

# Wetlands Mitigation and Monitoring Plan and Stream Preservation Plan

Ohio Pipeline Energy Network Project

Hartford Township, Trumbull County, Ohio

**March 2014**

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OHIO WETLANDS  
FOUNDATION



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## Introduction

Texas Eastern Transmission, LP (Texas Eastern) is proposing to construct 75.8 miles of new 30-inch diameter mainline pipeline and associated aboveground facilities, including a new compressor station, as part of the Ohio Pipeline Energy Network (OPEN) Project. The OPEN Project will cross portions of Columbiana, Carroll, Jefferson, Belmont, and Monroe Counties in eastern Ohio, and will provide increased pipeline transportation capacity from the Utica and Marcellus shale plays to markets in the Gulf Coast and Southeast regions. In order to compensate for unavoidable temporary impacts to jurisdictional wetlands and streams on the project site, the applicant has retained Ohio Wetlands Foundation (OWF) to complete the development of this off-site mitigation and monitoring plan. OWF proposes to provide stream and wetlands mitigation at the Yankee Creek 3 site, which is located in Hartford Township, Trumbull County, Ohio (Appendix A) along the east side of Warner Road and north of State Route 305 (Appendix B).

This *Mitigation and Monitoring Plan* was prepared for OWF by Davey Resource Group, a division of The Davey Tree Expert Company, using the U.S. Army Corps of Engineers (USACE) rule for compensatory mitigation for losses of aquatic resources. Specifically, this document complies with §332.4 and includes the components listed in paragraphs (c) (2) through (c) (14) of this section of the USACE rule.

Proposed stream and wetlands mitigation for the OPEN Project is summarized in Tables 1 and 2. During the construction of the OPEN Project, on-site restoration will occur at each stream and wetland crossing to return the impacted water resources to pre-existing conditions. In order to compensate for this temporary loss of aquatic resource services and functions, additional stream mitigation will be provided via preservation of 965 linear feet of stream and additional wetlands mitigation will be provided via restoration of 4.15 acres of forested wetlands and 4.305 acres of non-forested wetlands.

*Table 1. Estimated Stream Mitigation Required*

Stream Impacts (linear feet)	Off-site Stream Mitigation Needed <sup>1</sup> (linear feet)
1,930	965

<sup>1</sup> Mitigation is calculated as 0.5 x linear feet of impact. 1:1 mitigation will be accomplished on site by restoring the stream, and 0.5 must be accomplished offsite.

*Table 2. Estimated Wetlands Mitigation Required*

Type	Impact Amount (acres)	Off-site Wetlands Mitigation Needed <sup>1</sup> (acres)
PEM/PSS	8.61	4.305
PFO	1.66	4.15
<b>Totals</b>		<b>8.455</b>

<sup>1</sup> For non-forested wetlands, mitigation is calculated as 0.5 x acre of impact. 1:1 mitigation will be accomplished on site by restoring the wetland, and 0.5 must be accomplished offsite. For forested wetlands, mitigation is calculated as 2.5 x acre of impact.

The Yankee Creek 3 mitigation site is a pooled mitigation site that was constructed in 2009 – 2010 to provide permittee-responsible mitigation to other users including:

- Humility of Mary Health Partners (HMHP, USACE 1999-01145; Ohio EPA ID 010472)
- City of Youngstown for the Exal Corporation (Exal, USACE 2008-2581; Ohio EPA ID 093487)
- MarkWest Liberty Midstream & Resources, LLC (MarkWest, USACE LRP 2013-599; Ohio EPA ID 134176; currently proposed; final permit not issued)

An overview map of the OPEN Project's mitigation area in relation to the other surrounding permittee-responsible mitigation sites is provided in Appendix C. As depicted on this map, the OPEN Project's mitigation sites, totaling 11.4 acres for the wetlands mitigation area and 3.3 acres for the stream preservation area, are separate and distinct from any other existing mitigation areas. The corners of the stream and wetland mitigation areas will be marked with carsonite posts in order to differentiate the OPEN Project's mitigation area from the other mitigation projects at Yankee Creek 3.

Due to a lack of feasible mitigation options in the Upper Ohio (HUC 05030101) Upper Ohio-Wheeling watersheds (HUC 05030106), the applicant proposes to provide mitigation at the Yankee Creek 3 site located in the Shenango River watershed (HUC 05030102) within the same 6-digit HUC watershed (Upper Ohio-Beaver HUC 050301) as where the impacts occur. There are no mitigation banks or in-lieu-fee programs in the Upper Ohio or Upper Ohio-Wheeling watersheds. Other groups, including the local watershed group, Friends of Yellow Creek, were contacted; however they had no available projects that meet the OPEN Project needs. Due to the small area and rural nature of this watershed, wetlands and stream mitigation has historically been challenging to locate within these 8-digit HUC watersheds.

The Yankee Creek 3 mitigation site offers many benefits. It is adjacent to a Wetland Reserve Program easement as well as two other conservation easements forming a contiguous area of over 450 acres of permanently protected wetlands and streams that is mostly forested. The majority of site is already constructed, resulting in little temporal loss of wetlands habitat. The HMHP and Exal mitigation sites have been planted with wetland seed mixes and bare root trees/shrubs as appropriate to meet the objectives of their respective permit conditions. The remainder of the mitigation site, including the portion for the OPEN Project and MarkWest, will need additional plant materials installed to meet the permit conditions that will be contained in their final 401 permit. Finally, the OPEN Project wetlands mitigation area is large enough to accommodate slight changes in final wetlands mitigation acreage if impacts change due to pipe reroutes during the final stages of permitting.

The HMHP and Exal projects are in their fourth year of monitoring. The permit conditions for these projects require that a VIBI assessment be completed during the third year of monitoring. The restored wetlands in other portion of the site have successfully developed as documented by data collected in the third year of monitoring. VIBI scores range from 63 to 67, exceeding the designated performance standard of 50 for the HMHP and Exal sites. Invasive cover is less than 5%, and the average native perennial hydrophyte cover is 75%, meeting the established performance standards.

## Objectives

The primary objective of the OPEN Project's wetlands and stream mitigation plan is to provide additional off-site compensatory mitigation by preserving 965 linear feet of stream and restoring a minimum of 4.15 acres of forested wetlands and 4.305 acres of non-forested wetlands. The wetlands restoration component of the mitigation project will be managed and maintained as described in the *Mitigation Work Plan* section of this document. The restoration of a diverse wetland community results in a net gain in aquatic resource and functions not previously present on the site.

Appendix D contains a site plan depicting the location of the OPEN Project's stream and wetland mitigation areas. The report section entitled *Performance Standards* contains details on how the success of wetlands restoration will be measured.

## Site Selection

The OPEN Project's wetlands and stream mitigation area will be located adjacent to an extensive system of high-quality wetlands and uplands associated with the riparian corridor of Yankee Creek, much of it currently owned by the Matthews family (approximately 1,200 acres). Ohio Wetlands Foundation, working with Mr. Charles Matthews, has protected and restored a significant portion of the Yankee Creek riparian corridor. Mr. Matthews has enrolled over 350 acres of land he owns in the Yankee Creek forested riparian corridor in the Natural Resources Conservation Service Wetlands Reserve Program. Additionally, the mitigation site is south of and adjacent to the 20.7-acre Massassauga Rattlesnake Ranch wetlands mitigation area.

Wetland mitigation projects located on other portions of the Matthews land were placed in conservation easements held by the Cleveland Museum of Natural History (CMNH) from 2004 through 2009. Nearly 500 acres of land owned by Mr. Matthews in the Yankee Creek riparian corridor will be protected by conservation easements through wetlands mitigation and the NRCS Wetland Reserve Program. The extensive amount of riparian corridor protected adjacent to this site adds to the quality of the proposed mitigation project over time.

Ohio Department of Natural Resources has inventoried and documented wood turtles, river otter, and breeding Massassauga rattlesnakes on the Matthews land. Jim Bissell, Curator of Botany at the Cleveland Museum of Natural History, completed a survey of the area during summer 2003 and documented the presence of several listed plant species.

The OPEN Project's wetlands and stream mitigation project will further promote the protection and restoration of the riparian corridor of Yankee Creek; restoring wetland functions on the site will further aid in improving water quality of Yankee Creek. This almost level site contains mostly poorly drained hydric soils which will be receptive to a successful wetlands hydrology restoration. The report section entitled *Baseline Information* contains detailed descriptions of the soils mapped for the site.

## Site Protection Instrument

The Yankee Creek 3 wetlands mitigation site, which includes the 11.4-acre OPEN Project wetlands mitigation area, is protected by an existing permanent conservation easement. The grant of the conservation easement was made by Massassauga Rattlesnake Ranch of Hartford Township, Trumbull County, Ohio, to The CMNH, a non-profit corporation organized under the laws of the State of Ohio. An additional 3.3-acre conservation easement will permanently protect 965 linear feet of perennial stream and its associated forested riparian corridor for the OPEN Project. Copies of the existing recorded conservation easements are included in Appendix E. A similar conservation easement document will be recorded for the stream preservation area once approval of the mitigation plan is received from Ohio EPA and USACE (if applicable); a draft of this easement is included in Appendix E.

## Baseline Information

The area selected for the OPEN Project's wetland mitigation was a fallow agricultural field. Much of the site contained upland agricultural weeds and grasses (Photograph 1). Improving the site hydrology by excavating and disrupting subsurface tile drainage systems allowed wetland plants to prosper and dominate this area.



**Photograph 1** (August 2009). Prior to restoration, the site was a fallow agricultural field.

The nearly level topography of the site ranges in elevation from 993 feet to 998 feet. The property is shown on the Orangeville Quadrangle of the United States Geological Survey (USGS) map (Appendix F).

Yankee Creek flows just east of the site and drains into the Shenango River in Pennsylvania (HUC code 05030102). The Orangeville Quadrangle of the National Wetland Inventory (NWI) map is provided in Appendix G. No NWI-wetlands were mapped for the wetland mitigation site.

Hydric soils and non-hydric soils with hydric inclusions are mapped for the entire site. The site is located on Sheet 41 of the Trumbull County Soil Survey; complete soil descriptions are included in Appendix H. Sebring soils, a poorly drained hydric soil, are mapped for the wetlands restoration area. See Table 3 for a list of soil types mapped for the entire site.

*Table 3. Soil Types Mapped for the Site*

Map Unit	Soil Description
FcA	Fitchville silt loam 0-2 percent slopes <sup>1</sup>
FcB	Fitchville silt loam 2-6 percent slopes <sup>1</sup>
Ho	Holly silt loam <sup>2</sup>
Sb	Sebring silt loam <sup>2</sup>

<sup>1</sup> Non-hydric soil with hydric inclusions

<sup>2</sup> Hydric soil

## Stream Preservation Area

The proposed Yankee Creek 3 stream preservation area provides for the protection of not only a valuable stream resource, but also helps to assure the protection of the surrounding high quality wetland ecosystems. The location of the 965 linear feet of perennial stream proposed for preservation is shown on the map in Appendix D. The aerial photograph shown on the soil survey map in Appendix H and the existing wetlands complexes shown on the NWI map in Appendix G provide an overview of the vicinity surrounding the proposed mitigation site and the vast amount of forested wetlands and riparian zone that surrounds Yankee Creek and the proposed mitigation stream. The wetlands along the Yankee Creek corridor are very high quality forested wetlands that would presumably easily rate as Category 3 wetlands.

Ohio EPA's Qualitative Habitat Evaluation Index (QHEI) assessment of the stream proposed for preservation was completed on September 4, 2013, by Todd Crandall of Davey Resource Group (Appendix I). The stream scored 60 points in the QHEI evaluation, within the range of warmwater habitat. While the QHEI score is not exceptional, the score must be taken in context with the typical scores attained by streams in this region of Ohio. With that in mind, at QHEI score for stream in the region is believed to be very good.

Ohio EPA issued the *2008 Biological and Water Quality Study of Ohio Tributaries to the Shenango River* in March 2011 (Ohio EPA, 2011). No data was collected on the proposed mitigation stream as part of this report. The nearest sampling was completed on Yankee Creek at Route 305. This sample point was non-attaining due to natural limitations of the "wetland stream" conditions that exist along the main branch of Yankee Creek in this area. These conditions are typical of the very low-gradient streams in this area. The report suggests that Ohio EPA should develop an alternative assessment tool to evaluate this type of stream. The proposed mitigation stream has a slightly higher gradient and exhibits a gravel substrate and its canopy is nearly completely closed by forest.

CMNH is interested in protecting the streams on the Matthews family property. CMNH was awarded a Clean Ohio Grant in 2009 to protect streams and wetlands on approximately 800 acres of the Matthews' property that were not protected by conservation easements previously. However, the landowner and CMNH were unable to agree to terms of the permanent conservation easement and the grant was not completed. The proposed mitigation stream is one of the streams that the CMNH wished to protect with the grant.

## Mitigation Work Plan

The mitigation site was constructed in late June through early August 2010 following the Yankee Creek 3 wetlands mitigation and monitoring plan (Appendix J). In-field adjustments required some plan modifications, but the overall mitigation site was designed and constructed to meet the performance criteria established by previously issued USACE and Ohio EPA permits for the Humility of Mary Health Partners and the City of Youngstown, Exal Corporation projects.

A tile search was performed around the perimeter of the restoration area using a track hoe to excavate a trench to a depth of at least 4 feet. The tile discovered in the search was crushed and disabled. The tile lines were excavated 6 to 8 feet inward from the trench and refilled to create 6- to 8-foot plugs to block the flow of water.

To restore microtopography in the mitigation area that was lost through decades of farming, construction equipment was used to create ruts. Small areas were excavated, creating deeper areas surrounding higher mounded areas (Photograph 2). A small earthen embankment with exterior side slopes with a maximum 10:1 grade and interior side slopes with a 15:1 grade was constructed to retain water on the east and a portion of the south side of the mitigation area (Photograph 3). A water control structure was installed in the east side of this berm and an emergency spillway was constructed on the south side of the site. These features were installed to ensure water depth does not exceed 24 inches and the goal for unvegetated open water is met or exceeded. The construction plans are provided in Appendix J.

A total of 2,850 trees and shrubs were planted in early May 2011 within the HMHP and Exal mitigation areas based on habitat preferences of each individual species. *Sparganium eurycarpum* (giant bur-reed) seed was planted along the eastern berm, and wetland seed mix was randomly disseminated throughout the mitigation area. As a result of the extensive planting implemented on the site, native hydrophyte cover dominates the site (Photograph 4).



**Photograph 2** (4-28-11). Small mounds surrounded by deeper areas were created, enhancing the interspersed of the newly restored wetlands.



**Photograph 3** (4-28-11). A berm with a gentle 15:1 slope was constructed to the east and south of the mitigation area. It is one of the features used to maintain the hydrology of the mitigation area



**Photograph 4** (8-16-12). The site continues to become more densely vegetated with a variety of native hydrophytes.

Appendix K provides a list of the planted species, including trees, shrubs, and components of the wetland seed mix that were installed within the HMHP and Exal mitigation areas. Additional plantings of herbaceous plugs, trees, and shrubs will be installed within the OPEN Project’s mitigation area using the species (as available) from the list presented in Appendix K. Species will be selected as materials are available and as appropriate to develop a diverse assemblage of vegetation and to achieve the targeted VIBI goal. Additional plantings will occur in the next appropriate planting season following approval of this plan.

## Maintenance Work Plan

Invasive plant species in the restored uplands and wetlands will be managed on an as-needed basis through active methods of invasive plant control. There will be less than 5% areal vegetative cover of the invasive plant species listed in Table 4 within the restored wetlands.

Invasive plant treatments will occur annually, as needed. Invasive plants species identified within and around the restoration area will be treated before they are able to set seed with a glyphosate herbicide specifically labeled for use in wetlands. Foliar application rates will be in accordance with label specifications. Delineation and reporting of invasive plant cover will occur in Years 1, 3, and 5 of monitoring.

