, 18, and 19, 2016. Four RBC look-alikes were observed during the survey, including three plants from the leguminous pea family and one plant from the wood-sorrel family. These four species of RBC look-alikes include white clover (*Trifolium repens*), red clover (*Trifolium pratense*), low hop clover/field clover (*Trifolium campestre*), and common yellow oxalis (*Oxalis stricta*), respectively.

Site 1 is a bottomland hardwood forest bisected by an existing pipeline right-of-way that is maintained in an early successional habitat state. The site receives periodic disturbance as evidenced by the occasional mowing along the ROW and flood events from the Ohio and Little Miami Rivers. The site receives filtered solar exposure and is located on rich soil. Representative photographs of this habitat type are included in Appendix A-2.

The forested vegetation community is dominated by silver maple (*Acer saccharinum*), cottonwood (*Populus deltoids*), box elder (*Acer negundo*), and American elm (*Ulmus americana*), while the herbaceous plant community included creeping jenny (*Lysimachia nummularia*), false nettle (*Boehmeria cylindrica*), white clover (*Trifolium repens*), red clover (*Trifolium pratense*), giant ironweed (*Vernonia gigantea*), narrowleaf plantain (*Plantago lanceolata*), common yellow oxalis (*Oxalis stricta*), stickywilly (*Galium aparine*), hog peanut (*Amphicarpa bracteata*), wingstem (*Verbesina alternifolia*), violets (*Viola* spp.), poison ivy (*Toxicodendron radicans*), Canadian honewort (*Cryptotaenia canadensis*), sedges (*Carex* spp.) and stinging nettle (*Urtica dioica*).

Site 2 is a trail or two-track that is located on an embankment that formerly functioned as a railroad corridor. The site receives occasional to periodic disturbance and filtered solar exposure. Representative photographs of this habitat type are included in Appendix A-2.

Common herbaceous plant species along this trail or two-track included white clover (*Trifolium repens*), red clover (*Trifolium pratense*), black medic (*Medicago lupulina*), curly dock (*Rumex crispus*), broadleaf plantain (*Plantago major*), sedges, common chickweed (*Stellaria media*), and grasses (*Poa* and *Festuca* spp.)

Site 3 (A, B, C, and D) is mowed park habitat that is separated by Worth Street, Hoboken Alley, and Strader Avenue, respectively. This site is bound to the west by Humbert Avenue, the Ohio River Trail, Turkey Ridge Club, and the Ohio River Launch Club. The site receives periodic disturbance from occasional mowing and recreational play, varied filtered solar exposure, and is located on rich soil. Representative photographs of this habitat type are included in Appendix A-2.

The overstory vegetation includes cottonwood, hackberry (*Celtis occidentalis*), maples (*Acer* spp.), and oaks, (*Quercus* spp.), while the herbaceous plant community includes white clover, red clover, narrowleaf plantain (*Plantago lanceolata*), violets, broadleaf plantain, yellow nutsedge (*Cyperus esculentus*), common mallow (*Malva neglecta*), common purslane (*Portulaca oleracea*), and grasses.

Site 4 is mowed park habitat that is located at Schmidt Recreation Complex, adjacent to the Ohio River Trail. The site receives periodic disturbance from occasional mowing and recreational play, varied filtered solar exposure from scattered overstory trees in the area, and is located on rich soil. Representative photographs of this habitat type are included in Appendix A-2.

The overstory vegetation includes oaks and maples, while the herbaceous plant community includes white clover, red clover, dandelion (*Taraxacum officinale*), narrowleaf plantain (*Plantago lanceolata*), violets, and grasses.

6.0 CONCLUSION

Bottomland hardwood forest and early successional habitat receiving filtered solar exposure, mowed areas, and trails are present within the Project area and surrounding vicinity. Based on the presence of these habitats, there is a potential for the presence of RBC. The RBC survey that was conducted by CEC on May 16, 18, and 19, 2016, did not reveal RBC individuals or populations within the Project area (Figures 4-19). Therefore, it is CEC's professional opinion that the proposed project is not likely to adversely affect the RBC.

7.0 REFERENCES

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FIGURES



SOURCE: ESRI WORLD STREET MAP, 2016.



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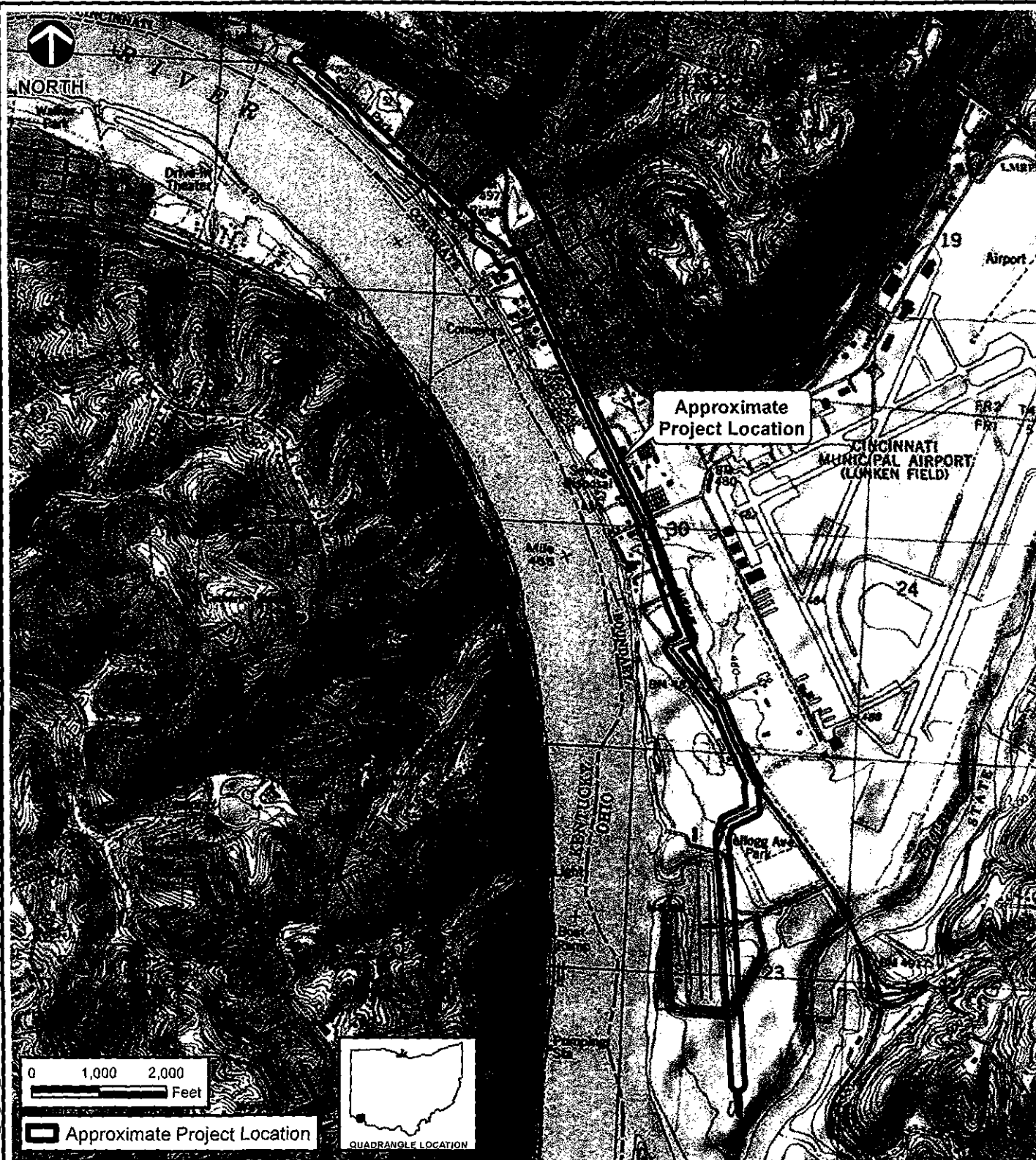
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REGIONAL LOCATION MAP

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SOURCE: PORTION OF THE USGS 7.5-MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAP OF NEWPORT, KENTUCKY-OHIO - 1984.



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PROJECT LOCATION MAP

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DATE: SEPTEMBER 23, 2016	DWG SCALE: 1" = 2,000'	PROJECT NO: 153-230	2

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SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC, IMAGE DATE: 2015.

Variable Width Study Corridor



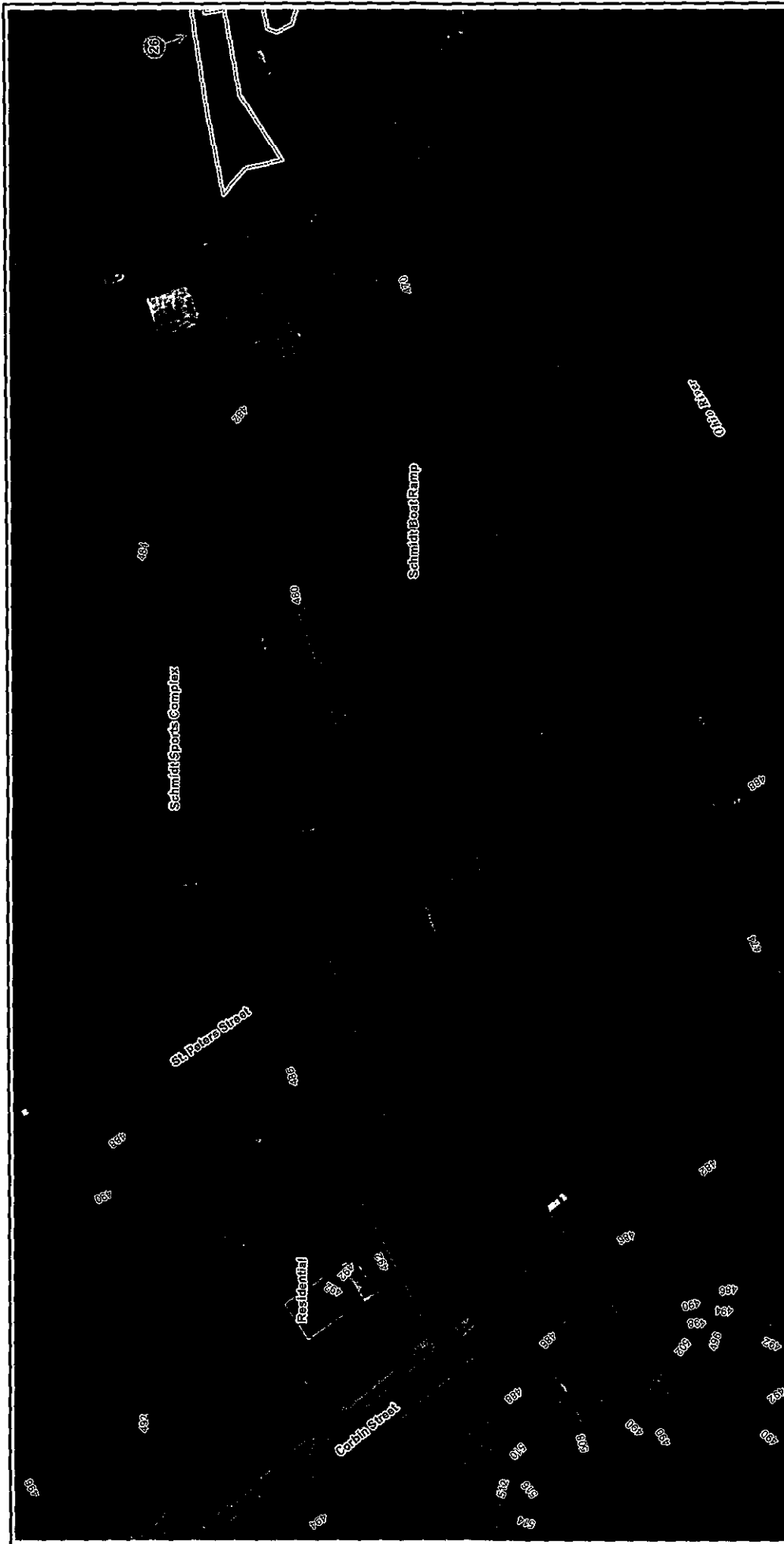
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RUNNING BUFFALO CLOVER SURVEY
 INDEX MAP

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SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.