Table 4. Invasive Plant Species

Species	Common Name
<i>Alliaria petiolata</i>	garlic mustard
<i>Elaeagnus umbellata</i>	autumn olive
<i>Lonicera japonica</i>	Japanese honeysuckle
<i>Lonicera maackii</i>	amur honeysuckle
<i>Lonicera morrowii</i>	Morrow’s honeysuckle
<i>Lonicera tartarica</i>	Tararian honeysuckle
<i>Lythrum salicaria</i>	purple loosestrife
<i>Phalaris arundinacea</i>	reed canary grass
<i>Phragmites australis</i>	common reed grass
<i>Polygonum cuspidatum</i>	Japanese knotweed
<i>Rhamnus cathartica</i>	common buckthorn
<i>Rhamnus frangula</i>	glossy buckthorn
<i>Rosa multiflora</i>	multiflora rose

## Ecological Performance Standards

The long-term goal is to develop and manage the site such that wetlands are restored over most of the restoration area.

- Preserve 965 linear feet of stream.
- Restore a minimum total of 4.15 acres of forested wetlands, and 4.305 acres of non-forested wetlands. Non-forested wetlands will initially be present. However, it is anticipated that forested wetlands habitat will likely dominate the wetland mitigation area as the site matures.
- Restored wetlands will meet wetlands criteria as described in the 1987 Corps Manual and successor documents.

- Establish a minimum of 75% areal cover of native hydrophytic vegetation in the restored wetland.
- Areal cover of invasive plant species (Table 4) within the restored wetland will be less than 5%.
- Areal coverage of unvegetated open water within the restored wetland will be less than 10%.
- Vegetation Index of Biotic Integrity (VIBI) for restored wetlands will be 50.

## Monitoring Requirements

The objective of the annual wetlands monitoring is to determine if the ecological performance standards are met or are anticipated to be achieved within the five-year period. The monitoring is specifically designed to evaluate vegetation composition and cover and soil inundation and saturation. Monitoring of the mitigation site will occur annually starting the first full growing season after construction completion. A meeting will be scheduled on site with Ohio EPA and USACE (if applicable) during the third growing season (the spring/summer after the Year 2 monitoring report has been submitted). The purpose of this inspection is to determine if the mitigation project is developing in accordance with the terms of the permits issued to Texas Eastern for the Project by Ohio EPA and USACE (if applicable). If necessary, Ohio EPA and USACE (if applicable) may make recommendations to improve the wetland, and Texas Eastern (in partnership with Ohio Wetlands Foundation) will undertake any reasonable modifications identified by Ohio EPA. If Ohio EPA agrees, and all of the monitoring goals have been met before the end of the five-year monitoring period, monitoring will cease.

Eight photograph monitoring stakes will be installed at appropriate locations within the mitigation area following construction. These will be located based on the projected habitat types and hydrologic situations. The actual location and number of stakes will be dependent on the site conditions after construction. These stakes will be of an ultraviolet (UV), light-resistant polyvinyl chloride (PVC) material, and will have permanent unique numbers. Photo documentation of site conditions will be taken at these locations, and will include the stake and stake number. Subsequent photographs will be taken in the same area and with the same direction of view to allow for an accurate portrayal of site development over an extended time.

## Vegetative Index of Biotic Integrity Monitoring

Monitoring protocols will follow the *Integrated Wetland Assessment Program: Part 9: Field Manual for the Vegetation Index of Biotic Integrity for Wetlands v. 1.4* (Mack, 2007). The Vegetation Index of Biotic Integrity (VIBI) is an intensive statistical wetlands monitoring methodology used by Ohio EPA at mitigation sites. The VIBI measures the ecological condition of wetlands, and from that information inferences can be made given the vegetation and HGM classes of those wetlands, at what level they are performing their corresponding suite of functions. Required results from the VIBI are discussed under the Ecological Performance Standards section of this report.

One focus plot will be established in the restoration area. A VIBI score will be calculated using the data gathered from the focus plot. It is premature at this time to commit to a location of the focus plot until final earthwork is completed and site hydrology is reestablished.

If the mitigation site is not adequately vegetated by the end of the third year, a planting plan will be developed. Plant material will be obtained from nurseries or, if possible, from nearby wetlands.

### **Monitoring Plan**

Monitoring reports will be prepared and submitted annually for five years. The reports will be submitted to Ohio EPA and USACE (if applicable) by December 31 of each monitoring year and will include the following information based upon data collected on an annual site visit during the growing season:

- A copy of the as-built report.
- Color photographs and a photograph location map.
- A comprehensive plant species list.
- Water depths and/or hydrological indicators and soil chromas.
- Comprehensive wetland delineations will be conducted in Years 1, 3, and 5 using the protocols in the 1987 Corps Manual and applicable Regional Supplement, including the use of field forms.
- Vegetation Index of Biotic Integrity (VIBI) monitoring protocols will follow the *Integrated Wetland Assessment Program: Part 9: Field Manual for the Vegetation Index of Biotic Integrity for Wetlands v. 1.4* (Mack, 2007). VIBI monitoring will occur in Years 3 and 5 of monitoring, and VIBI scores and data will be included in the monitoring reports submitted at the end of those years. Monitoring results, including VIBI score, percent areal cover of native hydrophytes, percent unvegetated open water, and percent areal cover of invasive species, will be reported in the monitoring reports.
- A discussion regarding whether or not the objectives of the mitigation project are being met and a plan with an implementation timetable to correct any deficiencies.

### **Long-Term Management Plan**

The CMNH holds a permanent conservation easement on the existing Yankee Creek 3 wetlands mitigation site, which includes the 11.4-acre OPEN Project wetlands mitigation area. The CMNH will also hold the permanent conservation easement on the approximately 3.3-acre stream preservation area. The new conservation easement for the stream mitigation will connect the existing Yankee Creek 3 site with the existing Yankee Creek 2 site. The CMNH will monitor the site to ensure compliance with the terms of the permanent conservation easement and provide management of the property consistent with the terms of the habitat restoration plan as long as financially practical.

### **Adaptive Management Plan**

If Ohio EPA or USACE (if applicable) determines that the site (or any portion thereof) is failing to establish, or that it is not on a trajectory towards meeting the performance goals established in the mitigation plan, Ohio Wetlands Foundation must develop a remedial action plan to correct the deficiencies.

If the mitigation site is not adequately vegetated by the end of the third year, a planting plan will be developed. Plant material will be obtained from nurseries or, if possible, from nearby wetlands.

If the wetlands acreage requirement is not met by the end of the third year, changes will be made on site to increase the wetlands area. This may include changes to the boundaries and/or excavation. If on-site changes are not feasible, off-site mitigation options will be considered, but adequate on-site areas should be available.

If in the fifth year the mitigation wetlands are not performing as proposed, the monitoring period will be extended to correct deficiencies. In the event that revisions to the site to correct deficiencies are not reasonably possible, a new mitigation site will be sought. Any contingency plan will require the signed approval of Ohio EPA and USACE (if applicable) prior to implementation.

### ***Project Funding***

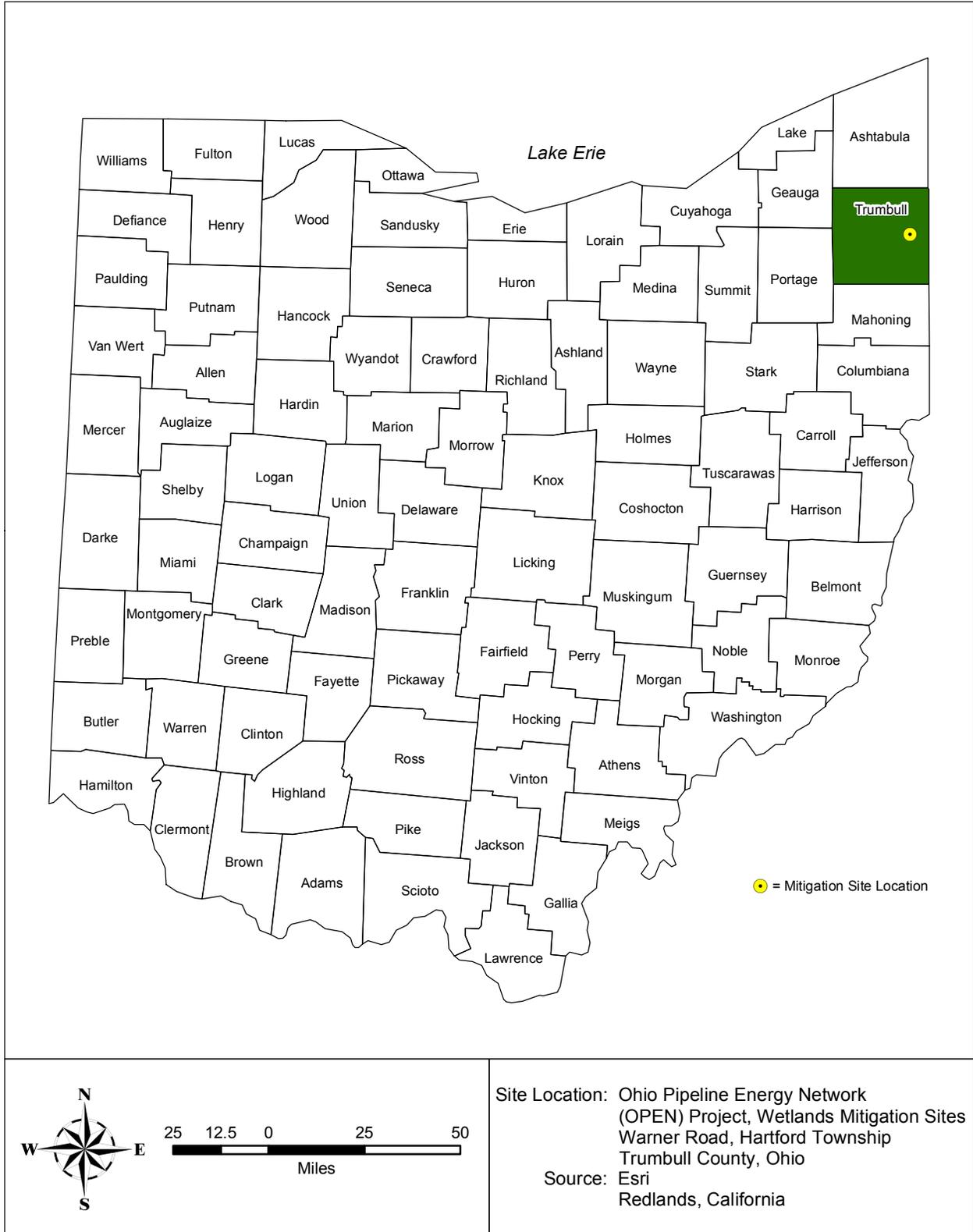
The 8.455 acres of restored wetlands and 965 linear feet of preserved stream provided in this plan will be fully funded by Texas Eastern for the OPEN Project. Verification of funding will be provided to Ohio EPA and USACE (if applicable) by Ohio Wetlands Foundation. As-built construction documents will be submitted to Ohio EPA and USACE (if applicable) within 60 days of construction completion.

### ***References and Professional Staff***

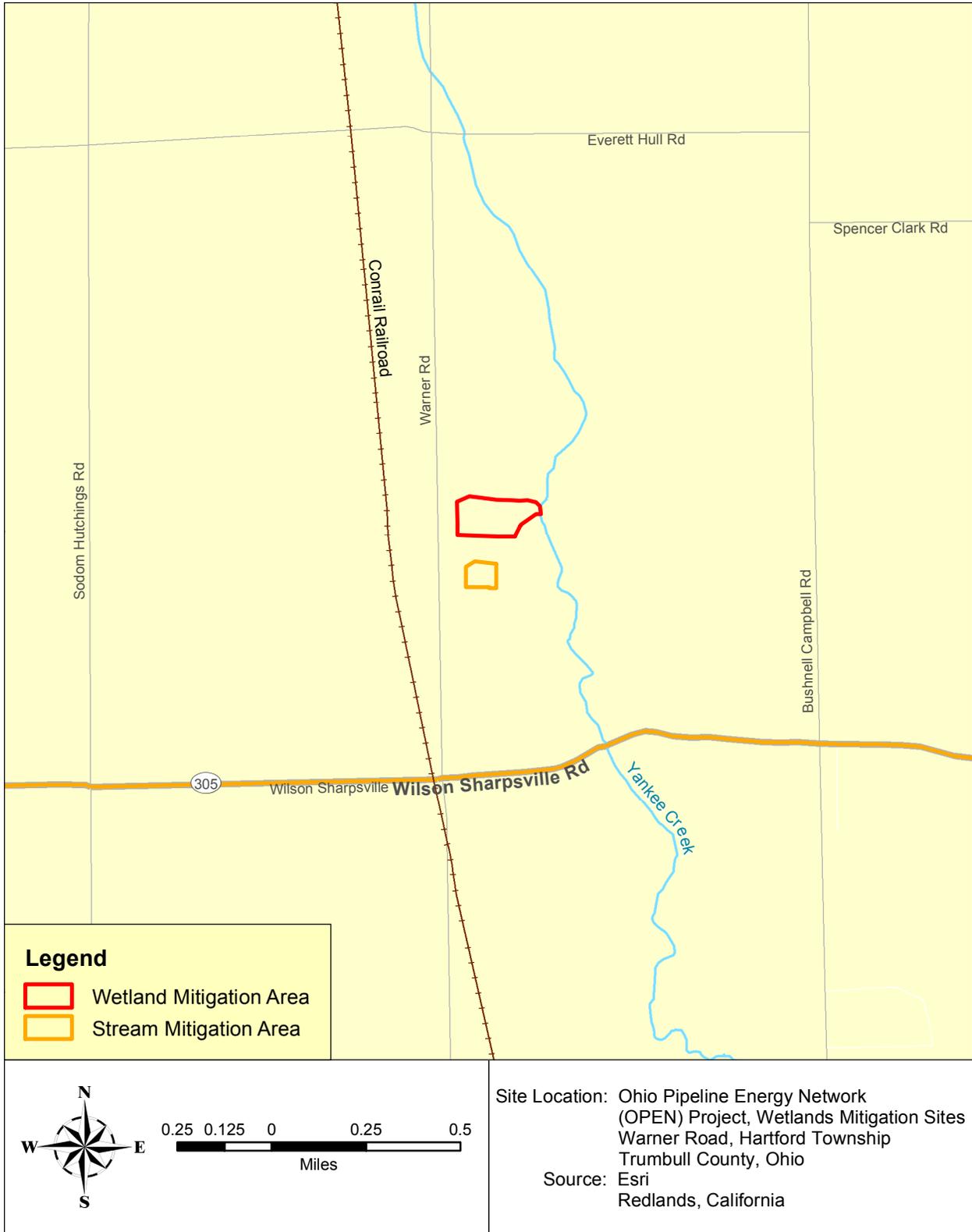
Please see Appendix L for a list of references consulted while conducting the field study and preparing this report and Appendix M for a list of Davey Resource Group professionals involved in the preparation of this document.