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RUNNING BUFFALO CLOVER SURVEY MAP

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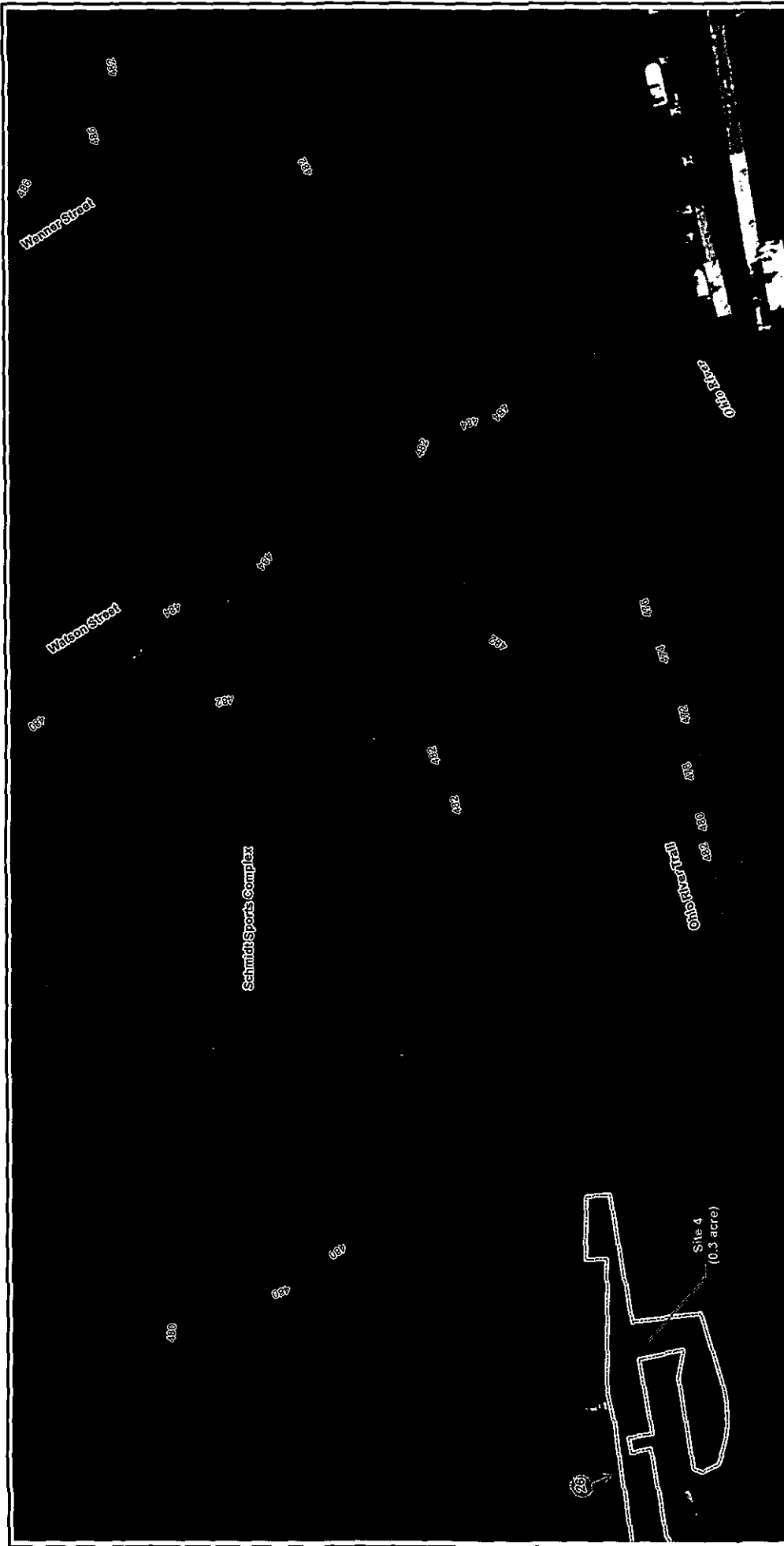
Existing Culvert
2-Foot Contour Interval
Photograph Location and Direction

Delineated Wetland
Palustrine Emergent (PEM)
Palustrine Forested (PFO)
Wetland Determination Sample
Point Location
Ohio River or Backwater Area

Proposed Replacement Pipeline
Variable Width Study Corridor
Potential Running Buffalo Clover
Habitat
Voucher Specimen Location
with Photograph Number



NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.



SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
 SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.



- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction

- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample
- Point Location
- Ohio River or Backwater Area

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Potential Running Buffalo Clover Habitat
- Voucher Specimen Location with Photograph Number

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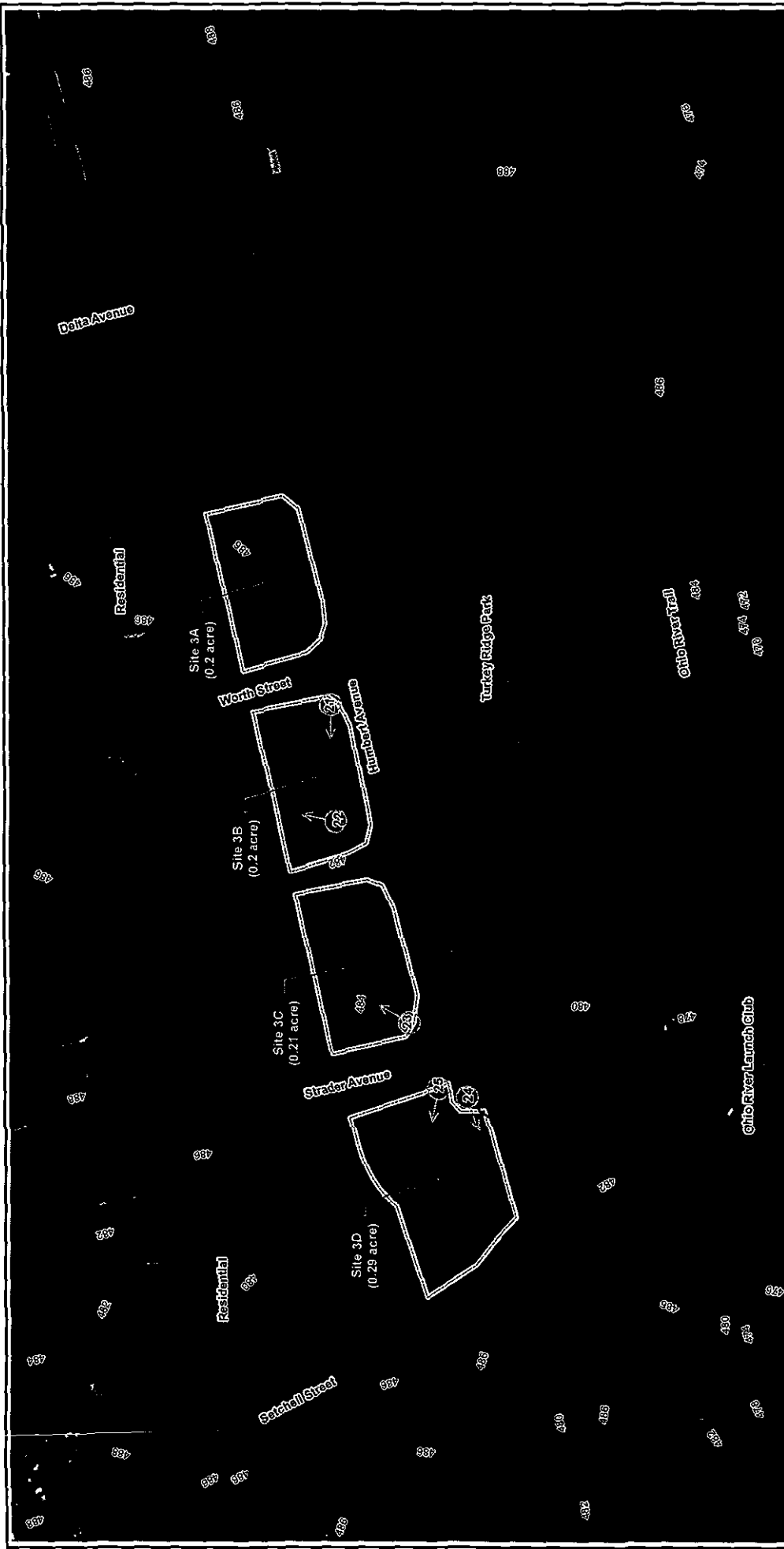
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RUNNING BUFFALO CLOVER SURVEY MAP