# Appendix A

## Location of Trumbull County on Ohio County Map



## Appendix B Location of Mitigation Sites on Highway Map



***Appendix C***  
***Wetlands and Stream Mitigation Location Overview Map***

Prepared for  
**Ohio Wetlands Foundation**

**Yankee Creek 3 Wetlands Mitigation Project**  
 Warner Road, Hartford Township  
 Trumbull County, Ohio

Prepared by  
**DAVEY**  
**RESOURCE GROUP**  
*A Division of The Energy Transfer Company*

Data used to produce this map were collected on April 29, and August 12, 2013



Warner Road

Massassauga Rattlesnake Ranch conservation easement (20.754 acres)

Ohio Pipeline Energy Network (OPEN) wetlands mitigation project area (11.4 acres)

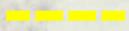
MarkWest wetlands mitigation area (1.16 acres)

Humility of Mary Health Partners (HMHP) wetlands mitigation project area (8.9 acres)

Exal Corporation (Exal) wetlands mitigation project area (2.3 acres)

Ohio Pipeline Energy Network (OPEN) perennial stream preservation area (965 linear feet)

MarkWest perennial stream preservation area (1,046 linear feet)

-  = Conservation areas
-  = Mitigation project areas within conservation areas
-  = Preserved stream segments
-  = Site access



***Appendix D***  
***Wetlands Restoration and Stream Preservation Site Plan***

Prepared for  
**Ohio Wetlands Foundation**  
**Yankee Creek 3 Wetlands Mitigation Project**  
 Warner Road, Hartford Township  
 Trumbull County, Ohio

Prepared by  
**DAVEY**  
**RESOURCE GROUP**  
*A Division of The Shaw Group Company*

Data used to produce this map were collected on April 29, and August 12, 2013



Massassauga Rattlesnake Ranch  
 Conservation Easement

Ohio Pipeline Energy Network (OPEN)  
 (11.4 acres; including 8.5 acres of  
 restored wetlands)

Upland areas to be  
 managed for eastern  
 massassauga rattlesnake  
 habitat

water  
 control  
 structure

berm

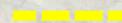
emergency  
 spillway

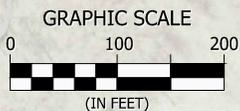
ephemeral  
 stream

Warner Road

Ohio Pipeline Energy Network (OPEN)  
 Perennial stream preservation area  
 (965 linear feet)

3.3 acres

-  = Conservation areas
-  = Mitigation project areas within conservation areas
-  = Berm/embankment/tile search
-  = Site access
-  = Preserved stream segment
-  = Restored wetlands in conservation easement (21.7 acres)



***Appendix E  
Recorded Conservation Easement (Wetlands) and Draft  
Conservation Easement (Stream)***



Instr: 201205070011368 05/07/2012  
P: 1 of 17 F: \$168.00 10:31AM  
Diana Marchese T20120011068  
Trumbull County Recorder EPOHIO WET

### **GRANT OF CONSERVATION EASEMENT AND COVENANT FOR STEWARDSHIP FEES**

This grant of a Conservation Easement (this "Conservation Easement" or this "Grant") is made by Massasauga Rattlesnake Ranch, Inc. ("Grantor"), an Ohio For Profit Corporation whose address is 535 West Third Street, Dover, Ohio 44622, to the Cleveland Museum of Natural History (the "Museum"), an Ohio non-profit corporation organized under the laws of the State of Ohio, whose address is 1 Wade Oval Drive, University Circle, Cleveland, Ohio 44106-1767 ("Grantee").

**WHEREAS**, Grantor is the owner in fee simple of certain real property (the "Protected Property") including 24.881 acres located on Warner Road in Fowler Township, Trumbull County, Ohio, legally described in Exhibit A; and

**WHEREAS**, the Protected Property possesses significant scenic, natural, aesthetic and open space values (collectively, "Conservation Values") of great importance to Grantor, Grantee, and the State of Ohio; and

**WHEREAS**, the Protected Property is located within Grantee's service area and has substantial value as a scenic, natural, aesthetic, and educational resource in its present state as a natural, scenic, open and wooded area, constituting a natural habitat for plants and wildlife; and

**WHEREAS**, the Grantee is a charitable organization referred to in Section 5301.69 of the Ohio Revised Code and Section 501(c)(3) of the Internal Revenue Code of 1986, as amended, and the regulation promulgated there under (the "IRC"), and is authorized to acquire conservation easements in accordance with the provisions of ORC Section 5301.69(B); and

**WHEREAS**, the Grantee is a "qualified organization," as that term is defined in Section 170(h)(3) of the IRC; and

**WHEREAS**, Grantor and Grantee recognize the aforesaid scenic, natural and aesthetic values of the Protected Property in its present state, and have, by the conveyance and acceptance of this Conservation Easement, respectively, the common purpose of (a) conserving and protecting the Protected Property in perpetuity as "a relatively natural habitat of fish, wildlife or plants, or similar ecosystem", as that phrase is used in P.L. 96-541, 26 U.S.C. 170(h)(4)(A)(ii), as amended and in regulation promulgated thereunder, (b) preventing the use or development of the Protected Property in any manner that would

conflict with the maintenance of the Protected Property in its natural, scenic, open, and wooded condition, as suitable habitat for wild flora and fauna of all types; and

**WHEREAS**, “ecological, scientific, educational, and aesthetic value”, “natural, scenic and open condition” and “natural values” as used herein shall, without limiting the generality of the terms, mean a condition that is no less natural than the condition of the Protected Property at the time of this Grant, “natural” meaning that native plants and wildlife are permitted to carry out their lifecycles without detrimental human interference with the exception of legal hunting, trapping, fishing and silviculture operations carried out in accordance with the terms of this easement; and

**WHEREAS**, Grantor and Grantee intend that this Conservation Easement shall be a “conservation easement” as defined in Section 5301.67 of the Ohio Revised Code, and qualify as a “qualified conservation contribution” under IRC Section 170(h)(1); and

**WHEREAS**, Grantee is willing to accept this Conservation Easement subject to the reservations and to the terms, conditions and obligations set out herein; and

**WHEREAS**, Grantee’s obligation entails a pledge to defend the ecological, scientific, educational, and aesthetic value, the natural, scenic and open condition, and natural values of the Protected Property, and significant costs are necessary to carry out this commitment.

**NOW, THEREFORE**, for and in consideration of the premises and the foregoing recitations, and other good and valuable consideration in hand paid, and in further consideration of the mutual promises, covenants, terms, conditions, and restrictions hereinafter set forth, with the intention of making an absolute and unconditional gift, Grantor does hereby grant, give, and convey unto Grantee, its successors and assigns, in perpetuity, a Conservation Easement of the nature and character and to the extent hereinafter set forth, over the Protected Property, for the purposes of conserving, protecting, and maintaining (a) the Natural Areas of the Protected Property as habitat for plants and wildlife and as scenic, natural, and wooded areas, or the natural state that the Protected Property assumes during the course of undisturbed ecological succession as a natural environmental system for the protection and conservation of the biodiversity and ecological resources of the region, and (b) the right of Grantee for visual access to and views of the Protected Property in its scenic, relatively natural and predominately undeveloped, wooded and open condition. Grantor will neither perform, nor knowingly allow others to perform, any act on or affecting the Protected Property that is inconsistent with the covenants contained herein. Grantor authorizes Grantee to enforce these covenants in the manner described in this Grant.

**A. PURPOSES FOR WHICH THIS CONSERVATION EASEMENT IS GRANTED:**

1. With respect to the Natural Areas, this Conservation Easement is granted for the purpose of (a) the protection of a relatively natural habitat of fish, wildlife or plants, or similar ecosystems and (b) the conservation of open space and forest land, together with the right of visual access to and a view of the Protected Property by Grantee and Museum field trip members in its scenic, relatively natural and predominantly undeveloped, wooded and open condition, which will yield a significant community benefit.

**B. TERMS, CONDITIONS, AND RESTRICTIONS OF THIS CONSERVATION EASEMENT:**

1. **Representation as to Authority.** Grantor represents and warrants to Grantee that Grantor (a) has good and marketable title to the Protected Property, (b) there are no mortgages, liens or other encumbrances on the Protected Property or if there are, they have been subordinated to the Conservation Easement, and (c) Grantor has the has the power and authority to make this grant and to carry out its obligations hereunder.
  
2. **Reserved Rights.**
  - (a) Grantor reserves all ordinary rights and privileges of ownership, including the right to sell or lease the Protected Property, as well as the right to continue the use of the Protected Property for all purposes consistent with the purposes described in paragraph A above (the "Conservation Purposes") not destructive of Conservation Values, and not expressly prohibited or conditioned hereunder; provided that nothing in this Grant shall relieve Grantor of any obligation with respect to the Protected Property or restrictions on the use of the Protected Property imposed by law. Among other rights, the Grantor, its successors and assigns, shall specifically be allowed to continue the legal hunting, fishing, and trapping of wildlife on the Protected Property. Nothing contained in this Conservation Easement shall grant to the public a right to enter upon the Protected Property or any portion thereof where no such right existed in the public immediately prior to the execution of this Conservation Easement.
  - (b) Grantor reserves the right to use herbicides, pesticides, fungicides, and natural controls on the Protected Property provided such use is in compliance with all applicable federal, state and local statutes and regulations, but only to the extent such use does not have an adverse impact on the Conservation Values of the Protected Property.
  - (c) Grantor reserves the right to engage in all non-commercial acts or uses on the Protected Property that are not prohibited by governmental statute or regulation, not expressly prohibited or conditioned herein, and not inconsistent with the Conservation Purposes.
  - (e) Grantor reserves the right to undertake meadow maintenance techniques such as controlled burning to preserve the Protected Property's meadow community required by the Endangered Massasauga Rattlesnake and several other rare meadow species, and to remove invasive plants with the assistance of the Museum, or otherwise.
  - (f) Grantor reserves the right to plant anywhere on the Protected Property a diversity of regionally native species of trees, shrubs and herbaceous plant materials in a manner that does not have an adverse impact on the Conservation Values of the Protected Property and is otherwise consistent with the Conservation Purposes.
  - (g) Grantor shall notify Grantee, in writing, before exercising any right reserved by Grantor in this Conservation Easement that may have an adverse impact on the Conservation Values.

3. **No Building.** No buildings or other structures, including, but not limited to, residences or outbuildings, commercial or industrial structures, billboards or advertising of any kind, fences (except for deer exclosures to protect threatened flora or natural communities from over-abundance of fauna), camping accommodations and mobile homes shall be hereafter erected or placed on the Protected Property. Signs such as “no trespassing” signs and signs identifying the Protected Property as being subject to this Grant are permitted. A maximum of two (2) Hunting stands and blinds (e.g. duck blinds and deer tree stands) are permitted on the Protected Property so long as they are no larger than necessary to accommodate a maximum of three persons, they are temporary and do not penetrate the bark of any trees.
4. **No Dumping.** There shall be no dumping of soil, trash, ashes, garbage, waste, or other unsightly or offensive material, nor any placement of underground storage tanks (other than tanks related to septic systems), on or in the Protected Property. The land application, storage and placement of municipal, commercial or industrial sewage sludge or liquid generated from such sources for agricultural purposes may not be undertaken on the Protected Property.
5. **No Filling or Excavation.** Except as otherwise provided herein and except for rights reserved under existing pipeline easement agreements of record against the Protected Property as of the date hereof, there shall be no fillings, excavations, construction of roads or other changes in the general topography of the Protected Property in any manner except to improve or restore wetlands habitat, or as necessary for forest management and silviculture purposes under best management practices, placement of on-site sourced invasive weed seed free soil or fill or excavation may occur to change the general topography and the maintenance of existing and permitted foot trails and any soil disturbance caused by the forces of nature; provided, however, that (a) existing trails for walking may be widened and new trails may be created so long as (i) they do not exceed eight (8) feet in width, (ii) they are not covered with impervious materials, and (b) such placement, excavation, widening or creation minimizes soil disturbance, which is necessary to prevent the spread of invasive plant species, and is not detrimental to water quality, significant natural habitats, or the scenic qualities of the Protected Property and are otherwise consistent with the Conservation Purposes and the Conservation Values.
6. **No Mining or Drilling.** There shall be no mining or drilling for minerals, oil, gas or similar substances on the Protected Property provided however, that nothing herein shall prohibit or restrict the exploration and production of oil and gas from beneath the Protected Property in a manner that will not adversely affect the Conservation Values of the Protected Property. Nor shall there be any future extraction or removal of any minerals by any surface mining methods. There are several existing wells on or near the protected property that will be allowed to continue operation until they are deemed no longer producing, at which point they will be required to be capped according to Ohio Department of Natural Resources Division of Mineral Resource Management Guidelines. The plugging of the well is the responsibility of the well-owner and it must be supervised by the Trumbull County Oil and Gas Inspector or other suitable agent that may exist at the time the well is plugged.

7. **No Habitat Disturbance.** Native shrubs, vines and herbaceous plants may not be removed from the property except as deemed necessary by Grantor, with the approval of Grantee, to arrest the spread of non-native insects, such as the Viburnum leaf beetle. Only 1/5<sup>th</sup> of each existing field may be mowed each year to allow for butterfly and Massasauga Rattlesnake habitat at a minimum blade height of 6 inches from the ground. There shall be no introduction of animals other than native wildlife under a reintroduction plan coordinated by the Grantee with the Ohio Department of Natural Resources. There shall be no removal or destruction of native growth in the open and wooded areas, use of fertilizers, spraying with biocides, introduction of non-native animals or disturbance or change in the natural habitat, except in accordance with good forestry and husbandry practices (and for purposes of enhancing flora and fauna biodiversity) including, but not limited to, the removal of diseased trees from the Protected Property (with the understanding that, if present in sufficient numbers, as least four (4) dead trees per acre will allowed to remain on the protected property).
8. **No Power Lines or Communications Towers.** No additional power transmission lines or communications towers shall be erected, other than utility lines for structures, uses and activities permitted on the Protected Property, nor shall interests in the Protected Property be granted for such purpose.
9. **No Detrimental Use.** There shall be no activities, actions, or uses detrimental or adverse to water conservation, erosion control, soil conservation, and fish and wildlife or habitat conservation on the Protected Property.
10. **No Manipulation of Water Courses.** There shall be no manipulation or alteration of natural water courses, marshes, or other water bodies or activities or uses detrimental to water purity, provided that existing dams and ponds on the Protected Property, if any, may be maintained, repaired or replaced. The Protected Property includes all water and water rights, ditches and ditch rights, springs and spring rights, reservoir and storage rights, wells and groundwater rights, and other rights in and to the use of water historically used on or otherwise appurtenant to the Protected Property (collectively, the "Water Rights"). Grantor shall not transfer, encumber, sell, lease or otherwise separate the Water Rights from the Protected Property or change the historic use of the Water Rights without the consent of Grantee. Grantor shall not abandon or allow the abandonment of, by action or inaction, any of the Water Rights without the consent of Grantee.
11. **Limitation on Motor Vehicles.** The operation of motorized vehicles on the Protected Property, including but not limited to, automobiles, trucks, and all-terrain vehicles will be permitted only along existing roadways, and trails on the property by the Grantor and Grantee's designees for purposes of traversing the Protected Property in accordance with good husbandry practices, including use in connection with the control of non-indigenous species and enhancement of wildlife habitat. Additionally vehicle access will be limited to vehicles suitable for traversing trails and which do not cause erosion to the Protected Property and are not used in a manner inconsistent with the purposes and terms of this Conservation Easement. Motorized vehicle use, consistent with the Forestry Best Management Practices, may occur between 37.5 meters (120 feet) and 90 meters (288 feet) from the edge of wetlands, including vernal pools only between

November 15 and March 15. All motorized vehicles shall be excluded from these areas between March 15 and November 15 excepting for existing trail crossings into the wetland buffer areas. Motor vehicles that have left the Protected Property or travelled through areas of invasive species should be hosed down off the Protected Property to remove any and all dirt, mud, seeds, and soil to prevent the spread of invasive weed seeds.

12. **No Density Yield; Transfer of Development Rights.** The acreage constituting the Protected Property shall not be taken into consideration and may not be used when calculating the lot area for any future development. Grantor may not transfer (whether or not for compensation) any development rights allocated to the Protected Property.
13. **No Subdivision.** The Protected Property shall not be subdivided, and the Grantor shall maintain the Protected Property, and all interests therein, under common ownership, i.e. the parcels comprising the Protected Property as of the date of this Grant may be conveyed only in their entirety. The subdivision of the Protected Property, recording of a subdivision plan, partition of the Protected Property, or any other attempt to divide the Protected Property into more than the existing legal parcels without the permission of Grantee is prohibited. Grantor shall give Grantee the Right of First Refusal for 60 days from date of first written notice to Grantee if Grantor desires to sell any and all parcels.
14. **No Commercial Recreational Use.** There shall be no commercial recreational use of the Protected Property except those uses considered "de minimus" according to the provisions of Section 2031(c)(8)(B) of the IRC.
15. **Management as a Natural Area.** Except as otherwise herein provided, the Natural Areas of the Protected Property shall be managed in a manner consistent with its conservation as a natural, scenic, open, and wooded area. Beyond legal hunting, fishing, and trapping, any activity or construction not consistent with the conservation values that might endanger the natural or scenic state of the Natural Areas of the Protected Property is prohibited. Grantee reserves the right to conduct certain scientific and/or research activities on the property including but not limited to collecting biological specimens, the research and monitoring of endangered and threatened species of plants and animals, biological surveys, prescribed burns, and wildlife management activities such as erecting nest boxes and hacking platforms.
16. **Real Property Interest.** This Conservation Easement constitutes a real property interest immediately vested in Grantee.
17. **Right to Enter and Inspect.** Grantee, or its duly authorized representatives, may enter the Protected Property at all reasonable times for the purposes of inspecting or conducting stewardship of the Protected Property in order to further the objectives and determine compliance with the terms of this Conservation Easement. The Grantee will make a good faith attempt to give 5 days advance notice except in the case of an emergency when no advance notice need be given. The Grantee shall be liable only for damage or harm for which it may be solely responsible.

18. **Permission of Grantee.** Where Grantor is required to obtain Grantees permission, approval or consent for a proposed action hereunder, such permission, approval or consent shall (a) be sought and given in writing, (b) in all cases be obtained by Grantor prior to Grantor taking the proposed action and (c) not be unreasonably conditioned, delayed or withheld and shall be based on Grantee's evaluation of the impact of the request on the Conservation Values of the Protected Property. Grantee shall grant or withhold its approval in writing within thirty (30) days after receipt of Grantors written request. In the case of withholding of approval, Grantee shall notify Grantor in writing with reasonable specificity of the reasons for withholding of approval, and the conditions, if any, on which approval might otherwise be given.

19. **Grantee's Remedies Upon Violation.**

(a) The Grantee shall have primary responsibility for enforcing this Conservation Easement and taking action to correct violations. Accordingly, if the Grantee determines that Grantor is in violation of the terms of this Conservation Easement or that a violation is threatened, the Grantee shall give written notice to Grantor of such violation and demand corrective action sufficient to cure the violation and, where the violation involves injury to the Protected Property resulting from any use or activity inconsistent with the purpose of this Conservation Easement, to restore the portion of the Protected Property so injured. If Grantor fails to cure the violation within 10 days after receipt of notice thereof from the Grantee, or under circumstances where the violation cannot reasonably be cured within a 10-day period, fail to begin curing such violation within the 10-day period, or fail to continue diligently to cure such violation until finally cured, the Grantee may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Conservation Easement, to enjoin the violation, ex parte as necessary, by temporary or permanent injunction, to recover any damages to which it may be entitled for violation of the terms of this Conservation Easement or injury to any Conservation Values, including damages for the loss of scenic, aesthetic, or environmental values, and to require the restoration of the Protected Property to the condition that existed prior to any such injury. Without limiting Grantor's liability therefore, the Grantee, in its sole discretion, may apply any damages recovered to the cost of undertaking any corrective action on the Protected Property. If the Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the Conservation Values of the Protected Property, the Grantee may pursue its remedies under this paragraph without prior notice to Grantor or without waiting for the period provided for cure to expire. The Grantee's rights under this paragraph apply equally in the event of either actual or threatened violations of the terms of this Conservation Easement, and Grantor agrees that the Grantee's remedies at law for any violation of the terms of this Conservation Easement are inadequate and that the Grantee shall be entitled to the injunctive relief described in this paragraph, both prohibitive and mandatory, in addition to such other relief to which the Grantee may be entitled, including specific performance of the terms of this Conservation Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies or being required to

post a bond for any injunctive relief. The Grantee's remedies described in this paragraph shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity.

- (b) Costs of Enforcement. Any costs incurred by Grantee in enforcing the terms of this Conservation Easement against Grantor, including, without limitation, costs of suit and attorneys' fees, and any costs of restoration necessitated by Grantor's violation of the terms of this Conservation Easement, shall be borne by Grantor if Grantee prevails in any such action.
20. Upkeep and Maintenance. Grantor shall be solely responsible for the upkeep and maintenance of the Protected Property to the extent required by law. Grantee shall have no obligation for the upkeep or maintenance of the buildings and grounds of the Protected Property, other than those aforementioned Conservation Values.
21. Liability and Indemnification. Grantor shall indemnify Grantee against, and hold Grantee harmless from, any and all loss, cost, claim, liability, or expense (including reasonable attorneys' fees) arising from or with respect to the Protected Property, unless solely due to the gross negligence or willful misconduct of Grantee. Grantor shall keep the Protected Property insured with comprehensive general liability insurance, with limits deemed adequate by Grantee, acting reasonably, against claims for personal injury, death and property damage, cause Grantee to be named as an additional insured on all such insurance policies, and provide evidence of such insurance to Grantee as of the effective date of this Conservation Easement and periodically thereafter as such insurance coverage is renewed or replaced. Such evidence shall be in the form of a certificate of insurance which (a) indicates that Grantee is insured and (b) requires written notice from the insurer to Grantee not less than 30 days before making a material change in or canceling such coverage.
22. Taxes. Grantor shall pay all taxes validly assessed and levied against the Protected Property, including any such taxes validly levied and assessed against this Conservation Easement by competent authorities, it being understood that no property taxes are presently levied against conservation easements generally in the state of Ohio, nor, to the knowledge of the parties, are such taxes contemplated by any taxing authority with jurisdiction over the Protected Property. At its option, Grantee may, but shall not be obligated to, discharge any tax lien (or other encumbrance) at any time levied or placed on the Protected Property should Grantor fail to do so. Before doing so, Grantee shall give Grantor notice of its intention to discharge any such tax lien or other encumbrance and Grantee shall not proceed unless Grantor has failed to discharge such tax lien or other encumbrance within thirty (30) days after the giving of such notice. Grantor shall reimburse Grantee on demand for any payment so made.
23. Incorporation in Subsequent Instruments. Grantor agrees that the terms, conditions, restrictions, and purposes of this Conservation Easement shall be incorporated by reference in any subsequent deed, or other legal instrument, by which Grantor divests itself of either the fee simple title to, or its possessory interest in, the Protected Property.

24. **Amendment.** This Grant may be amended only with the written consent of Grantee and Grantor. It may be amended to clarify a clerical error, to make a technical correction or to resolve an ambiguity but Grantee shall not consent to any amendment of this Conservation Easement (a) unless the effect of such amendment is neutral with respect to or enhances the Conservation Purposes and such amendment otherwise qualifies under the Grantee's policy then in effect respecting conservation easement amendments, or (b) if such amendment would adversely affect the qualification of this Conservation Easement or the status of Grantee under any applicable laws, including Sections 170(h) and 501(c)(3) of the IRC and the laws of the state of Ohio. Any such amendment shall be consistent with the purposes of this Grant and shall comply with Section 170(h) and Section 2031(c) of the IRC. Any such amendment shall also be consistent with Section 5301.67 through 5301.70 of the Ohio Revised Code and any regulations promulgated pursuant to such code. Any such amendment shall be recorded in the Official Records of Trumbull County, Ohio. Nothing in this paragraph shall require Grantor or Grantee to agree to any amendment or to consult or negotiate regarding any amendment. Grantor and Grantee may amend this Conservation Easement to be more restrictive to comply with the provisions of Section 2031(c) of the IRC.
25. **Assignment.** The Grantee may transfer or assign all or less than all of its rights and obligations under this Conservation Easement to another qualified organization as described below if, in such Grantee's opinion, the purposes of this Conservation Easement are better served by this Conservation Easement being held in the name of another organization or in the name of more than one organization which is a qualified land conservation easement holding organization at the time of transfer under Section 170(h) (3) of the IRC and the laws of the state of Ohio (especially Section 5301.69 of the Ohio Revised Code), and is acceptable to Grantee. The Grantor specifically states that the Humane Society of the United States and the People for the Ethical Treatment of Animals (or other entities with similar missions) are not acceptable organizations to transfer the Conservation Easement to. The selection of the transferee shall be made by the Board of Trustees of such Grantee or, if such Grantee has ceased to exist, the statutory or court appointed successors of the last Board of Trustees of such Grantee. As a condition of such transfer, such Grantee shall require that the Conservation Purposes that this Conservation Easement is intended to advance continue to be carried out. Grantee shall give Grantor 30 days to comment on transferee.
26. **Extinguishment.**
- (a) **Limitation.** If future circumstances render the purpose of this Conservation Easement impossible to accomplish, this Conservation Easement can only be terminated or extinguished, whether with respect to all or part of the Protected Property, by judicial proceedings in a local court of competent jurisdiction. Unless otherwise required by applicable law at the time, in the event of any sale of all or a portion of the Protected Property (or any other property received in connection with an exchange or involuntary conversion of the Protected Property) after such termination or extinguishment, and net of any costs or expenses associated with such sale, Grantor and the Grantee shall divide the proceeds from such sale with 60% of the net proceeds to the Grantor and 40% percent

of the net proceeds to the Grantee. All such proceeds received by the Grantee shall be used by the Grantee in a manner consistent with the Conservation Purposes of this Conservation Easement.

(b) **Eminent Domain.** It is the intent of this Grant to convey to Grantee, its successors and assigns, such an interest in the Protected Property as is sufficient to prohibit the exercise of the power of eminent domain by public utility and any other body or person. If all or any part of the Protected Property is taken under the power of eminent domain by public, corporate, or other authority, or otherwise acquired by such authority through a purchase in lieu of a taking, Grantor and Grantee shall join in appropriate proceedings at the time of such taking to recover the full value of the interests in the Protected Property subject to the taking and all incidental or direct damages resulting from the taking. All expenses reasonably incurred by Grantor and Grantee in connection with such taking shall be paid out of the recovered proceeds. Grantor and the Grantee shall be respectively entitled to compensation from the balance of the recovered proceeds in conformity with the provisions of paragraphs 27(a). The respective rights of Grantor and Grantee set forth in this paragraph 28 shall be in addition to, and not in limitation of, any rights they may have at common law.

28. **Notice of Proposed Transfer.** Grantor shall give Grantee notice of the proposed transfer of any interest in the Protected Property at least 20 days prior to such transfer; provided that failure to so notify Grantee shall not in any way affect the validity of this Conservation Easement or limit its enforceability.
29. **Stewardship Fee.** Grantor hereby covenant, promise, and agree to pay, or to cause the closing agent in connection with the future transfer for value of all or less than all of the Protected Property to pay, to the Grantee, or any successor to the Grantee having stewardship obligations pertaining to the Protected Property, at closing, a Stewardship Fee (the "Fee") in an amount equal to two percent (2%) of the full consideration paid, including that portion of such consideration attributable to improvements, other contiguous land, whether or not subject to easement, and any fixtures permanently attached to the Protected Property and such contiguous land. In the event the Fee is not paid as provided herein, Grantee shall have the right to file a lien against the Protected Property to secure the continuing obligation of Grantor and its successors and assigns in title to pay the Fee; provided that the lien securing payment of the Fee shall be subordinate to this Conservation Easement and to the lien of any first mortgage on the Protected Property. Such lien may be enforced and/or foreclosed in accordance with the laws of the State of Ohio.
30. **Rules of Convenience.** For convenience, masculine pronouns used in this document include the feminine and neuter pronouns, and the singular tense includes the plural tense. Additionally, all references to either Grantor or Grantee include their respective successors and assigns unless otherwise noted. The captions in this Conservation Easement are for convenience only and are not intended by the parties to affect the meaning or interpretation of the terms thereof.

31. **Counterparts.** This Conservation Easement may be executed simultaneously in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.
32. **Applicable Law; Severability.** This Conservation Easement is intended to be performed in accordance with, and only to the extent permitted by all applicable laws, ordinances, rules and regulations of the State of Ohio. If any provision of this Conservation Easement or the application thereof to any person or circumstance shall, for any reason and to any extent, be invalid or unenforceable, the remainder of this Conservation Easement or application of such term or provision to persons or circumstances other than those to which it is held invalid or unenforceable shall not be affected thereby but rather shall be enforced to the fullest extent permitted by law.
33. **Reasonableness Standard.** Grantor and Grantee shall follow a reasonableness standard and shall use their best efforts to make any determinations that are necessary or are contemplated to be made by them (either separately or jointly) under this Conservation Easement in a timely manner and shall cooperate with one another and shall take all other reasonable action suitable to that end.
34. **Entire Agreement.** This instrument sets forth the entire agreement of the parties with respect to this Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to this Conservation Easement, all of which are merged herein.
35. **Notices.** Any notice, demand, request, consent, approval, or communication that any party desires or is required to give to any other shall be in writing and either served personally or sent by first class mail, postage prepaid, addressed as follows:

To Grantor:                      Massasauga Rattlesnake Ranch, Inc.  
   P.O. Box 565,  
   Dover, OH 44622

To Grantee:                        The Cleveland Museum of Natural History  
   One Wade Oval Circle  
   Cleveland, Ohio 44106  
   Attention: Dr. James K. Bissell

or to such other address as any of the above parties from time to time shall designate by written notice to the others.

37. **Effective Date; Mortgage Subordination.** Grantor and Grantee intend that the restrictions arising hereunder take effect on the day and year this Conservation Easement is recorded in the Official Records of Trumbull County, Ohio, after all required signatures have been affixed hereto. Grantors shall cause any mortgage encumbering the Protected Property to be subordinated to this Grant effective as of the date this Grant is so recorded. Grantee may re-record this instrument at any time as may be required to preserve their rights in this Conservation Easement.

38. **No Extinguishment Through Merger.** Grantor and Grantee herein agree that (a) this Conservation Easement shall not be extinguished through the doctrine of merger in whole or in part in view of the public interest in its enforcement, and (b) should all or a portion of the fee interest subject to this Conservation Easement and the Conservation Easement, itself, come to be owned by the same owner, such owner as promptly as practicable shall assign this Conservation Easement of record to another holder in conformity with the requirements of paragraphs 26 and 28. The instrument of assignment shall refer to the provisions of this paragraph, and shall contain confirmatory language suitable to reimpose this Conservation Easement to the extent, if any, necessary to continue it in force.

39. **Termination of Rights and Obligations.** A party's rights and obligations under this Conservation Easement terminate upon transfer of that party's interest in the Protected Property, except that liability for acts or omissions occurring during any party's period of ownership prior to such party's transfer shall survive transfer.

**TO HAVE AND TO HOLD**, unto and to the use of Grantee, its successors and assigns, forever. The covenants agreed to and the terms, conditions, restrictions, and purposes imposed as aforesaid shall be binding not only upon Grantor and Grantee, but also their respective successors and assigns, and all other successors to them in interest, and shall continue as a servitude running in perpetuity with the Protected Property.

IN WITNESS WHEREOF, Grantor has executed this instrument this 26 day of MARCH, 2012.

SIGNED IN THE PRESENCE OF:



(Signature of Witness)

KEITH CAHOON  
(Print Name of Witness)

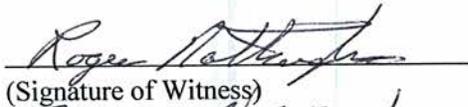
GRANTOR:



Timothy J. Matthews

President

Massasauga Rattlesnake Ranch, Inc.



(Signature of Witness)

Roger Nottingham  
(Print Name of Witness)

STATE OF OHIO )  
) SS:  
COUNTY OF \_\_\_\_\_ )



BEFORE ME, a Notary Public in and for said County and State, personally appeared the above named, Massasauga Rattlesnake Ranch, Inc. represented by Timothy J. Matthews, its President, who acknowledged that he did execute the foregoing instrument and that the same is his own free act and deed. IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at \_\_\_\_\_ County, Ohio this March day of \_\_\_\_\_, 2012.  
My Commission Expires January 19, 2017

Nancy L. Damiano

Notary Public  
**ACCEPTANCE**

The Grantee does hereby consent to and accept the within Conservation Easement and all obligations imposed thereby.