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	RUNNING BUFFALO CLOVER SURVEY MAP	
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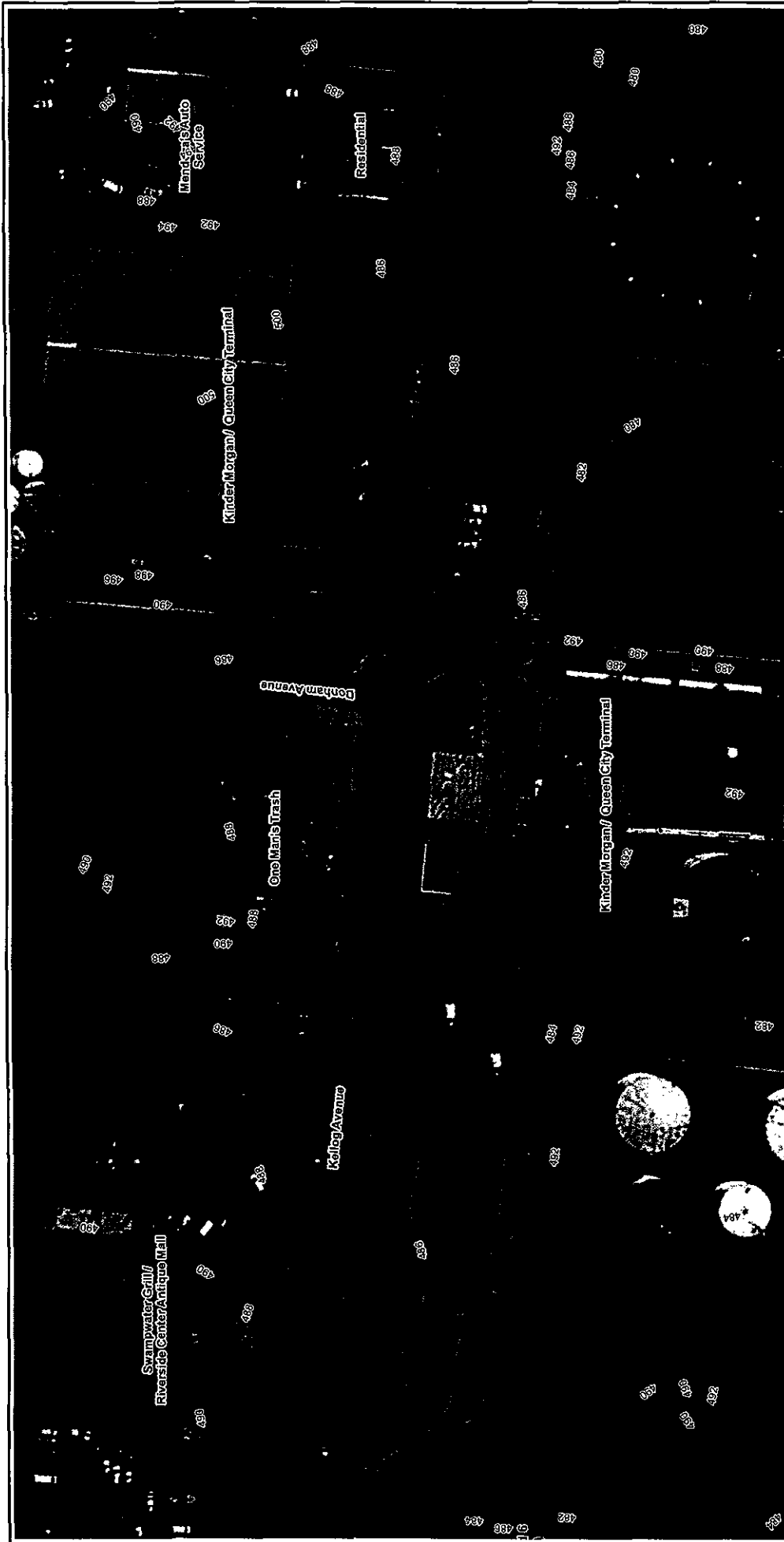
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Delineated Wetland
 Palustrine Emergent (PEM)
 Palustrine Forested (PFO)
 Wetland Determination Sample Point Location
 Ohio River or Backwater Area

Proposed Replacement Pipeline
 Variable Width Study Corridor
 Potential Running Buffalo Clover Habitat
 Voucher Specimen Location with Photograph Number

Existing Culvert
 2-Foot Contour Interval
 Photograph Location and Direction

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
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SOURCE: USDA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.



- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction

- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Potential Running Buffalo Clover Habitat
- Voucher Specimen Location with Photograph Number

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RUNNING BUFFALO CLOVER SURVEY MAP

DRAWN BY: DMG CHECKED BY: JAV APPROVED BY: JAV
DATE: SEPTEMBER 23, 2016 DWG SCALE: 1" = 75' PROJECT NO: 153-230 FIGURE NO: 8

Signature on File



SOURCE: USDA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
 SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

Legend

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Potential Running Buffalo Clover Habitat
- Voucher Specimen Location with Photograph Number
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction

North Arrow

Scale

0 75 150 Feet

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 5889 Montclair Boulevard - Cincinnati, OH 45210
 513-995-0226 - 800-759-5614
www.cedinc.com

DUKE ENERGY
 LINE D000B PIPELINE REPLACEMENT PROJECT
 CINCINNATI, HAMILTON COUNTY, OHIO

RUNNING BUFFALO CLOVER SURVEY MAP

DRAWN BY: DMG CHECKED BY: JAV
 DATE: SEPTEMBER 23, 2016 DWG SCALE: 1" = 75'

APPROVED BY: JAV FIGURE NO: 10
 PROJECT NO: 153-230

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
 NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

Signature on File



SOURCE: USDA PSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
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- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction

- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Potential Running Buffalo Clover Habitat
- Voucher Specimen Location with Photograph Number

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

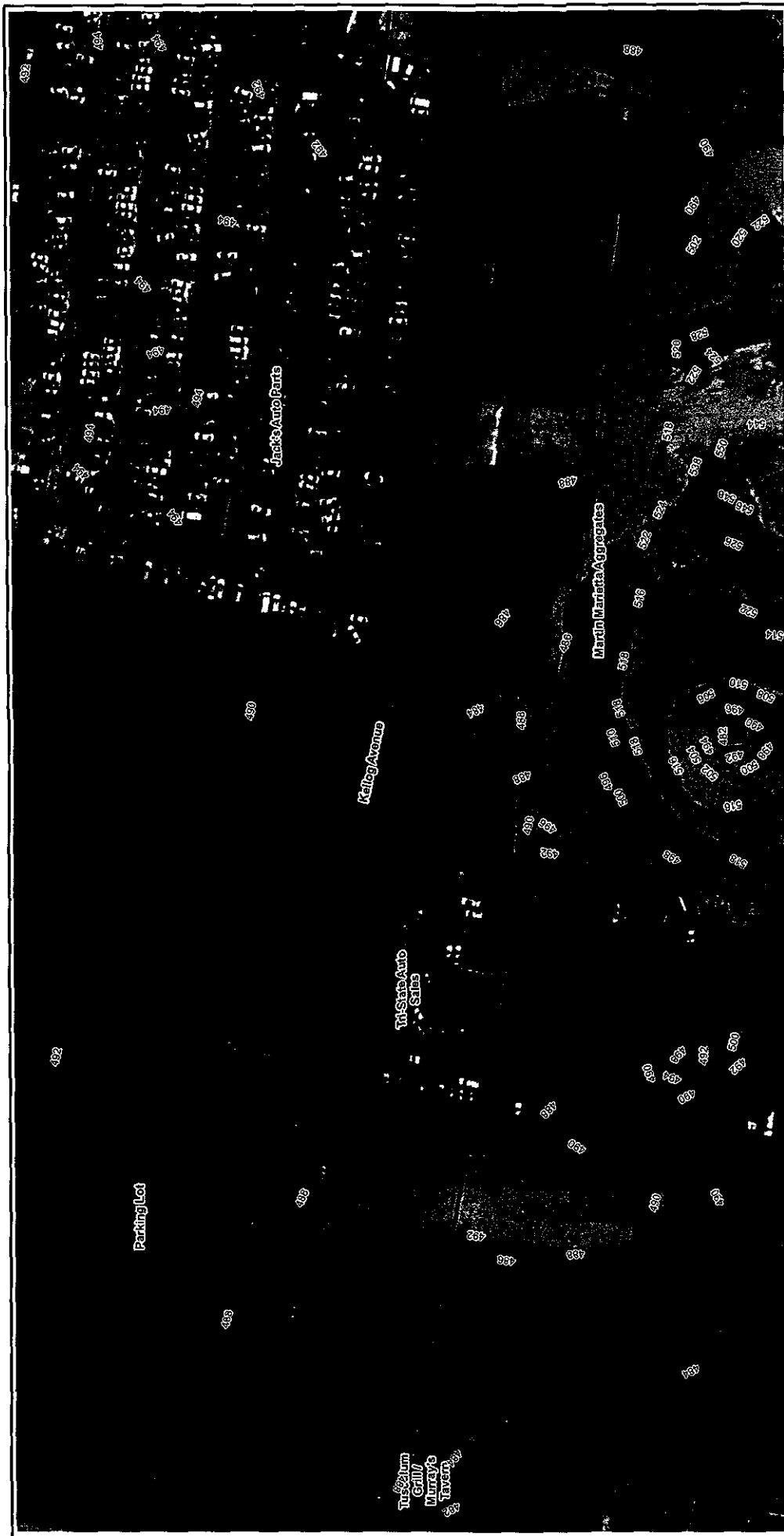


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RUNNING BUFFALO CLOVER SURVEY MAP

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DATE: SEPTEMBER 23, 2016 DWG SCALE: 1" = 75' PROJECT NO: 153-230

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 SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.



- Existing Culvert
- △ 2-Foot Contour Interval
- Photograph Location and Direction

- ▨ Delineated Wetland
- ▨ Palustrine Emergent (PEM)
- ▨ Palustrine Forested (PFO)
- ▨ Wetland Determination Sample Point Location
- Ohio River or Backwater Area

- ▨ Proposed Replacement Pipeline
- ▨ Variable Width Study Corridor
- ▨ Potential Running Buffalo Clover Habitat
- Voucher Specimen Location with Photograph Number

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
 NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.



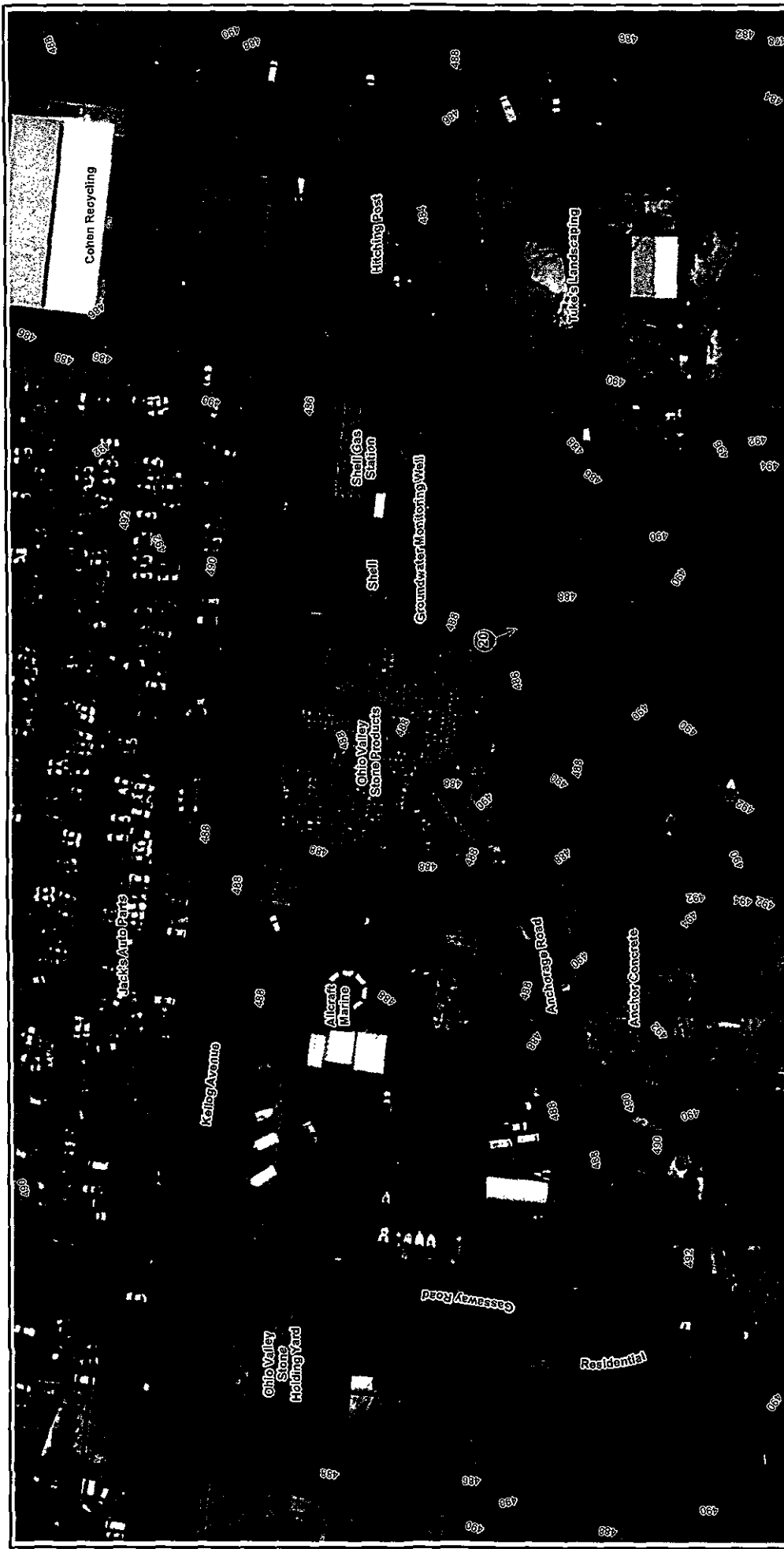
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RUNNING BUFFALO CLOVER SURVEY MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV	FIGURE NO.	12
DATE:	SEPTEMBER 23, 2016	DWG SCALE:	1" = 75'	PROJECT NO.:	153-230		

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 SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

 Civil & Environmental Consultants, Inc. 5889 Montclair Boulevard - Cincinnati, OH 45150 513-985-0228 • 800-759-5614 www.cecinc.com	DUKE ENERGY LINE D000B PIPELINE REPLACEMENT PROJECT CINCINNATI, HAMILTON COUNTY, OHIO	
	RUNNING BUFFALO CLOVER SURVEY MAP	
DRAWN BY: DMG DATE: SEPTEMBER 23, 2016	CHECKED BY: JAV DATE: SEPTEMBER 23, 2016	APPROVED BY: JAV DATE: SEPTEMBER 23, 2016
PROJECT NO: 153-230		FIGURE NO: 13

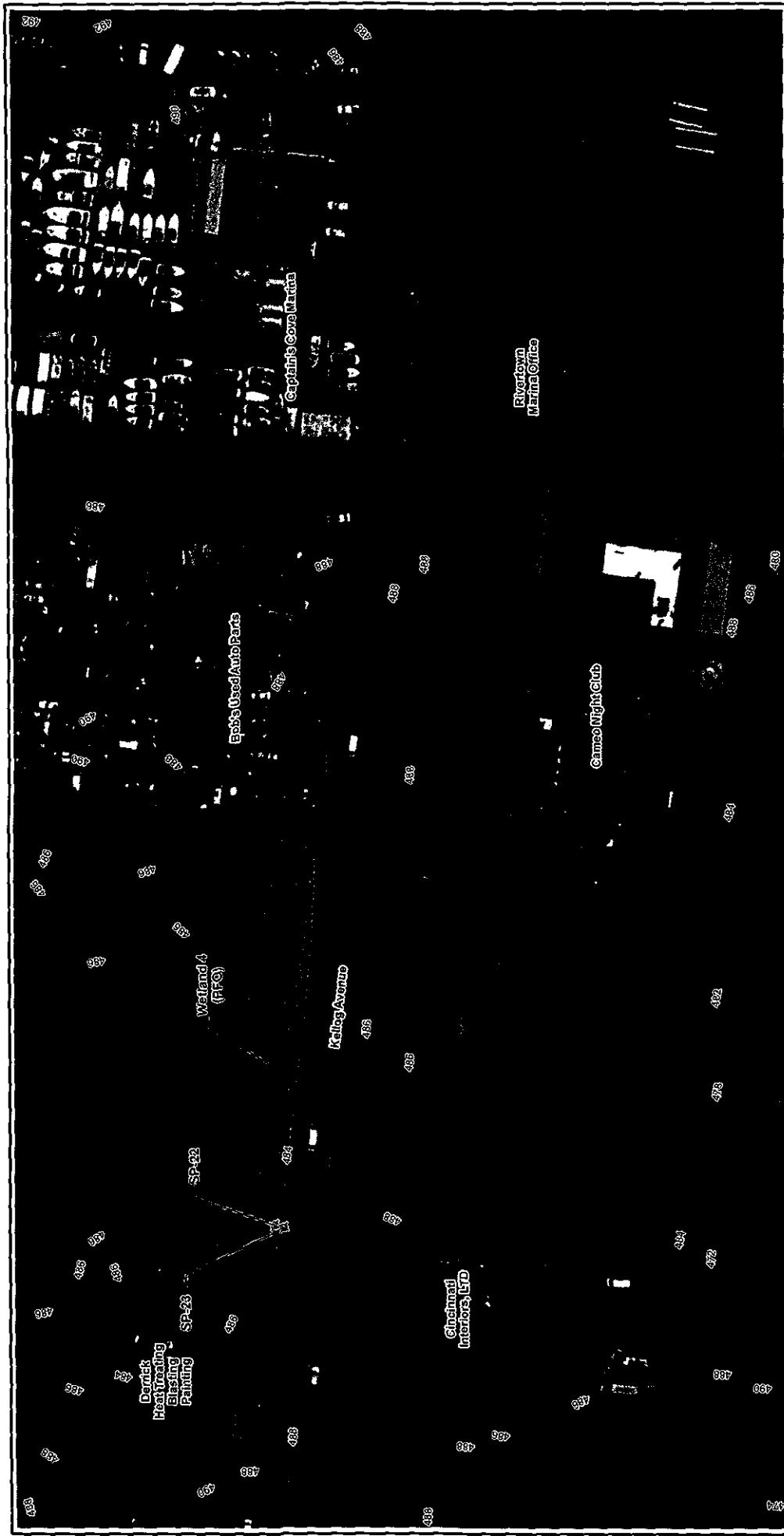
Proposed Replacement Pipeline
 Variable Width Study Corridor
 Potential Running Buffalo Clover Habitat
 Voucher Specimen Location with Photograph Number

Delineated Wetland
 Palustrine Emergent (PEM)
 Palustrine Forested (PFO)
 Wetland Determination Sample Point Location
 Ohio River or Backwater Area

Existing Culvert
 2-Foot Contour Interval
 Photograph Location and Direction

NORTH
 0 75 150 Feet

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
 NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.



SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
 SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

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DUKE ENERGY
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 CINCINNATI, HAMILTON COUNTY, OHIO
 RUNNING BUFFALO CLOVER SURVEY MAP

DRAWN BY: DMG CHECKED BY: JAV
 DATE: SEPTEMBER 23, 2016 DWG SCALE: 1" = 75' PROJECT NO: 153-230

APPROVED BY: JAV FIGURE NO: 14

Signature on File

Delineated Wetland
 Palustrine Emergent (PEM)
 Palustrine Forested (PFO)
 Wetland Determination Sample
 Point Location
 Ohio River or Backwater Area

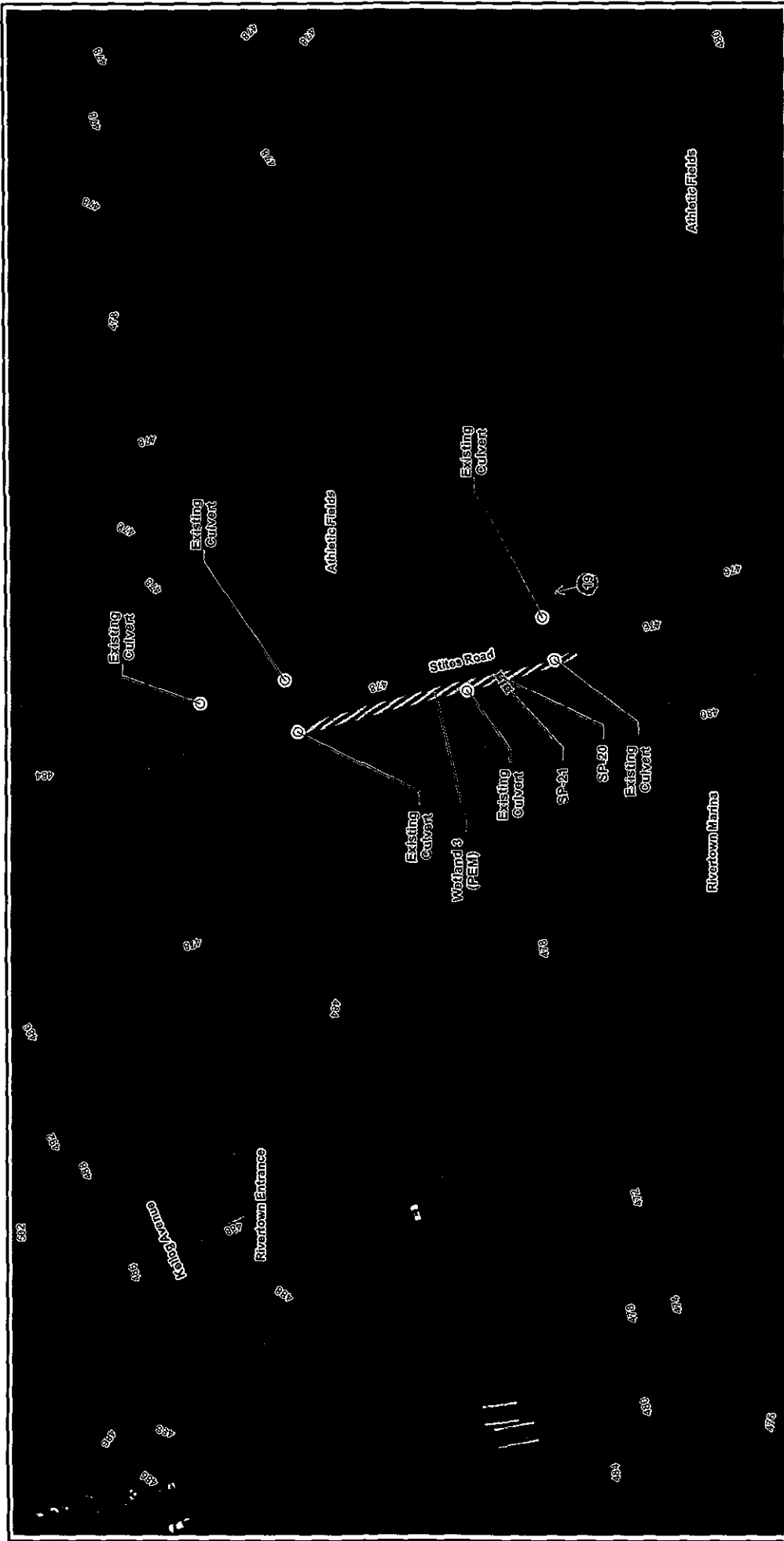
Proposed Replacement Pipeline
 Variable Width Study Corridor
 Potential Running Buffalo Clover
 Habitat
 Voucher Specimen Location
 with Photograph Number