IN WITNESS WHEREOF, the undersigned has executed and delivered this Acceptance this 20 day of April, 2012.

The Grantee: Cleveland Museum of Natural History

By: Karen J. Menn  
(Signature of Witness)

Evalyn Gates  
Evalyn Gates,  
Executive Director  
Cleveland Museum of Natural History

KAREN J. MENN  
(Print Name of Witness)

[Signature]  
(Signature of Witness)

And: \_\_\_\_\_

RICHARD C. HEISLMAN  
(Print Name of Witness)

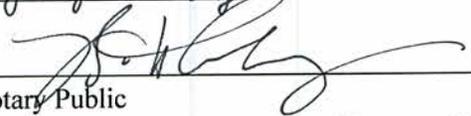
STATE OF OHIO )  
) SS.  
COUNTY OF CUYAHOGA )

Before me, a Notary Public in and for said County and State, personally appeared the above named THE CLEVELAND MUSEUM OF NATURAL HISTORY, represented by Evalyn Gates, its Executive Director, and \_\_\_\_\_, its \_\_\_\_\_, who acknowledged that they did execute the foregoing instrument and that the same is their own free act and deed as such representatives and the free act and deed of such Corporation.



Instr: 201205070011368 05/07/2012  
 P: 14 of 17 F: \$168.00 10:31AM  
 Diana Marchese T20120011068  
 Trumbull County Recorder EPOHIO WET

In testimony whereof, I have hereunto set my hand and affixed my official seal at  
*Cuyahoga County*, Ohio, this 20 day of April, 2012.

  
 \_\_\_\_\_  
 Notary Public

My Commission expires:

Embossed Hereon Is My  
 State Of Ohio Notary Public Seal  
 My Commission Expires May 23, 2016  
 BETH WHALLEY

**NOTARIAL  
 SEAL**

Instrument prepared by:  
 The Cleveland Museum of Natural History  
 One Wade Oval  
 University Circle  
 Cleveland, Ohio 44106  
 (216)231-4600



Instr: 201205070011368 05/07/2012  
P: 15 of 17 F: \$168.00 10:31AM  
Diana Marchese T20120011068  
Trumbull County Recorder EPOHIO WET

www.jobshenderson.com

Tel: 740.344.5451  
Fax: 740.344.5746

59 Grant Street  
Newark, Ohio 43055

**DESCRIPTION FOR A 24.881 ACRE  
CONSERVATION EASEMENT  
EXHIBIT A**

Situated in the State of Ohio, County of Trumbull, Hartford Township, Section 42 and 43, Township 5, Range 2, being part of that 284.91 acre tract as conveyed to Massassauga Rattlesnake Ranch by deed of record in Instrument No. 200006300024292, all references being to those of record in the Recorder's Office, Trumbull County, Ohio, said 24.881 acre Conservation Easement being more particularly bounded and described as follows:

**Commencing** for reference at a point at the intersection of the centerline of Warner Road with the centerline of Wilson Sharpsville Road;

Thence along the centerline of Warner Road, **North 01°13'26" West, 3027.43 feet** to a point;

Thence leaving said centerline and across said 284.91 acre tract, **North 88°46'34" East, 30.00 feet** to an iron pin set, said iron pin set being the **Point of Beginning** for the herein described tract;

Thence continuing across said 284.91 acre tract, the following thirteen (13) courses and distances;

**North 01°13'26" West, 972.94 feet** to an iron pin set;

**North 67°24'34" East, 190.40 feet** to a point;

**South 83°09'33" East, 381.55 feet** to a point;

**South 87°49'05" East, 325.94 feet** to a point;

**North 85°32'09" East, 109.78 feet** to a point;

**South 76°07'07" East, 118.19 feet** to a point;

**South 44°40'21" East, 85.70 feet** to a point;

**Exhibit A – 24.881 ACRES**  
**PAGE 2**

**South 04°30'45" East, 114.18 feet to a point;**

**South 27°23'30" East, 75.55 feet to an iron pin set;**

**South 01°17'25" East, 639.91 feet to an iron pin set;**

**South 89°59'22" West, 495.46 feet to an iron pin set;**

**North 83°44'22" West, 480.72 feet to an iron pin set, and ...**

**South 58°44'16" West, 267.70 feet to the Point of Beginning, and containing 24.881 acres** more or less, according to a survey made by Jobes Henderson and Associates, Inc. in June of 2010;

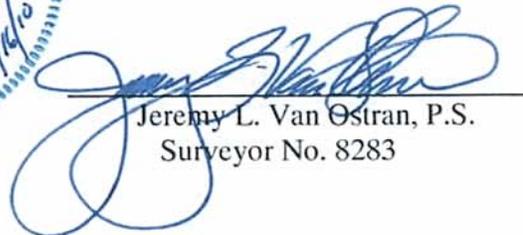
The bearings in the above description are based on Ohio State Plane Coordinate System, North Zone, NAD83, GEOID03.

All iron pins set are 5/8" in diameter rebar by 30" in length with red identification caps marked "J&H, PS 8283".

Subject to all valid and existing easements, restrictions and conditions of record.

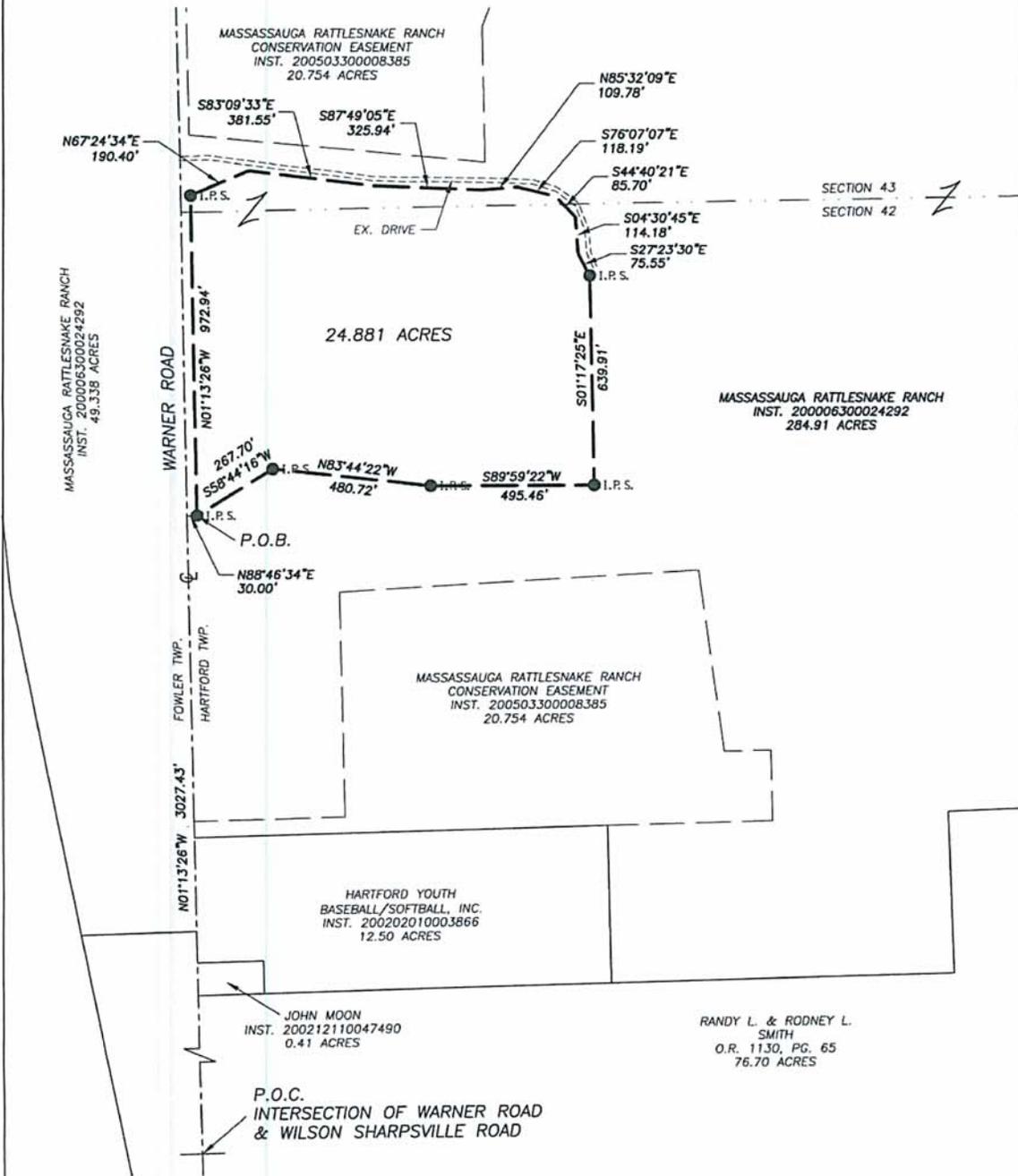


June 15, 2010  
S:/09-062/Conservation Easement.doc

  
Jeremy L. Van Ostran, P.S.  
Surveyor No. 8283

# EXHIBIT FOR CONSERVATION EASEMENT

Situated in the State of Ohio, County of Trumbull, Township of Hartford,  
Being a part of Section 42 and 43, Township 5, Range 2

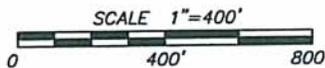


**PERTINENT DOCUMENTS USED**  
Trumbull County Tax Maps  
Trumbull County Auditor's records  
All Recorded Information shown  
were used as source documents.

**NOTES:**  
This survey was prepared without the benefit of a title policy, there may be easements or Right-of-Way which exist & are not shown.

- LEGEND**
- ⊙ P.F. - Pipe Found
  - I.P.F. - Iron Pin Found
  - ⊗ - Railroad Spike Found
  - I.P.S. - Iron pin set 5/8" rebar with red I.D. cap "J&H PS#8283"

**BASIS OF BEARINGS:**  
BEARINGS SHOWN HEREON ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, OHIO NORTH ZONE, NAD 83, GEOID 03



This Survey Prepared For: **OHIO WETLANDS FOUNDATION**

**JEREMY L. VAN OSTRAN**  
P.S. 8283

**JEREMY LEWIS VAN OSTRAN**  
REGISTERED SURVEYOR

S:\09-062\dwg\Conservation.dwg  
REVISED  
DRAWN: M/JM  
CHECKED: J/VL  
F.B.

**Jobes Henderson & ASSOCIATES**  
Breaking Ground | Breaking Boundaries  
www.jobeshenderson.com

Tel: 740.344.5451  
Fax: 740.344.5746  
59 Grant Street  
Newark, Ohio 43055

DATE: 6-15-10 ORDER NO. 09-062

Instr.: 201205070011368  
P: 17 of 17  
F: \$168.00  
Diana Marchese  
Trumbull County Recorder  
EPOH10 MET  
05/07/2012  
10:31AM

## **GRANT OF CONSERVATION EASEMENT AND COVENANT FOR STEWARDSHIP FEES**

This grant of a Conservation Easement (this “Conservation Easement” or this “Grant”) is made by Massasauga Rattlesnake Ranch, Inc. (“Grantor”), an Ohio For Profit Corporation whose address is 535 West Third Street, Dover, Ohio 44622, to the Cleveland Museum of Natural History (the “Museum”), an Ohio non-profit corporation organized under the laws of the State of Ohio, whose address is 1 Wade Oval Drive, University Circle, Cleveland, Ohio 44106-1767 (“Grantee”).

**WHEREAS**, Grantor is the owner in fee simple of certain real property (the “Protected Property”) including XXXX acres located on Warner Road in Fowler Township, Trumbull County, Ohio, legally described in Exhibit A; and

**WHEREAS**, the Protected Property possesses significant scenic, natural, aesthetic and open space values (collectively, “Conservation Values”) of great importance to Grantor, Grantee, and the State of Ohio; and

**WHEREAS**, the Protected Property is located within Grantee’s service area and has substantial value as a scenic, natural, aesthetic, and educational resource in its present state as a natural, scenic, open and wooded area, constituting a natural habitat for plants and wildlife; and

**WHEREAS**, the Grantee is a charitable organization referred to in Section 5301.69 of the Ohio Revised Code and Section 501(c)(3) of the Internal Revenue Code of 1986, as amended, and the regulation promulgated there under (the “IRC”), and is authorized to acquire conservation easements in accordance with the provisions of ORC Section 5301.69(B); and

**WHEREAS**, the Grantee is a “qualified organization,” as that term is defined in Section 170 (h)(3) of the IRC; and

**WHEREAS**, Grantor and Grantee recognize the aforesaid scenic, natural and aesthetic values of the Protected Property in its present state, and have, by the conveyance and acceptance of this Conservation Easement, respectively, the common purpose of (a) conserving and protecting the Protected Property in perpetuity as “a relatively natural habitat of fish, wildlife or plants, or similar ecosystem”, as that phrase is used in P.L. 96-541, 26 U.S.C. 170(h)(4)(A)(ii), as amended and in regulation promulgated thereunder, (b) preventing the use or development of the Protected Property in any manner that would

conflict with the maintenance of the Protected Property in its natural, scenic, open, and wooded condition, as suitable habitat for wild flora and fauna of all types; and

**WHEREAS**, “ecological, scientific, educational, and aesthetic value”, “natural, scenic and open condition” and “natural values” as used herein shall, without limiting the generality of the terms, mean a condition that is no less natural than the condition of the Protected Property at the time of this Grant, “natural” meaning that native plants and wildlife are permitted to carry out their lifecycles without detrimental human interference with the exception of legal hunting, trapping, fishing and silviculture operations carried out in accordance with the terms of this easement; and

**WHEREAS**, Grantor and Grantee intend that this Conservation Easement shall be a “conservation easement” as defined in Section 5301.67 of the Ohio Revised Code, and qualify as a “qualified conservation contribution” under IRC Section 170(h)(1); and

**WHEREAS**, Grantee is willing to accept this Conservation Easement subject to the reservations and to the terms, conditions and obligations set out herein; and

**WHEREAS**, Grantee’s obligation entails a pledge to defend the ecological, scientific, educational, and aesthetic value, the natural, scenic and open condition, and natural values of the Protected Property, and significant costs are necessary to carry out this commitment.

**NOW, THEREFORE**, for and in consideration of the premises and the foregoing recitations, and other good and valuable consideration in hand paid, and in further consideration of the mutual promises, covenants, terms, conditions, and restrictions hereinafter set forth, with the intention of making an absolute and unconditional gift, Grantor does hereby grant, give, and convey unto Grantee, its successors and assigns, in perpetuity, a Conservation Easement of the nature and character and to the extent hereinafter set forth, over the Protected Property, for the purposes of conserving, protecting, and maintaining (a) the Natural Areas of the Protected Property as habitat for plants and wildlife and as scenic, natural, and wooded areas, or the natural state that the Protected Property assumes during the course of undisturbed ecological succession as a natural environmental system for the protection and conservation of the biodiversity and ecological resources of the region, and (b) the right of Grantee for visual access to and views of the Protected Property in its scenic, relatively natural and predominately undeveloped, wooded and open condition. Grantor will neither perform, nor knowingly allow others to perform, any act on or affecting the Protected Property that is inconsistent with the covenants contained herein. Grantor authorizes Grantee to enforce these covenants in the manner described in this Grant.

**A. PURPOSES FOR WHICH THIS CONSERVATION EASEMENT IS GRANTED:**

1. With respect to the Natural Areas, this Conservation Easement is granted for the purpose of (a) the protection of a relatively natural habitat of fish, wildlife or plants, or similar ecosystems and (b) the conservation of open space and forest land, together with the right of visual access to and a view of the Protected Property by Grantee and Museum field trip members in its scenic, relatively natural and predominantly undeveloped, wooded and open condition, which will yield a significant community benefit.