Existing Culvert
 2-Foot Contour Interval
 Photograph Location and Direction

NORTH

0 75 150 Feet

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SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
 SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

 Civil & Environmental Consultants, Inc. 5889 Montclair Boulevard - Cincinnati, OH 45150 513-955-0226 - 800-758-5614 www.cecinc.com	DUKE ENERGY LINE D000B PIPELINE REPLACEMENT PROJECT CINCINNATI, HAMILTON COUNTY, OHIO	
	RUNNING BUFFALO CLOVER SURVEY MAP	
	DRAWN BY: DMG DATE: SEPTEMBER 23, 2016	CHECKED BY: JAV DWG SCALE: 1" = 75'
APPROVED BY: JAV PROJECT NO: 153-230		FIGURE NO: 15

Legend

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Potential Running Buffalo Clover Habitat
- Voucher Specimen Location with Photograph Number

Delineated Wetland

- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area

Existing Culvert

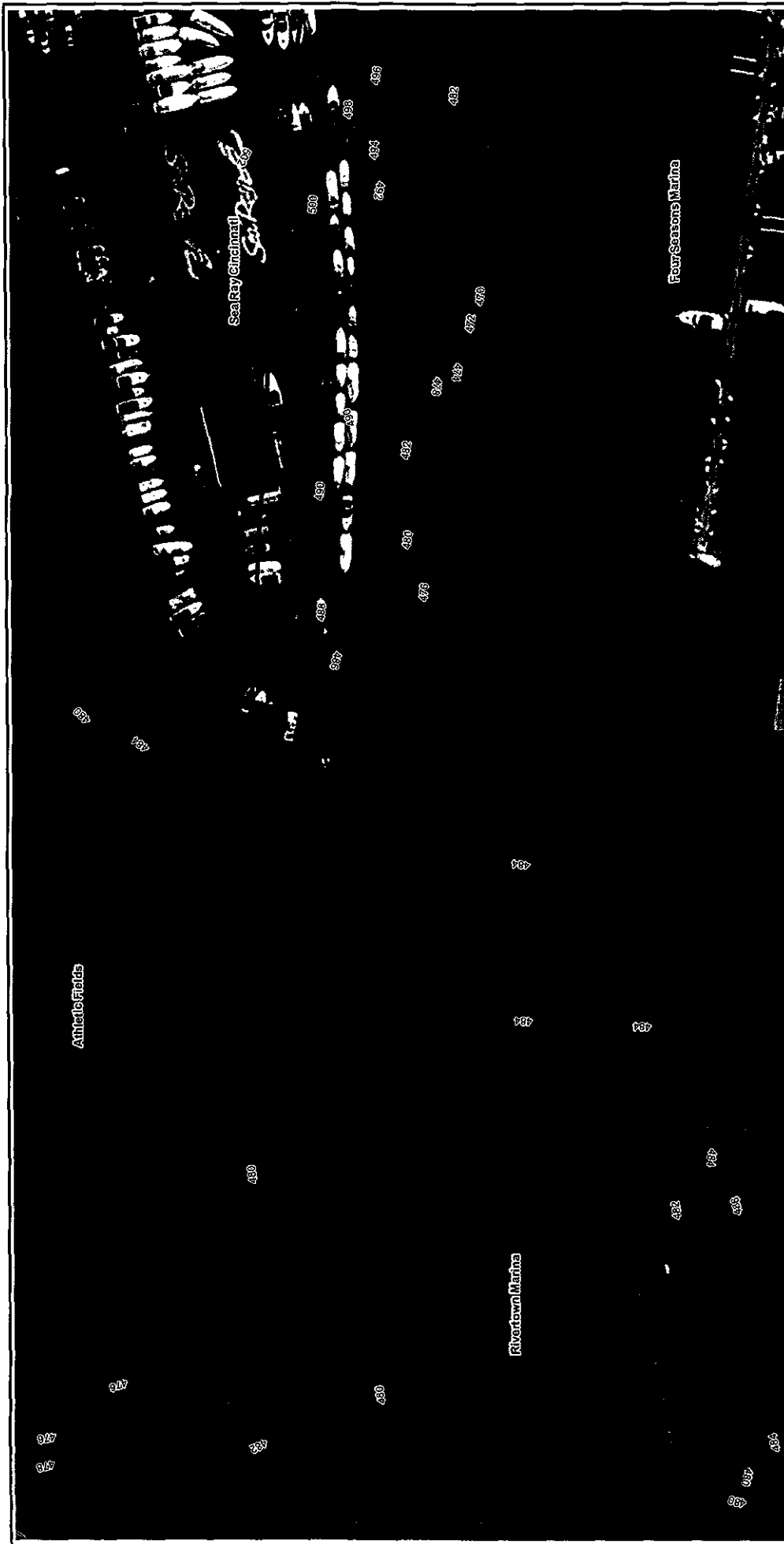
- 2-Foot Contour Interval
- Photograph Location and Direction

North Arrow

Scale

0 75 150 Feet

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
 NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.



SOURCE: USDA, NARS NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
 SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.



NORTH

- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction

- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample
- Point Location
- Ohio River or Backwater Area

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Potential Running Buffalo Clover Habitat
- Voucher Specimen Location with Photograph Number

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
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RUNNING BUFFALO CLOVER SURVEY MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	FIGURE NO:	16
DATE:	SEPTEMBER 23, 2016	DWG SCALE:	1" = 75'	PROJECT NO:	153-230

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SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.



Existing Culvert
2-Foot Contour Interval
Photograph Location and Direction

Delineated Wetland
Palustrine Emergent (PEM)
Palustrine Forested (PFO)
Wetland Determination Sample
Point Location
Ohio River or Backwater Area

Proposed Replacement Pipeline
Variable Width Study Corridor
Potential Running Buffalo Clover
Habitat
Voucher Specimen Location
with Photograph Number

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.



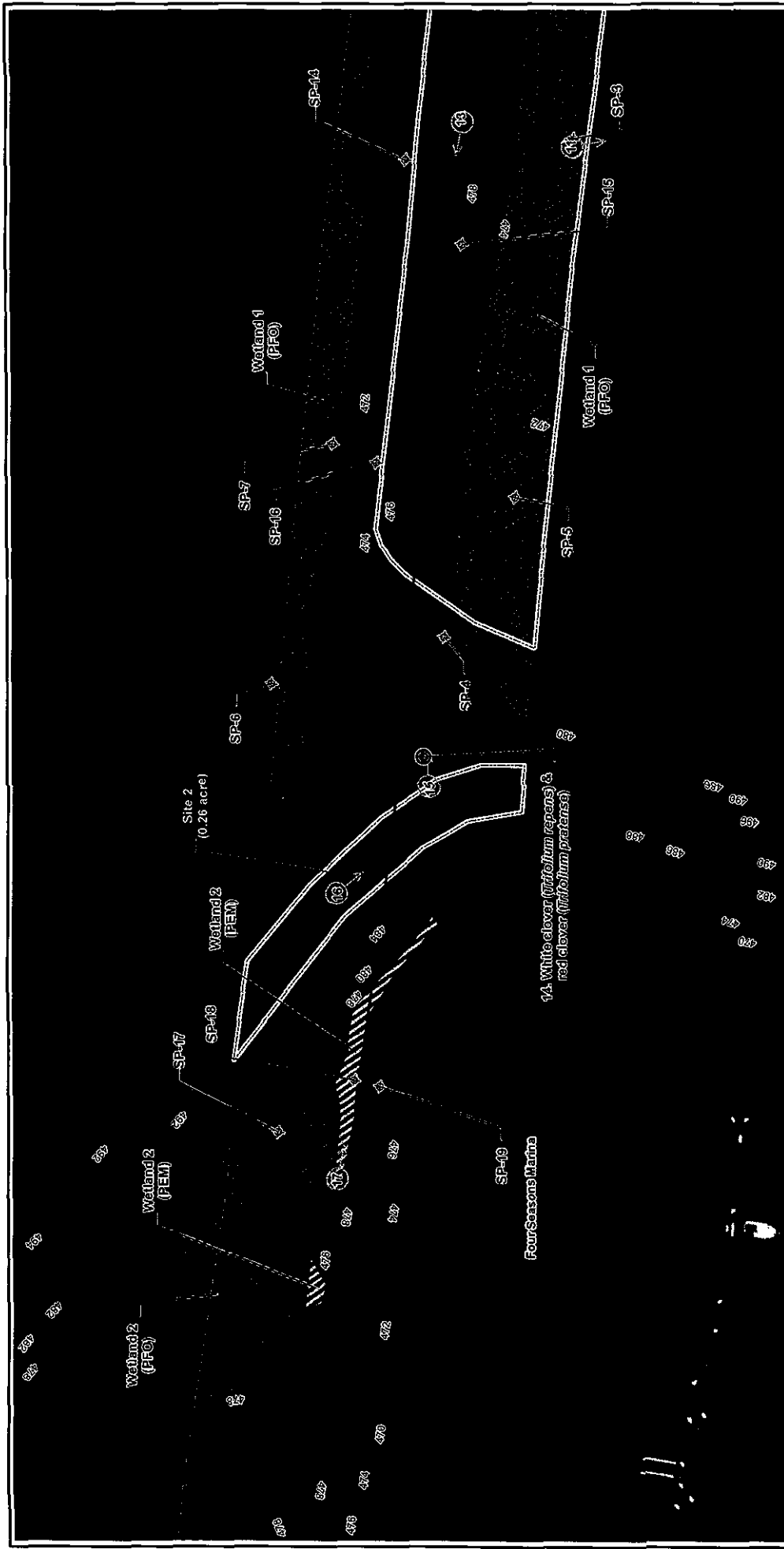
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RUNNING BUFFALO CLOVER SURVEY MAP



DRAWN BY: DMG	CHECKED BY: JAV	APPROVED BY: JAV	FIGURE NO: 17
DATE: SEPTEMBER 23, 2016	DWG SCALE: 1" = 75'	PROJECT NO: 153-230	

Signature on File



SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
 SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

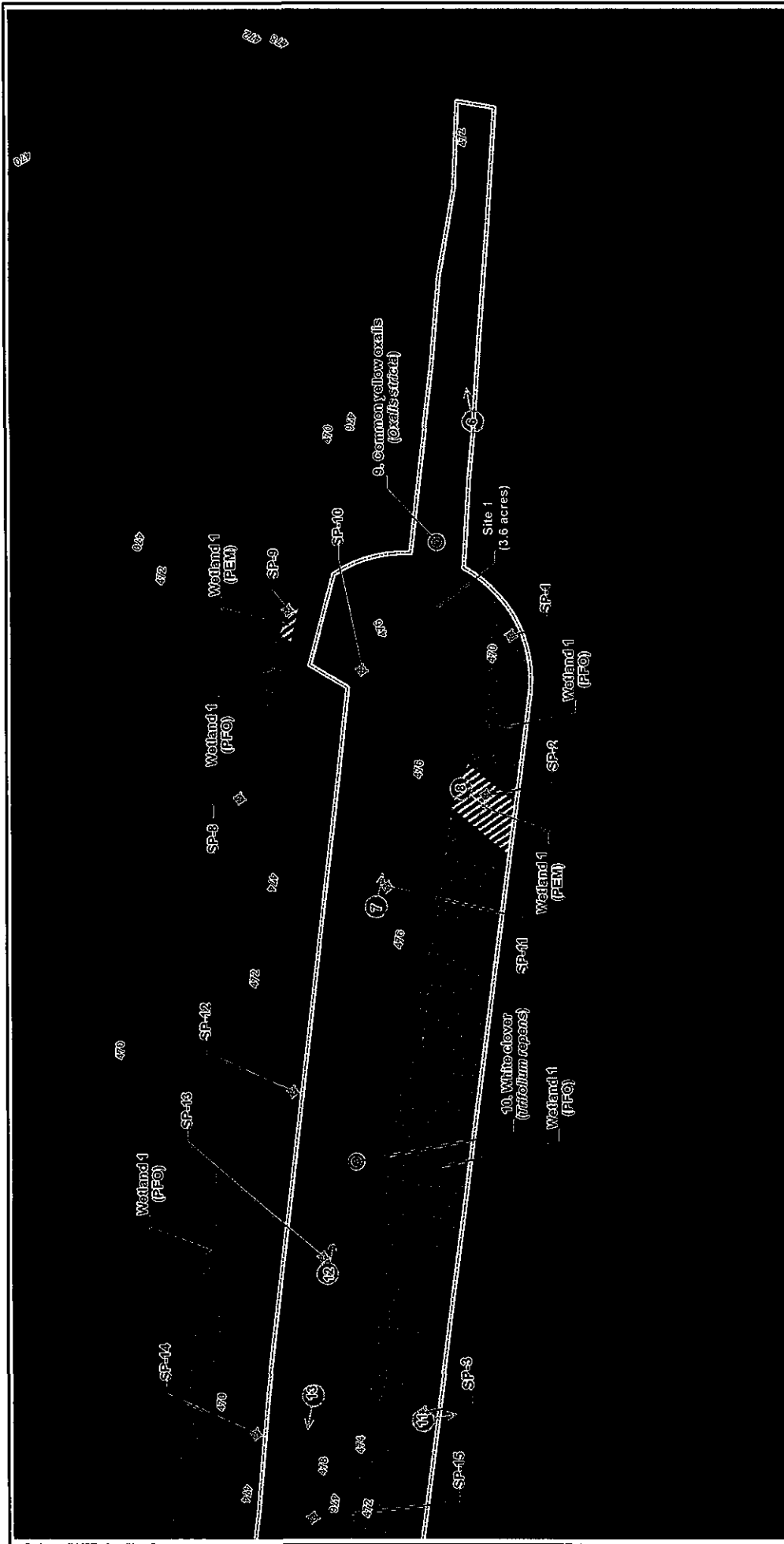
 Civil & Environmental Consultants, Inc. 5899 Montclair Boulevard - Cincinnati, OH 45150 513-985-0226 - 800-759-5814 www.cecinc.com	DUKE ENERGY	
	LINE D000B PIPELINE REPLACEMENT PROJECT CINCINNATI, HAMILTON COUNTY, OHIO	
	RUNNING BUFFALO CLOVER SURVEY MAP	
DRAWN BY: DMG DATE: SEPTEMBER 23, 2016 DWG SCALE: 1" = 75'	APPROVED BY: JAV PROJECT NO: 153-230	FIGURE NO: 18 SIGNATURE ON FILE

 NORTH
 0 75 150 Feet

Delineated Wetland
 Proposed Replacement Pipeline Variable Width Study Corridor
 Potential Running Buffalo Clover Habitat
 Palustrine Emergent (PEM)
 Palustrine Forested (PFO)
 Wetland Determination Sample Point Location
 Ohio River or Backwater Area

Existing Culvert
 2-Foot Contour Interval
 Photograph Location and Direction

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
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SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.



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RUNNING BUFFALO CLOVER SURVEY MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	FIGURE NO:	19
DATE:	SEPTEMBER 23, 2016	PROJECT NO:	153-230		



- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction

- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Potential Running Buffalo Clover Habitat
- Voucher Specimen Location with Photograph Number



NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

Signature on File

APPENDIX A

PHOTOGRAPHS

APPENDIX A-1

REFERENCE POPULATION –
DINSMORE WOODS STATE NATURE PRESERVE



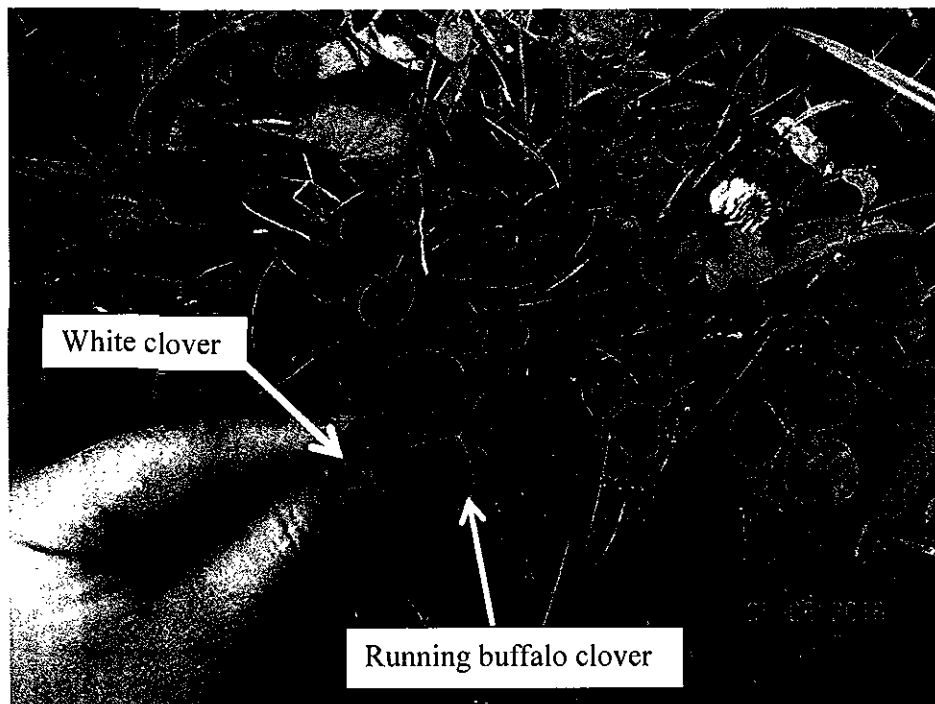
Photograph 1. RBC reference specimen from the Dinsmore Woods State Nature Preserve in Boone County, Kentucky. Note the opposite leaflets on the flowering stem.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 6, 2016



Photograph 2. Another view of RBC reference specimens from the Dinsmore Woods State Nature Preserve. Note the presence of stipules, an identifying characteristic.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 6, 2016



Photograph 3. Comparison of RBC look-alike white clover to running buffalo clover at the Dinsmore Woods State Nature Preserve.



Photograph 4. RBC reference population habitat at the Dinsmore Woods State Nature Preserve.

Line D000B Pipeline Replacement Project
 Cincinnati, Hamilton County, Ohio
 CEC Project 153-230
 Photographed on May 6, 2016



Photograph 5. RBC reference population habitat at the Dinsmore Woods State Nature Preserve.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 6, 2016

APPENDIX A-2

SITE PHOTOGRAPHS



Photograph 6. View of maintained Line D000B ROW, south of proposed southern terminus of Project. Photograph taken facing south-southeast.