**B. TERMS, CONDITIONS, AND RESTRICTIONS OF THIS CONSERVATION EASEMENT:**

1. **Representation as to Authority.** Grantor represents and warrants to Grantee that Grantor (a) has good and marketable title to the Protected Property, (b) there are no mortgages, liens or other encumbrances on the Protected Property or if there are, they have been subordinated to the Conservation Easement, and (c) Grantor has the has the power and authority to make this grant and to carry out its obligations hereunder.
  
2. **Reserved Rights.**
  - (a) Grantor reserves all ordinary rights and privileges of ownership, including the right to sell or lease the Protected Property, as well as the right to continue the use of the Protected Property for all purposes consistent with the purposes described in paragraph A above (the "Conservation Purposes") not destructive of Conservation Values, and not expressly prohibited or conditioned hereunder; provided that nothing in this Grant shall relieve Grantor of any obligation with respect to the Protected Property or restrictions on the use of the Protected Property imposed by law. Among other rights, the Grantor, its successors and assigns, shall specifically be allowed to continue the legal hunting, fishing, and trapping of wildlife on the Protected Property. Nothing contained in this Conservation Easement shall grant to the public a right to enter upon the Protected Property or any portion thereof where no such right existed in the public immediately prior to the execution of this Conservation Easement.
  - (b) Grantor reserves the right to use herbicides, pesticides, fungicides, and natural controls on the Protected Property provided such use is in compliance with all applicable federal, state and local statutes and regulations, but only to the extent such use does not have an adverse impact on the Conservation Values of the Protected Property.
  - (c) Grantor reserves the right to engage in all non-commercial acts or uses on the Protected Property that are not prohibited by governmental statute or regulation, not expressly prohibited or conditioned herein, and not inconsistent with the Conservation Purposes.
  - (e) Grantor reserves the right to undertake meadow maintenance techniques such as controlled burning to preserve the Protected Property's meadow community required by the Endangered Massasauga Rattlesnake and several other rare meadow species, and to remove invasive plants with the assistance of the Museum, or otherwise.
  - (f) Grantor reserves the right to plant anywhere on the Protected Property a diversity of regionally native species of trees, shrubs and herbaceous plant materials in a manner that does not have an adverse impact on the Conservation Values of the Protected Property and is otherwise consistent with the Conservation Purposes.
  - (g) Grantor shall notify Grantee, in writing, before exercising any right reserved by Grantor in this Conservation Easement that may have an adverse impact on the Conservation Values.

3. **No Building.** No buildings or other structures, including, but not limited to, residences or outbuildings, commercial or industrial structures, billboards or advertising of any kind, fences (except for deer exclosures to protect threatened flora or natural communities from over-abundance of fauna), camping accommodations and mobile homes shall be hereafter erected or placed on the Protected Property. Signs such as “no trespassing” signs and signs identifying the Protected Property as being subject to this Grant are permitted. A maximum of two (2) Hunting stands and blinds (e.g. duck blinds and deer tree stands) are permitted on the Protected Property so long as they are no larger than necessary to accommodate a maximum of three persons, they are temporary and do not penetrate the bark of any trees.
4. **No Dumping.** There shall be no dumping of soil, trash, ashes, garbage, waste, or other unsightly or offensive material, nor any placement of underground storage tanks (other than tanks related to septic systems), on or in the Protected Property. The land application, storage and placement of municipal, commercial or industrial sewage sludge or liquid generated from such sources for agricultural purposes may not be undertaken on the Protected Property.
5. **No Filling or Excavation.** Except as otherwise provided herein and except for rights reserved under existing pipeline easement agreements of record against the Protected Property as of the date hereof, there shall be no fillings, excavations, construction of roads or other changes in the general topography of the Protected Property in any manner except to improve or restore wetlands and/or stream habitat, or as necessary for forest management and silviculture purposes under best management practices, placement of on-site sourced invasive weed seed free soil or fill or excavation may occur to change the general topography and the maintenance of existing and permitted foot trails and any soil disturbance caused by the forces of nature; provided, however, that (a) existing trails and bridges for walking and small all-terrain vehicles may be widened so long as (i) they do not exceed eight (8) feet in width, (ii) they are not covered with impervious materials, and (b) such placement, excavation, widening or creation minimizes soil disturbance, which is necessary to prevent the spread of invasive plant species, and is not detrimental to water quality, significant natural habitats, or the scenic qualities of the Protected Property and are otherwise consistent with the Conservation Purposes and the Conservation Values.
6. **No Mining or Drilling.** There shall be no mining or drilling for minerals, oil, gas or similar substances on the Protected Property provided however, that nothing herein shall prohibit or restrict the exploration and production of oil and gas from beneath the Protected Property in a manner that will not adversely affect the Conservation Values of the Protected Property. Nor shall there be any future extraction or removal of any minerals by any surface mining methods. There are several existing wells on or near the protected property that will be allowed to continue operation until they are deemed no longer producing, at which point they will be required to be capped according to Ohio Department of Natural Resources Division of Mineral Resource Management Guidelines. The plugging of the well is the responsibility of the well-owner and it must be supervised by the Trumbull County Oil and Gas Inspector or other suitable agent that may exist at the time the well is plugged.

7. **No Habitat Disturbance.** Native shrubs, vines and herbaceous plants may not be removed from the property except as deemed necessary by Grantor, with the approval of Grantee, to arrest the spread of non-native insects, such as the Viburnum leaf beetle. Only 1/5<sup>th</sup> of each existing field may be mowed each year to allow for butterfly and Massasauga Rattlesnake habitat at a minimum blade height of 6 inches from the ground. There shall be no introduction of animals other than native wildlife under a reintroduction plan coordinated by the Grantee with the Ohio Department of Natural Resources. There shall be no removal or destruction of native growth in the open and wooded areas, use of fertilizers, spraying with biocides, introduction of non-native animals or disturbance or change in the natural habitat, except in accordance with good forestry and husbandry practices (and for purposes of enhancing flora and fauna biodiversity) including, but not limited to, the removal of diseased trees from the Protected Property (with the understanding that, if present in sufficient numbers, at least four (4) dead trees per acre will allowed to remain on the protected property).
8. **No Power Lines or Communications Towers.** No additional power transmission lines or communications towers shall be erected, other than utility lines for structures, uses and activities permitted on the Protected Property, nor shall interests in the Protected Property be granted for such purpose.
9. **No Detrimental Use.** There shall be no activities, actions, or uses detrimental or adverse to water conservation, erosion control, soil conservation, and fish and wildlife or habitat conservation on the Protected Property.
10. **No Manipulation of Water Courses.** There shall be no manipulation or alteration of natural water courses, marshes, or other water bodies or activities or uses detrimental to water purity, provided that existing dams and ponds on the Protected Property, if any, may be maintained, repaired or replaced. The Protected Property includes all water and water rights, ditches and ditch rights, springs and spring rights, reservoir and storage rights, wells and groundwater rights, and other rights in and to the use of water historically used on or otherwise appurtenant to the Protected Property (collectively, the "Water Rights"). Grantor shall not transfer, encumber, sell, lease or otherwise separate the Water Rights from the Protected Property or change the historic use of the Water Rights without the consent of Grantee. Grantor shall not abandon or allow the abandonment of, by action or inaction, any of the Water Rights without the consent of Grantee.
11. **Limitation on Motor Vehicles.** The operation of motorized vehicles on the Protected Property, including but not limited to, automobiles, trucks, and all-terrain vehicles will be permitted only along existing roadways, and trails on the property by the Grantor and Grantee's designees for purposes of traversing the Protected Property in accordance with good husbandry practices, including use in connection with the control of non-indigenous species and enhancement of wildlife habitat. Additionally vehicle access will be limited to vehicles suitable for traversing trails and which do not cause erosion to the Protected Property and are not used in a manner inconsistent with the purposes and terms of this Conservation Easement. Motorized vehicle use, consistent with the Forestry Best Management Practices, may occur between 15 meters (50 feet) and 50 meters (164 feet) from the edge of wetlands, including vernal pools only between

November 15 and March 15. All motorized vehicles shall be excluded from these areas between March 15 and November 15 excepting for existing trail crossings into the wetland buffer areas. Motor vehicles that have left the Protected Property or travelled through areas of invasive species should be hosed down off the Protected Property to remove any and all dirt, mud, seeds, and soil to prevent the spread of invasive weed seeds.

12. **No Density Yield; Transfer of Development Rights.** The acreage constituting the Protected Property shall not be taken into consideration and may not be used when calculating the lot area for any future development. Grantor may not transfer (whether or not for compensation) any development rights allocated to the Protected Property.
13. **No Subdivision.** The Protected Property shall not be subdivided, and the Grantor shall maintain the Protected Property, and all interests therein, under common ownership, i.e. the parcels comprising the Protected Property as of the date of this Grant may be conveyed only in their entirety. The subdivision of the Protected Property, recording of a subdivision plan, partition of the Protected Property, or any other attempt to divide the Protected Property into more than the existing legal parcels without the permission of Grantee is prohibited. Grantor shall give Grantee the Right of First Refusal for 60 days from date of first written notice to Grantee if Grantor desires to sell any and all parcels.
14. **No Commercial Recreational Use.** There shall be no commercial recreational use of the Protected Property except those uses considered “de minimus” according to the provisions of Section 2031(c)(8)(B) of the IRC.
15. **Management as a Natural Area.** Except as otherwise herein provided, the Natural Areas of the Protected Property shall be managed in a manner consistent with its conservation as a natural, scenic, open, and wooded area. Beyond legal hunting, fishing, and trapping, any activity or construction not consistent with the conservation values that might endanger the natural or scenic state of the Natural Areas of the Protected Property is prohibited. Grantee reserves the right to conduct certain scientific and/or research activities on the property including but not limited to collecting biological specimens, the research and monitoring of endangered and threatened species of plants and animals, biological surveys, prescribed burns, wildlife management activities such as erecting nest boxes and hacking platforms, and habitat improvement and/or restoration activities including restoration of wetlands and streams.
16. **Real Property Interest.** This Conservation Easement constitutes a real property interest immediately vested in Grantee.
17. **Right to Enter and Inspect.** Grantee, or its duly authorized representatives, may enter the Protected Property at all reasonable times for the purposes of inspecting or conducting stewardship of the Protected Property in order to further the objectives and determine compliance with the terms of this Conservation Easement. The Grantee will make a good faith attempt to give 5 days advance notice except in the case of an emergency when no advance notice need be given. The Grantee shall be liable only for damage or harm for which it may be solely responsible.

**18. Permission of Grantee.** Where Grantor is required to obtain Grantees permission, approval or consent for a proposed action hereunder, such permission, approval or consent shall (a) be sought and given in writing, (b) in all cases be obtained by Grantor prior to Grantor taking the proposed action and (c) not be unreasonably conditioned, delayed or withheld and shall be based on Grantee's evaluation of the impact of the request on the Conservation Values of the Protected Property. Grantee shall grant or withhold its approval in writing within thirty (30) days after receipt of Grantors written request. In the case of withholding of approval, Grantee shall notify Grantor in writing with reasonable specificity of the reasons for withholding of approval, and the conditions, if any, on which approval might otherwise be given.

**19. Grantee's Remedies Upon Violation.**

- (a) The Grantee shall have primary responsibility for enforcing this Conservation Easement and taking action to correct violations. Accordingly, if the Grantee determines that Grantor is in violation of the terms of this Conservation Easement or that a violation is threatened, the Grantee shall give written notice to Grantor of such violation and demand corrective action sufficient to cure the violation and, where the violation involves injury to the Protected Property resulting from any use or activity inconsistent with the purpose of this Conservation Easement, to restore the portion of the Protected Property so injured. If Grantor fails to cure the violation within 10 days after receipt of notice thereof from the Grantee, or under circumstances where the violation cannot reasonably be cured within a 10-day period, fail to begin curing such violation within the 10-day period, or fail to continue diligently to cure such violation until finally cured, the Grantee may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Conservation Easement, to enjoin the violation, ex parte as necessary, by temporary or permanent injunction, to recover any damages to which it may be entitled for violation of the terms of this Conservation Easement or injury to any Conservation Values, including damages for the loss of scenic, aesthetic, or environmental values, and to require the restoration of the Protected Property to the condition that existed prior to any such injury. Without limiting Grantor's liability therefore, the Grantee, in its sole discretion, may apply any damages recovered to the cost of undertaking any corrective action on the Protected Property. If the Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the Conservation Values of the Protected Property, the Grantee may pursue its remedies under this paragraph without prior notice to Grantor or without waiting for the period provided for cure to expire. The Grantee's rights under this paragraph apply equally in the event of either actual or threatened violations of the terms of this Conservation Easement, and Grantor agrees that the Grantee's remedies at law for any violation of the terms of this Conservation Easement are inadequate and that the Grantee shall be entitled to the injunctive relief described in this paragraph, both prohibitive and mandatory, in addition to such other relief to which the Grantee may be entitled, including specific performance of the terms of this Conservation Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies or being required to

post a bond for any injunctive relief. The Grantee's remedies described in this paragraph shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity.

- (b) Costs of Enforcement. Any costs incurred by Grantee in enforcing the terms of this Conservation Easement against Grantor, including, without limitation, costs of suit and attorneys' fees, and any costs of restoration necessitated by Grantor's violation of the terms of this Conservation Easement, shall be borne by Grantor if Grantee prevails in any such action.

**20. Upkeep and Maintenance.** Grantor shall be solely responsible for the upkeep and maintenance of the Protected Property to the extent required by law. Grantee shall have no obligation for the upkeep or maintenance of the buildings and grounds of the Protected Property, other than those aforementioned Conservation Values.

**21. Liability and Indemnification.** Grantor shall indemnify Grantee against, and hold Grantee harmless from, any and all loss, cost, claim, liability, or expense (including reasonable attorneys' fees) arising from or with respect to the Protected Property, unless solely due to the gross negligence or willful misconduct of Grantee. Grantor shall keep the Protected Property insured with comprehensive general liability insurance, with limits deemed adequate by Grantee, acting reasonably, against claims for personal injury, death and property damage, cause Grantee to be named as an additional insured on all such insurance policies, and provide evidence of such insurance to Grantee as of the effective date of this Conservation Easement and periodically thereafter as such insurance coverage is renewed or replaced. Such evidence shall be in the form of a certificate of insurance which (a) indicates that Grantee is insured and (b) requires written notice from the insurer to Grantee not less than 30 days before making a material change in or canceling such coverage.

**22. Taxes.** Grantor shall pay all taxes validly assessed and levied against the Protected Property, including any such taxes validly levied and assessed against this Conservation Easement by competent authorities, it being understood that no property taxes are presently levied against conservation easements generally in the state of Ohio, nor, to the knowledge of the parties, are such taxes contemplated by any taxing authority with jurisdiction over the Protected Property. At its option, Grantee may, but shall not be obligated to, discharge any tax lien (or other encumbrance) at any time levied or placed on the Protected Property should Grantor fail to do so. Before doing so, Grantee shall give Grantor notice of its intention to discharge any such tax lien or other encumbrance and Grantee shall not proceed unless Grantor has failed to discharge such tax lien or other encumbrance within thirty (30) days after the giving of such notice. Grantor shall reimburse Grantee on demand for any payment so made.

**23. Incorporation in Subsequent Instruments.** Grantor agrees that the terms, conditions, restrictions, and purposes of this Conservation Easement shall be incorporated by reference in any subsequent deed, or other legal instrument, by which Grantor divests itself of either the fee simple title to, or its possessory interest in, the Protected Property.