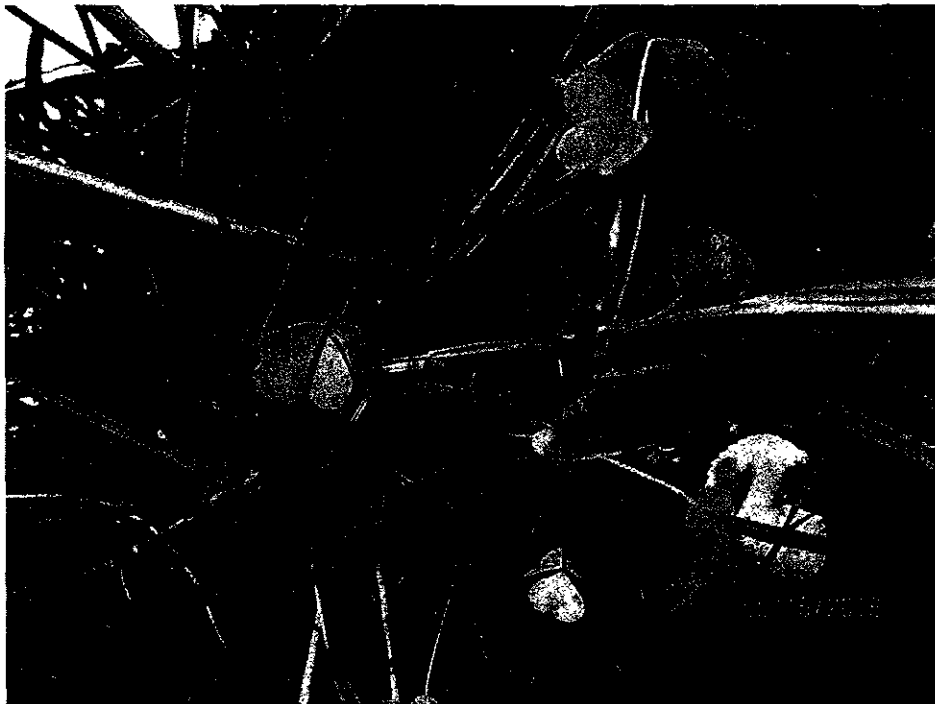


Photograph 7. View of existing Line D000B ROW at the southern terminus of study corridor. Photograph taken facing south.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 8. Representative view of the PEM portion of Wetland 1.
Photograph taken facing north-northwest along existing, maintained utility ROW.



Photograph 9. Common yellow oxalis (*Oxalis stricta*) voucher specimen.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 10. White clover voucher specimen.



Photograph 11. View of the PFO portion of Wetland 1 along the west side of the Line D000B ROW near the southern terminus of the Project.

Photograph taken facing west.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 12. Representative view of elevated and maintained ROW, bisecting Wetland 1 at wetland determination SP-6. Photograph taken facing south.



Photograph 13. Representative view of elevated and maintained Line D000B ROW, bisecting Wetland 1. Photograph taken facing north.

Line D000B Pipeline Replacement Project
 Cincinnati, Hamilton County, Ohio
 CEC Project 153-230
 Photographed on May 16, 18 and 19, 2016



Photograph 14. White and red clover (*Trifolium pratense*) voucher specimens.



Photograph 15. Elevated view of existing bermed, maintained Line D000B ROW, bisecting Wetland 1. Photograph taken facing south.

Line D000B Pipeline Replacement Project
 Cincinnati, Hamilton County, Ohio
 CEC Project 153-230
 Photographed on May 16, 18 and 19, 2016



Photograph 16. View of white clover and other herbaceous vegetation growing along trail or two track that is located on an embankment that formerly functioned as railroad corridor, facing southwest.



Photograph 17. View of the PEM portion of Wetland 2, facing south.

Line D000B Pipeline Replacement Project
 Cincinnati, Hamilton County, Ohio
 CEC Project 153-230
 Photographed on May 16, 18 and 19, 2016

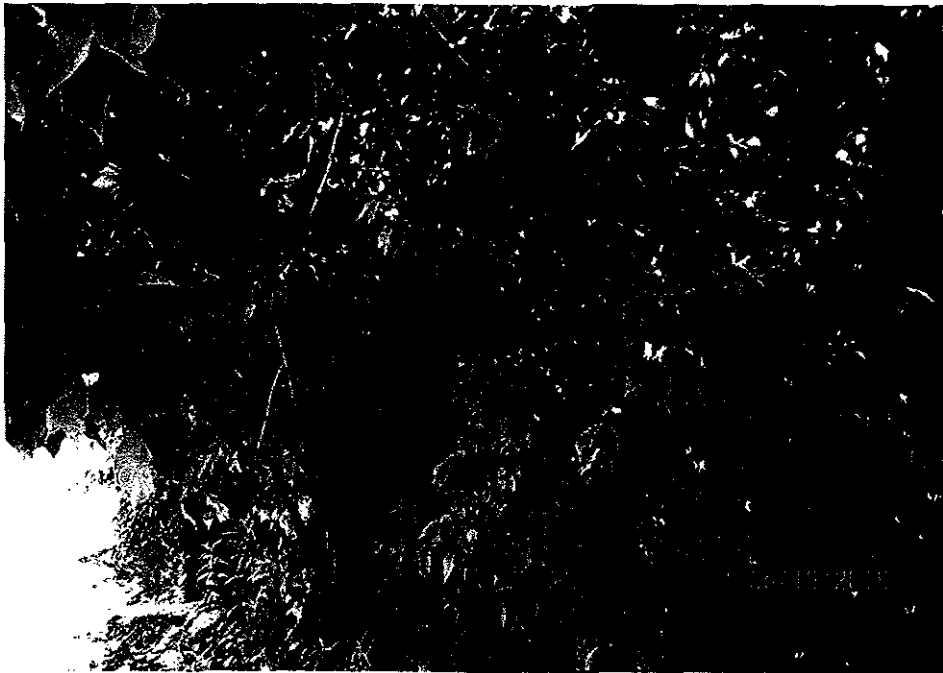


Photograph 18. View of maintained Line D000B ROW, east of Four Seasons Marina.
Photograph taken facing south-southeast.



Photograph 19. View of maintained Line D000B ROW, along Kellogg Avenue Park and Stites Road. Photograph taken facing east-northeast.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 20. View of dense Amur honeysuckle in wooded area along Anchorage Road.



Photograph 21. View of mowed park habitat receiving filtered sunlight and periodic disturbance along east side of Humbert Avenue. Photograph taken facing north-northwest.

Line D000B Pipeline Replacement Project
 Cincinnati, Hamilton County, Ohio
 CEC Project 153-230
 Photographed on May 16, 18 and 19, 2016



Photograph 22. View of groundcover from mowed park habitat along east side of Humbert Avenue.

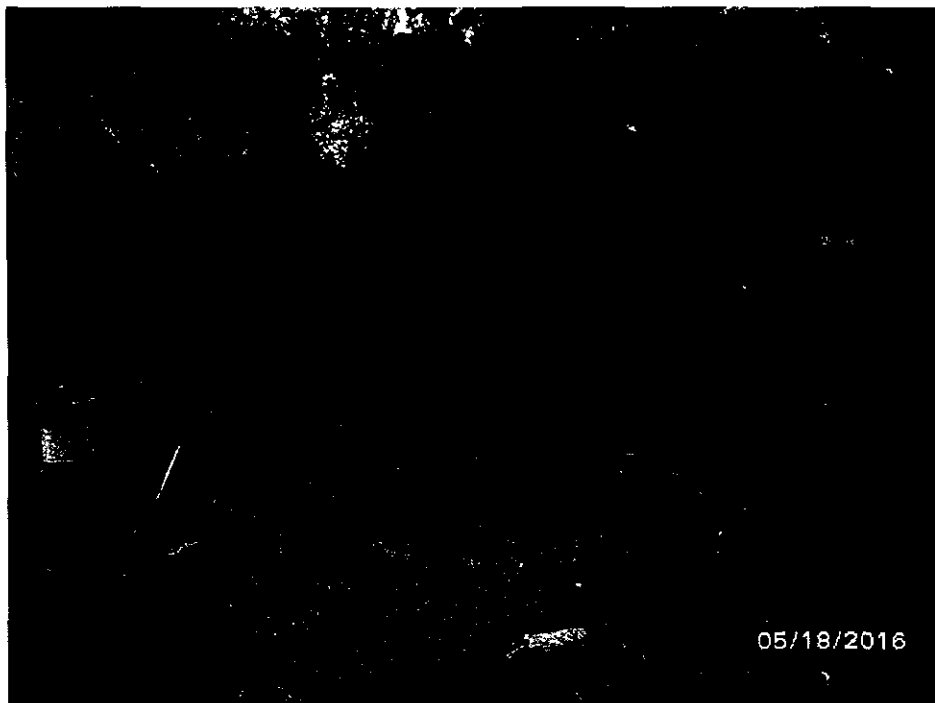


Photograph 23. Another view of mowed park habitat along east side of Humbert Avenue. Photograph taken facing east.

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Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016

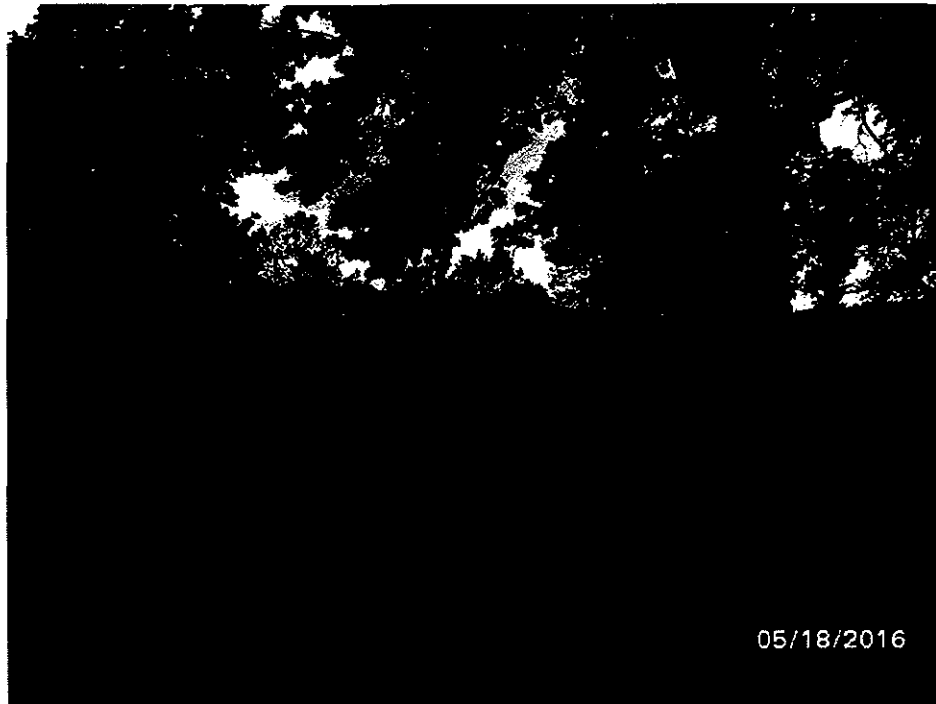


Photograph 24. View of trail and mowed park habitat on west side of Strader Avenue.
Photograph taken facing north-northwest.



Photograph 25. View of mowed park habitat with filtered sunlight on the
west side of Strader Avenue. Photograph taken facing north.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 26. View of mowed park habitat with filtered sunlight at Schmidt Recreation Complex. Photograph taken facing south-southwest.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016

APPENDIX B

**COUNTY DISTRIBUTION OF FEDERALLY-LISTED THREATENED,
ENDANGERED, PROPOSED, AND CANDIDATE SPECIES IN
HAMILTON COUNTY, OHIO**

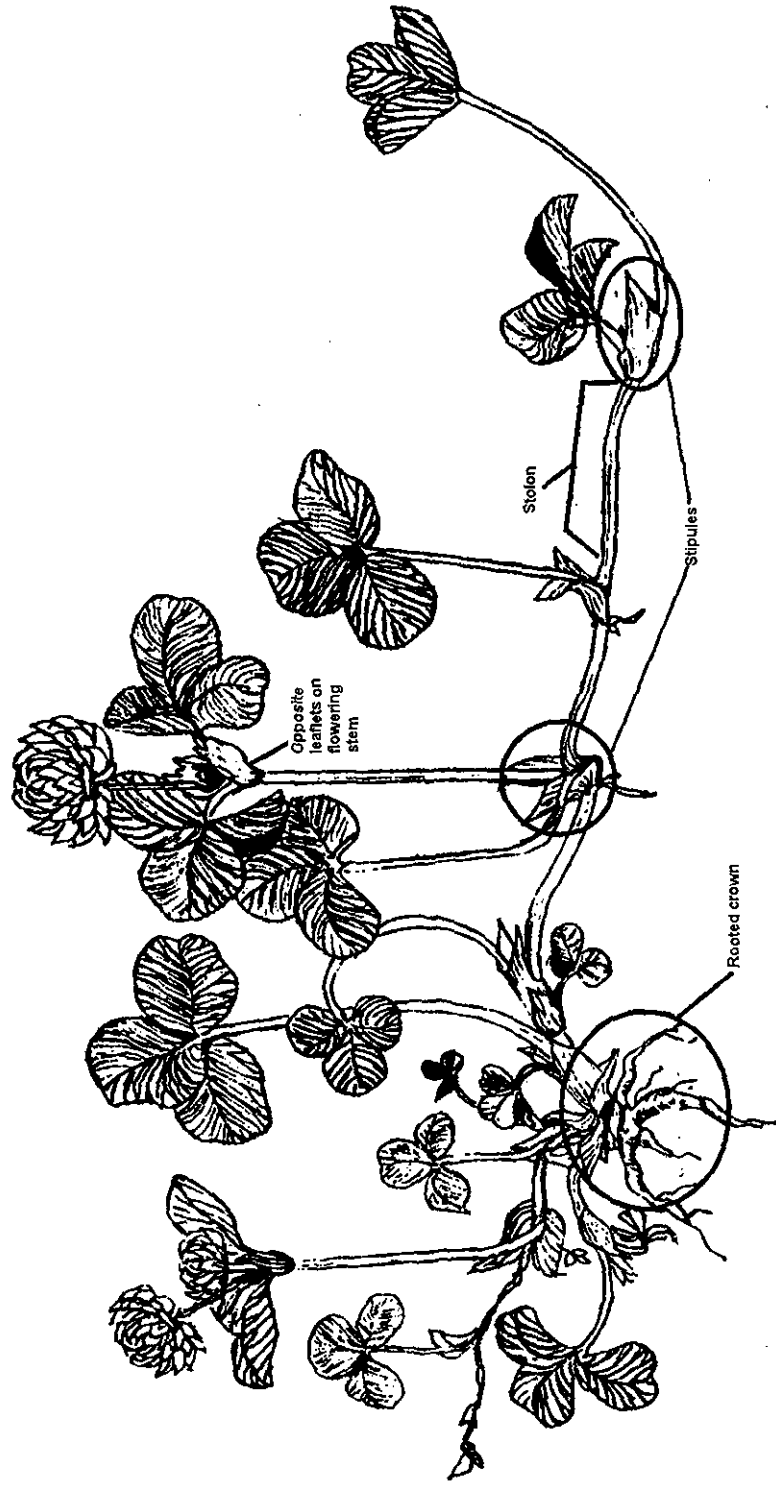
Excerpt from September 2016 USFWS State of Ohio County Distribution List of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species

	Rayed bean (<i>Villosa fabalis</i>)	Endangered	Smaller, headwater creeks, but they are sometimes found in large rivers
	Snuffbox (<i>Epioblasma triquetra</i>)	Endangered	Small to medium-sized creeks and some larger rivers, in areas with a swift current
Guernsey	Indiana bat (<i>Myotis sodalis</i>)	Endangered	Hibernacula = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Northern long-eared bat <i>Myotis septentrionalis</i>	Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. During late spring and summer roosts and forages in upland forests.
Hamilton	Indiana bat (<i>Myotis sodalis</i>)	Endangered	Hibernacula = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Northern long-eared bat <i>Myotis septentrionalis</i>	Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. During late spring and summer roosts and forages in upland forests.
	Fanshell (<i>Cyprogenia stegaria</i>) (= <i>C. irrorata</i>)	Endangered	Found in areas of packed sand and gravel at locations in a good current
	Pink mucket pearlymussel (<i>Lampsilis abrupta</i>)	Endangered	The lower Ohio River and its larger tributaries
	Rayed bean (<i>Villosa fabalis</i>)	Endangered	Smaller, headwater creeks, but they are sometimes found in large rivers
	Sheepnose (<i>Plethobasus cyphus</i>)	Endangered	Shallow areas in larger rivers and streams
	Snuffbox (<i>Epioblasma triquetra</i>)	Endangered	Small to medium-sized creeks and some larger rivers, in areas with a swift current
	Running buffalo clover (<i>Trifolium stoloniferum</i>)	Endangered	Disturbed bottomland meadows; disturbed sites that have shade during part of each day
Hancock	Indiana bat (<i>Myotis sodalis</i>)	Endangered	Hibernacula = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests
	Northern long-eared bat <i>Myotis septentrionalis</i>	Threatened	Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. During late spring and summer roosts and forages in upland forests.
	Clubshell (<i>Pleurobema clava</i>)	Endangered	Found in coarse sand and gravel areas of runs and riffles within streams and small rivers
	Rayed bean (<i>Villosa fabalis</i>)	Endangered	Smaller, headwater creeks, but they are sometimes found in large rivers
Hardin	Indiana bat (<i>Myotis sodalis</i>)	Endangered	Hibernacula = Caves and mines; Maternity and foraging habitat = small stream corridors with well developed riparian woods; upland forests

APPENDIX C

RUNNING BUFFALO CLOVER SCHEMATIC

Running Buffalo Clover Schematic



ATTACHMENT 9

**U.S. FISH AND WILDLIFE SERVICE (USFWS)
AGENCY COORDINATION RESPONSE LETTER**

Van Skaik, Joey

From: Finfera, Jennifer <jennifer_finfera@fws.gov>
Sent: Wednesday, October 26, 2016 3:56 PM
To: Van Skaik, Joey
Subject: Re: Line D000B Pipeline Replacement Project, Hamilton County, Ohio

October 26, 2016

TAILS# 03E15000-2017-TA-0102

Re: Line D000B Pipeline Replacement Project, Hamilton County, Ohio

Dear Mr. Van Skaik,

We have received your recent correspondence regarding the above-referenced project. The project will involve the replacement of 3.45 miles of natural gas pipeline. Approximately 2.47 miles will be collocated within the existing pipeline right-of-way (ROW). The remaining 0.73 miles of pipeline will be located within existing road ROW. 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 projects minimize water quality impacts and impacts to quality fish and wildlife habitat, such as forests, streams, and 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.

ENDANGERED 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.

Clusters of trees are scattered throughout the project site. The largest patch of contiguous forest is located at the southeastern terminus of the project. Approximately 107 potential roost trees were located during the pedestrian survey. However, only 10 potential roost trees will be removed and most of the project will be located within existing ROW. We recommend that trees be saved wherever possible. No winter habitat was observed. You have indicated that tree removal will occur during the winter to limit impacts to bats. 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.

The proposed project lies within the range of **running buffalo clover** (*Trifolium stoloniferum*), a federally listed endangered species. This plant can be found in partially shaded woodlots, mowed areas (lawns, parks, cemeteries), and along streams and trails. Running buffalo clover requires periodic disturbance and a somewhat open habitat to successfully flourish, but cannot tolerate full-sun, full-shade, or severe disturbance. A habitat survey was conducted for this species. Once that was completed then a presence/absence survey was conducted within the areas of suitable habitat. No running buffalo clover was found. Therefore, no significant impacts are expected for this species.

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.), ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. 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 me at (614) 416-8993 ext. 13.

Sincerely,

Jenny Finfera

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Jenny Finfera
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Ecological Services
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Columbus, Ohio 43230

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ATTACHMENT 10

**OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR)
AGENCY COORDINATION RESPONSE LETTER**



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate
Paul R. Baldridge, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6649
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December 15, 2016

Joseph Van Skaik
Civil & Environmental Consultants, Inc.
5899 Montclair Boulevard
Cincinnati, OH 45150

Re: 16-818; Agency Coordination Letter and Threatened and Endangered Species Habitat Assessment, Line D000B Pipeline Replacement Project, CEC Project 153-230

Project: The proposed project involves the replacement of approximately 18,200 feet (3.45 miles) of existing single 20- and 24-inch spiral welded, coated steel, natural gas pipeline with new 20- and 24-inch diameter corrosion protected steel pipe.

Location: The proposed project is located in Cincinnati, 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 the following records at or within a one-mile radius of the project area:

Riverbank paspalum (*Paspalum repens*), T
Maypop (*Passiflora incarnata*), T
Smooth buttonweed (*Spermacoce glabra*), P
Mixed mesophytic forest plant community
River redhorse (*Moxostoma carinatum*), SC
Channel darter (*Percina copelandi*), T
River darter (*Percina shumardi*), T
Loggerhead shrike (*Lanius ludovicianus*), E, FSC
Cave or cavern
Little Miami Scenic River
California Woods – City of Cincinnati Parks

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. This information is provided to

inform you of features present within your project area and vicinity. Additional comments on some of the features may be found in pertinent sections below.

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.

Statuses are defined as: E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; SI = state special interest; A = species recently added to state inventory, status not yet determined; X = presumed extirpated in Ohio; FE = federal endangered, FT = federal threatened, FSC = federal species of concern, FC = federal candidate species.

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: 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 June 1 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, 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. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these 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 along the project route, and within the vicinity of the project area, 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 along the project route, and within the vicinity of the project area, 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, and the type of habitat present along the project route, 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, and the type of habitat present along the project route, 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, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact this species.

The project is within the range of the Kramer's cave beetle (*Pseudanophthalmus krameri*), a state endangered species, and the Ohio cave beetle (*Pseudanophthalmus ohioensis*), a state endangered species. These species are found only in caves. The Ohio Cave Protection Law, Section 1517.21 of the Ohio Revised Code, protects caves from impacts, in turn, protecting the habitat of these species. Therefore, this project is not likely to impact these 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 comments.

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/water-use-planning/floodplain-management#PUB>

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.

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