**24. Amendment.** This Grant may be amended only with the written consent of Grantee and Grantor. It may be amended to clarify a clerical error, to make a technical correction or to resolve an ambiguity but Grantee shall not consent to any amendment of this Conservation Easement (a) unless the effect of such amendment is neutral with respect to or enhances the Conservation Purposes and such amendment otherwise qualifies under the Grantee's policy then in effect respecting conservation easement amendments, or (b) if such amendment would adversely affect the qualification of this Conservation Easement or the status of Grantee under any applicable laws, including Sections 170(h) and 501(c)(3) of the IRC and the laws of the state of Ohio. Any such amendment shall be consistent with the purposes of this Grant and shall comply with Section 170(h) and Section 2031(c) of the IRC. Any such amendment shall also be consistent with Section 5301.67 through 5301.70 of the Ohio Revised Code and any regulations promulgated pursuant to such code. Any such amendment shall be recorded in the Official Records of Trumbull County, Ohio. Nothing in this paragraph shall require Grantor or Grantee to agree to any amendment or to consult or negotiate regarding any amendment. Grantor and Grantee may amend this Conservation Easement to be more restrictive to comply with the provisions of Section 2031(c) of the IRC.

**25. Assignment.** The Grantee may transfer or assign all or less than all of its rights and obligations under this Conservation Easement to another qualified organization as described below if, in such Grantee's opinion, the purposes of this Conservation Easement are better served by this Conservation Easement being held in the name of another organization or in the name of more than one organization which is a qualified land conservation easement holding organization at the time of transfer under Section 170(h) (3) of the IRC and the laws of the state of Ohio (especially Section 5301.69 of the Ohio Revised Code), and is acceptable to Grantee. The Grantor specifically states that the Humane Society of the United States and the People for the Ethical Treatment of Animals (or other entities with similar missions) are not acceptable organizations to transfer the Conservation Easement to. The selection of the transferee shall be made by the Board of Trustees of such Grantee or, if such Grantee has ceased to exist, the statutory or court appointed successors of the last Board of Trustees of such Grantee. As a condition of such transfer, such Grantee shall require that the Conservation Purposes that this Conservation Easement is intended to advance continue to be carried out. Grantee shall give Grantor 30 days to comment on transferee.

**26. Extinguishment.**

(a) **Limitation.** If future circumstances render the purpose of this Conservation Easement impossible to accomplish, this Conservation Easement can only be terminated or extinguished, whether with respect to all or part of the Protected Property, by judicial proceedings in a local court of competent jurisdiction. Unless otherwise required by applicable law at the time, in the event of any sale of all or a portion of the Protected Property (or any other property received in connection with an exchange or involuntary conversion of the Protected Property) after such termination or extinguishment, and net of any costs or expenses associated with such sale, Grantor and the Grantee shall divide the proceeds from such sale with 60% of the net proceeds to the Grantor and 40% percent

of the net proceeds to the Grantee. All such proceeds received by the Grantee shall be used by the Grantee in a manner consistent with the Conservation Purposes of this Conservation Easement.

- (b) **Eminent Domain.** It is the intent of this Grant to convey to Grantee, its successors and assigns, such an interest in the Protected Property as is sufficient to prohibit the exercise of the power of eminent domain by public utility and any other body or person. If all or any part of the Protected Property is taken under the power of eminent domain by public, corporate, or other authority, or otherwise acquired by such authority through a purchase in lieu of a taking, Grantor and Grantee shall join in appropriate proceedings at the time of such taking to recover the full value of the interests in the Protected Property subject to the taking and all incidental or direct damages resulting from the taking. All expenses reasonably incurred by Grantor and Grantee in connection with such taking shall be paid out of the recovered proceeds. Grantor and the Grantee shall be respectively entitled to compensation from the balance of the recovered proceeds in conformity with the provisions of paragraphs 27(a). The respective rights of Grantor and Grantee set forth in this paragraph 28 shall be in addition to, and not in limitation of, any rights they may have at common law.
28. **Notice of Proposed Transfer.** Grantor shall give Grantee notice of the proposed transfer of any interest in the Protected Property at least 20 days prior to such transfer; provided that failure to so notify Grantee shall not in any way affect the validity of this Conservation Easement or limit its enforceability.
29. **Stewardship Fee.** Grantor hereby covenant, promise, and agree to pay, or to cause the closing agent in connection with the future transfer for value of all or less than all of the Protected Property to pay, to the Grantee, or any successor to the Grantee having stewardship obligations pertaining to the Protected Property, at closing, a Stewardship Fee (the "Fee") in an amount equal to two percent (2%) of the full consideration paid, including that portion of such consideration attributable to improvements, other contiguous land, whether or not subject to easement, and any fixtures permanently attached to the Protected Property and such contiguous land. In the event the Fee is not paid as provided herein, Grantee shall have the right to file a lien against the Protected Property to secure the continuing obligation of Grantor and its successors and assigns in title to pay the Fee; provided that the lien securing payment of the Fee shall be subordinate to this Conservation Easement and to the lien of any first mortgage on the Protected Property. Such lien may be enforced and/or foreclosed in accordance with the laws of the State of Ohio.
30. **Rules of Convenience.** For convenience, masculine pronouns used in this document include the feminine and neuter pronouns, and the singular tense includes the plural tense. Additionally, all references to either Grantor or Grantee include their respective successors and assigns unless otherwise noted. The captions in this Conservation Easement are for convenience only and are not intended by the parties to affect the meaning or interpretation of the terms thereof.

31. **Counterparts.** This Conservation Easement may be executed simultaneously in two or more counterparts, each of which shall be deemed an original but all of which together shall constitute one and the same instrument.
32. **Applicable Law; Severability.** This Conservation Easement is intended to be performed in accordance with, and only to the extent permitted by all applicable laws, ordinances, rules and regulations of the State of Ohio. If any provision of this Conservation Easement or the application thereof to any person or circumstance shall, for any reason and to any extent, be invalid or unenforceable, the remainder of this Conservation Easement or application of such term or provision to persons or circumstances other than those to which it is held invalid or unenforceable shall not be affected thereby but rather shall be enforced to the fullest extent permitted by law.
33. **Reasonableness Standard.** Grantor and Grantee shall follow a reasonableness standard and shall use their best efforts to make any determinations that are necessary or are contemplated to be made by them (either separately or jointly) under this Conservation Easement in a timely manner and shall cooperate with one another and shall take all other reasonable action suitable to that end.
34. **Entire Agreement.** This instrument sets forth the entire agreement of the parties with respect to this Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to this Conservation Easement, all of which are merged herein.
35. **Notices.** Any notice, demand, request, consent, approval, or communication that any party desires or is required to give to any other shall be in writing and either served personally or sent by first class mail, postage prepaid, addressed as follows:

To Grantor: Massasauga Rattlesnake Ranch, Inc.  
P.O. Box 565,  
Dover, OH 44622

To Grantee: The Cleveland Museum of Natural History  
One Wade Oval Circle  
Cleveland, Ohio 44106  
Attention: Dr. James K. Bissell

or to such other address as any of the above parties from time to time shall designate by written notice to the others.

37. **Effective Date; Mortgage Subordination.** Grantor and Grantee intend that the restrictions arising hereunder take effect on the day and year this Conservation Easement is recorded in the Official Records of Trumbull County, Ohio, after all required signatures have been affixed hereto. Grantors shall cause any mortgage encumbering the Protected Property to be subordinated to this Grant effective as of the date this Grant is so recorded. Grantee may re-record this instrument at any time as may be required to preserve their rights in this Conservation Easement.

- 38. No Extinguishment Through Merger.** Grantor and Grantee herein agree that (a) this Conservation Easement shall not be extinguished through the doctrine of merger in whole or in part in view of the public interest in its enforcement, and (b) should all or a portion of the fee interest subject to this Conservation Easement and the Conservation Easement, itself, come to be owned by the same owner, such owner as promptly as practicable shall assign this Conservation Easement of record to another holder in conformity with the requirements of paragraphs 26 and 28. The instrument of assignment shall refer to the provisions of this paragraph, and shall contain confirmatory language suitable to reimpose this Conservation Easement to the extent, if any, necessary to continue it in force.
- 39. Termination of Rights and Obligations.** A party's rights and obligations under this Conservation Easement terminate upon transfer of that party's interest in the Protected Property, except that liability for acts or omissions occurring during any party's period of ownership prior to such party's transfer shall survive transfer.

**TO HAVE AND TO HOLD**, unto and to the use of Grantee, its successors and assigns, forever. The covenants agreed to and the terms, conditions, restrictions, and purposes imposed as aforesaid shall be binding not only upon Grantor and Grantee, but also their respective successors and assigns, and all other successors to them in interest, and shall continue as a servitude running in perpetuity with the Protected Property.

**IN WITNESS WHEREOF**, Grantor has executed this instrument this \_\_\_\_\_ day of \_\_\_\_\_, 2013.

SIGNED IN THE PRESENCE OF:

GRANTOR:

\_\_\_\_\_  
(Signature of Witness)

\_\_\_\_\_  
Charles E. Matthews, Jr.

\_\_\_\_\_  
(Print Name of Witness)

President

Massasauga Rattlesnake Ranch, Inc.

\_\_\_\_\_  
(Signature of Witness)

\_\_\_\_\_  
(Print Name of Witness)

\_\_\_\_\_  
STATE OF OHIO )  
) SS:  
COUNTY OF \_\_\_\_\_)

BEFORE ME, a Notary Public in and for said County and State, personally appeared the above named Massasauga Rattlesnake Ranch, Inc. represented by Timothy J. Matthews, its President, who acknowledged that he did execute the foregoing instrument and that the same is his own free act and deed.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at \_\_\_\_\_ County, Ohio this \_\_\_\_ day of \_\_\_\_\_, 2013.

\_\_\_\_\_

Notary Public  
**ACCEPTANCE**

The Grantee does hereby consent to and accept the within Conservation Easement and all obligations imposed thereby.

IN WITNESS WHEREOF, the undersigned has executed and delivered this Acceptance this \_\_\_\_\_ day of \_\_\_\_\_, 2013.

The Grantee: Cleveland Museum of Natural History

By: \_\_\_\_\_  
(Signature of Witness) Evalyn Gates,  
Executive Director  
Cleveland Museum of Natural History

\_\_\_\_\_  
(Print Name of Witness)

\_\_\_\_\_  
(Signature of Witness) And: \_\_\_\_\_

\_\_\_\_\_  
(Print Name of Witness)

STATE OF OHIO )  
) SS.  
COUNTY OF CUYAHOGA )

Before me, a Notary Public in and for said County and State, personally appeared the above named THE CLEVELAND MUSEUM OF NATURAL HISTORY, represented by Evalyn Gates, its Executive Director, and \_\_\_\_\_, its \_\_\_\_\_, who acknowledged that they did execute the foregoing instrument and that the same is their own free act and deed as such representatives and the free act and deed of such Corporation.

In testimony whereof, I have hereunto set my hand and affixed my official seal at \_\_\_\_\_, Ohio, this \_\_\_\_\_ day of \_\_\_\_\_, 2013.

\_\_\_\_\_  
Notary Public

My Commission expires:

Instrument prepared by:

The Cleveland Museum of Natural History

One Wade Oval

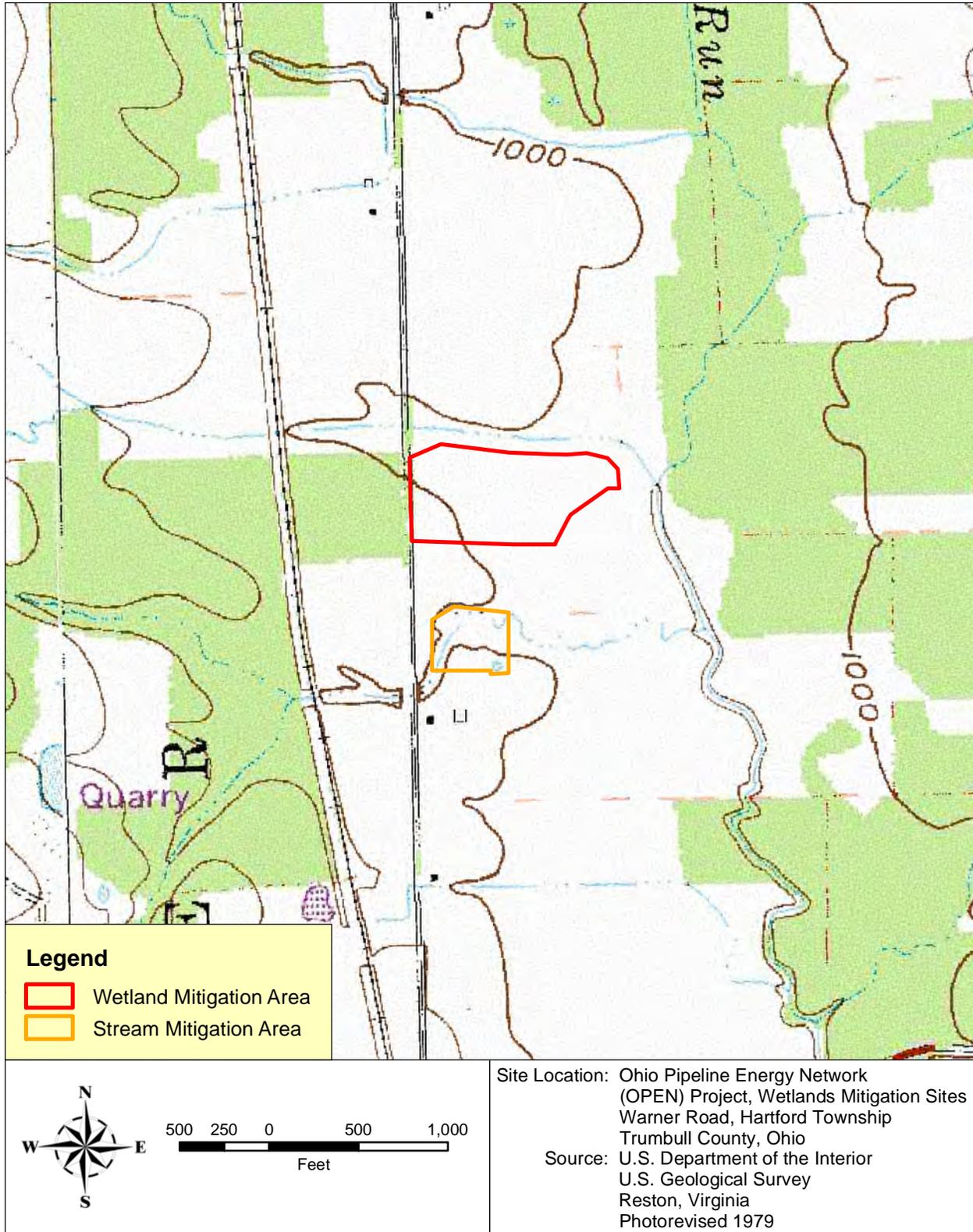
University Circle

Cleveland, Ohio 44106

(216)231-4600

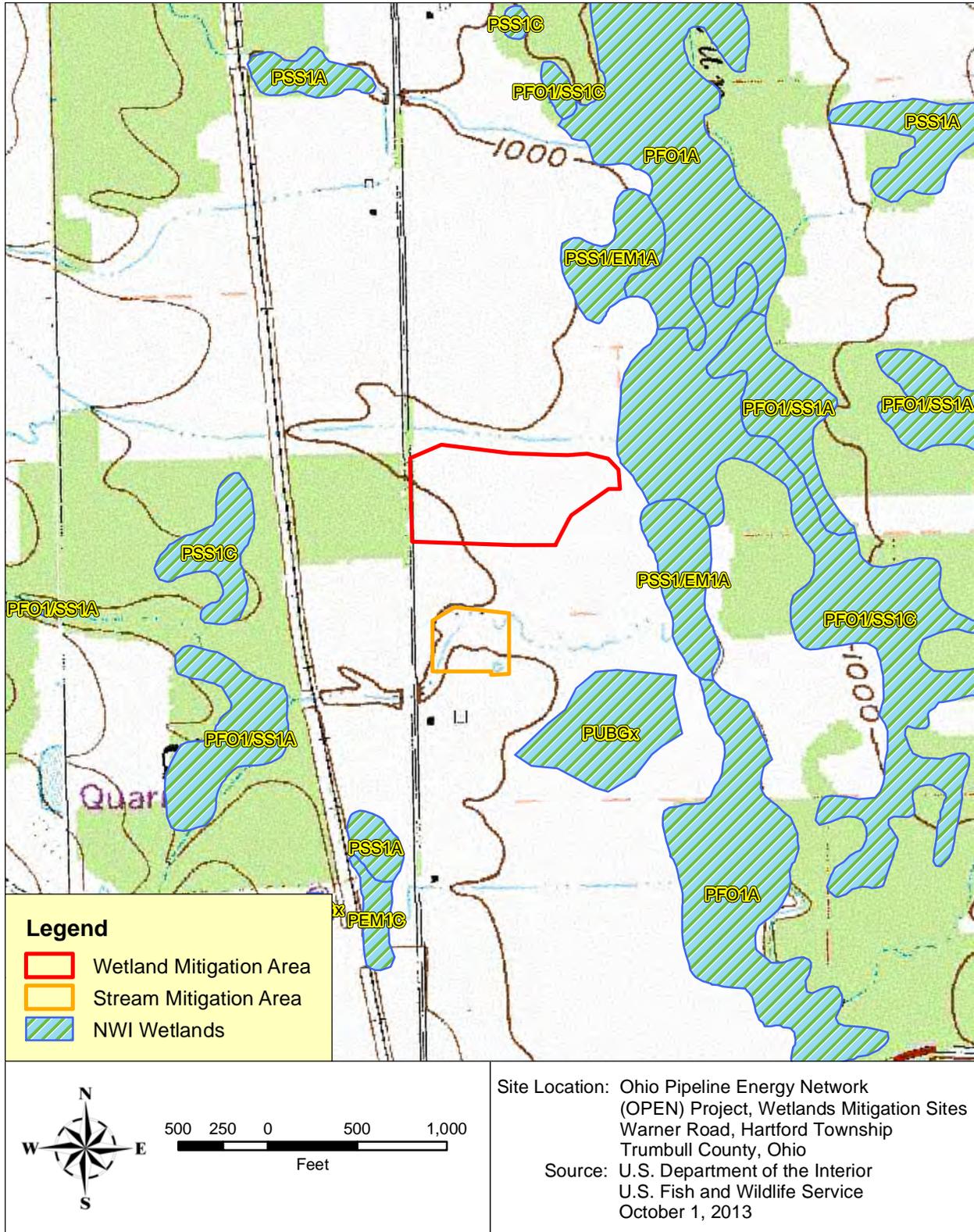
DRAFT

**Appendix F**  
**Location of Mitigation Sites on**  
**USGS 7.5-Minute Topographic Map**  
**(Orangeville Quadrangle)**

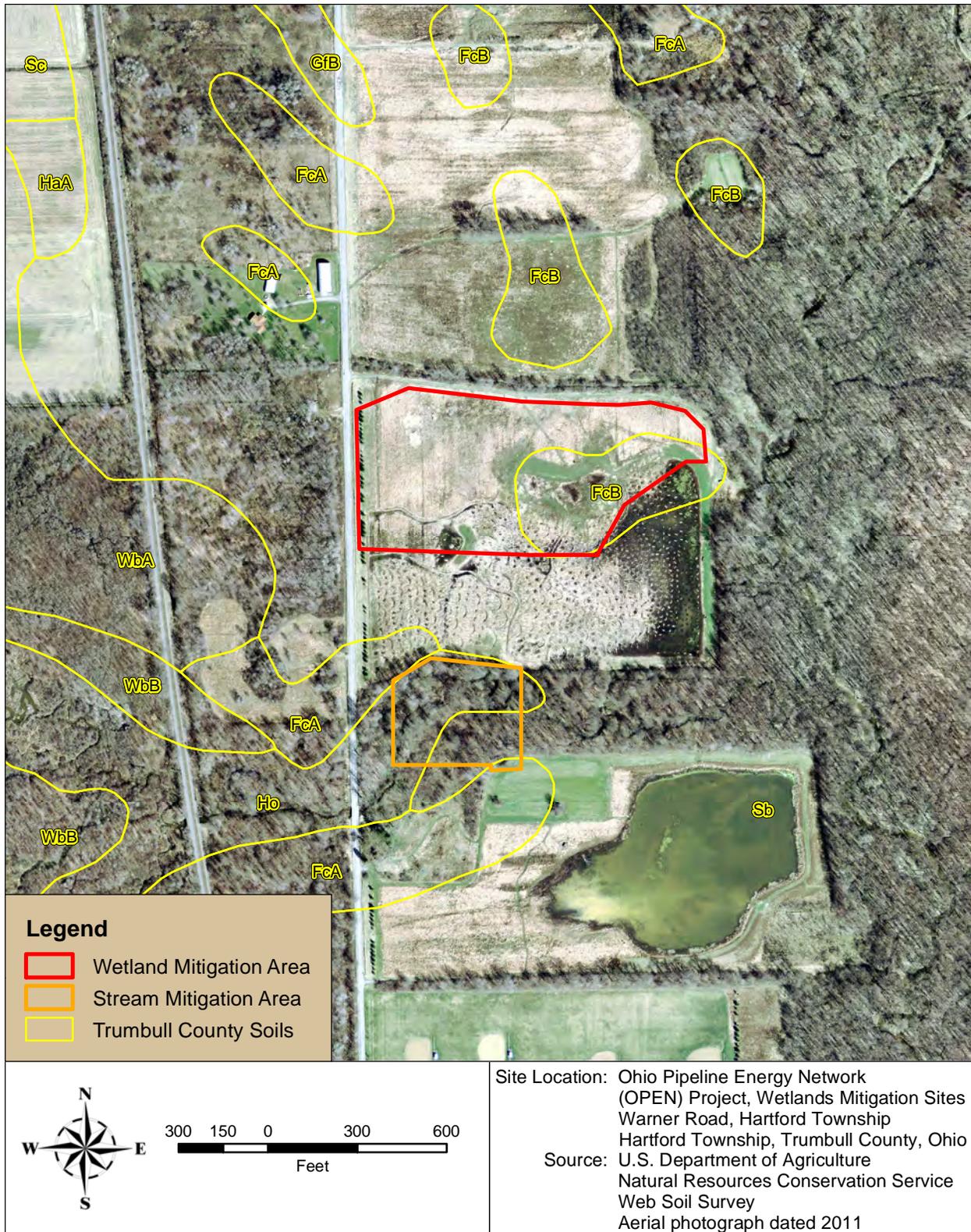


# Appendix G

## Location of Mitigation Sites on National Wetlands Inventory Map (Orangeville Quadrangle)



## Appendix H Location of Mitigation Site on Trumbull County Soil Survey Map



## *Description of Soils Found on the Site (from Trumbull County Soil Survey)*

**FcA—Fitchville silt loam, 0 to 2 percent slopes.** This deep, nearly level, somewhat poorly drained soil is on slightly convex rises in the basins of former glacial lakes. Most areas are oblong, broad, or irregularly shaped and range from 10 to 200 acres in size.

Typically, the surface layer is dark grayish brown, friable silt loam about 7 inches thick. The subsoil is about 48 inches of yellowish brown and grayish brown, mottle, friable and firm silt loam and silty clay loam. The substratum to a depth of about 72 inches is yellowish brown, mottled, friable silt loam.

Included with this soil in mapping are small areas of the moderately well-drained Glenford soils on slight rises and the poorly drained Sebring soils in shallow depressions and along drainageways. Included soils make up about 15% of most areas.

The Fitchville soil has a perched seasonal high water table at a depth of 12 to 30 inches during extended wet periods. Permeability is moderately slow. Runoff is slow. The root zone is deep. Available water capacity is high.

Most areas are used as cropland. Drained areas of this soil are well suited to row crops, hay, and pasture, but undrained areas are poorly suited. Row crops can be grown year after year in drained areas. Planting is delayed in undrained areas. Surface drains can remove excess surface water, and subsurface drains can lower the water table. The soil is subject to compaction and hard clodding if tillage or harvesting activities are performed during wet periods. The surface layer crusts after heavy rainfall, especially in tilled areas. Shallow cultivation of intertilled crops breaks up the crust. Properly managing crop residue and growing cover crops increase the content of organic matter, improve tilth, and increase the rate of water infiltration. Because of compaction, grazing should be limited to periods when the surface layer is not soft and sticky.

This soil is moderately well suited to woodland. The species selected for planting should be those that are tolerant of some wetness. No major hazards or limitations affect planting or harvesting.

This soil is poorly suited to building site development because of the seasonal wetness. It is better suited to dwellings without basements than to dwellings with basements. Storm sewers and ditches can help to lower the water table. Drains at the base of footings and exterior basement wall coatings help to keep basements dry. Local roads can be improved by a drainage system and suitable base material, which minimize the damage caused by frost action and low strength.

This soil is poorly suited to septic tank absorption fields because of the seasonal wetness and the moderately slow permeability. The efficiency of the septic tank system can be improved by increasing the number and length of laterals. In areas where suitable outlets are available, curtain or perimeter drains can help to lower the seasonal high water table. Alternative disposal systems, such as two separate absorption fields, aerobic digesting systems, and mound systems, should be considered. A community sewer system is the most efficient, trouble-free method of sewage disposal.

Play areas and walkways require special surfacing material.

The land capability classification is IIw. The woodland ordination symbol is 5A.

**FcB—Fitchville silt loam, 2 to 6 percent slopes.** This deep, gently sloping, somewhat poorly drained soil is on low knolls in the basins of former glacial lakes. Most areas are irregularly shaped and range from 5 to 80 acres in size.

Typically, the surface layer is dark grayish brown, friable silt loam about 7 inches thick. The subsoil is about 36 inches of yellowish brown and strong brown, mottled, firm silt loam and silty clay loam. The substratum to a depth of about 60 inches is yellowish brown and brown, mottled, friable silt loam, and firm silty clay loam.

Included with this soil in mapping are small areas of the moderately well-drained Glenford soils on slight rises and the poorly drained Sebring soils in shallow depressions and along drainageways. Also included are scattered small areas of Caneadea soils, which have more clay in the subsoil than the Fitchville soil. Included soils make up about 15% of most areas.

The Fitchville soil has a perched seasonal high water table at a depth of 12 to 30 inches during extended wet periods. Permeability is moderately slow. Runoff is medium. The root zone is deep. Available water capacity is high.

Most areas are used as cropland. Drained areas of this soil are well suited to row crops, hay, and pasture. Undrained areas are moderately well suited to row crops. Erosion is a hazard if cultivated crops are grown. Minimum tillage, crop residue management, and cover crops help to control erosion, maintain the content of organic matter, and improve tilth. The surface layer crusts after heavy rainfall, especially in tilled areas. Shallow cultivation of intertilled crops breaks up the crust. Planting is delayed in undrained areas. The grasses and legumes grown for hay or pasture should be those that are tolerant of wetness. Because of compaction, grazing should be limited to periods when the surface layer is not soft and sticky.

This soil is moderately well suited to woodland. The species selected for planting should be those that are tolerant of some wetness. No major hazards or limitations affect planting or harvesting.

This soil is poorly suited to building site development because of the seasonal wetness. It is better suited to dwellings without basements than to dwellings with basements. Drainage can be improved by subsurface drains, storm sewers, and open ditches. Properly landscaping buildings sites helps to keep surface water away from foundations. Drains at the base of footings and exterior basement wall coatings help to keep basements dry. Maintaining as much vegetation on the site as possible during construction reduces the hazard of erosion. Local roads can be improved by a drainage system and suitable base material, which minimize the damage caused by frost action and low strength.

This soil is poorly suited to septic tank fields because of the seasonal wetness and the moderately slow permeability. The efficiency of the septic tank system can be improved by increasing the number and length of laterals. In areas where suitable outlets are available, curtain or perimeter drains can help to lower the seasonal high water table. Alternative disposal systems, such as two separate absorption fields, aerobic digesting systems, and mound systems, should be considered. A community sewer system is the most efficient, trouble-free method of sewage disposal.

Play areas and walkways require special surfacing material.

The land capability classification is IIe. The woodland ordination symbol is 5A.

**Ho—Holly silt loam, frequently flooded.** This deep, nearly level, poorly drained soils is on flood plains. It commonly is on the lowest and wettest part of the flood plains. Slopes are 0 to 2 percent. Most areas are long and narrow and range from 10 to 100 acres in size.

Typically, the surface layer is dark grayish brown, friable silt loam about 7 inches thick. The subsoil is about 26 inches of dark gray, grayish brown, and gray, mottled, friable silt loam and loam. The substratum to a depth of about 68 inches is gray and dark gray, very friable sandy loam, loose gravelly loamy sand, and firm loam. It is mottled in the lower part. In some areas the surface layer is loam and sandy loam. In a few areas, the subsoil and substratum have more clay.

Included with this soil in mapping are narrow strips of the somewhat poorly drained Orrville soils on slight rises. Also included are small areas of soils that are subject to ponding. Included soils make up about 15% of most areas.

The Holly soil has a seasonal high water table near the surface during extended wet periods. Permeability is moderate or moderately slow in the subsoil and moderate or moderately rapid in the substratum. Runoff is very slow. The root zone is deep. Available water capacity is high.

Most areas support wetland vegetation or are used as woodland. If drained and protected from flooding, this soil is moderately well suited to crops and pasture. Undrained and unprotected areas are poorly suited to row crops, hay, and pasture. Surface drains commonly remove surface water. Subsurface drains are used in areas where outlets are available. The perennial plants selected for planting should be those that are tolerant of wetness. The soil is poorly suited to grazing early in spring. Overgrazing or grazing when the soil is soft and sticky results in compaction and poor tilth.

This soil is moderately well suited to woodland. The trees can be logged when the soil is frozen or during the drier parts of the year. Planting seedlings that have been transplanted once can reduce the seedling mortality rate. Harvesting procedures that do not isolate the remaining trees or leave them widely spaced reduce the windthrow hazard. Plant competition can be controlled by removing vines and the less desirable trees and shrubs.

This soil is generally unsuited to building site development and septic tank absorption fields because of the frequent flooding, the prolonged wetness, and the moderate or moderately slow permeability. Diking to control flooding is difficult. Local roads can be improved by installing a drainage system and providing suitable base material. These measures can raise the road above the level of flooding and minimize the damage caused by frost action.

The land capability classification is IIIw. The woodland ordination symbol is 5W.

**Sb—Sebring silt loam.** This deep, nearly level, poorly drained soil is on flats and in slightly concave areas in the basins of former glacial lakes on slack-water terraces and lake plains. It receives runoff from the higher adjacent soils and is subject to ponding. Most areas are irregularly shaped and range from 5 to 20 acres in size. Slopes are 0% to 2%.

Typically, the surface layer is dark gray, friable silt loam about 6 inches thick. The subsurface layer is gray and light brownish gray, mottled, friable silt loam about 9 inches thick. The subsoil is mottled, firm silt loam about 38 inches thick. The upper part is light brownish gray, and the lower part is yellowish brown. The substratum to a depth of about 69 inches is yellowish brown, friable, and very friable silt loam.

Included with this soil in mapping are small areas of the somewhat poorly drained Fitchville soils on slight rises. These soils make up about 15% of most areas.

The Sebring soil has a high water table near or above the surface during extended wet periods. Permeability is moderately slow. Runoff is very slow or ponded. The root zone is deep. Available water capacity is high.

Most undrained areas support trees and brush. Drained areas are used for general farm crops.

The seasonal wetness severely limits the use of this soil for row crops. Drained areas are well suited to row crops, such as corn and soybeans, and to water-tolerant grasses and legumes for hay or pasture, but undrained areas are poorly suited. Surface drains can remove excess surface water. Subsurface drains can lower the seasonal high water table, but establishing this type of drainage system is difficult because of this low position on the landscape and the lack of suitable outlets. Tilling or grazing when the soil is wet causes compaction. Properly managing crop residue, growing cover crops, and tilling and harvesting at the proper moisture content are important management practices.

This soil is moderately well suited to woodland. The trees can be logged when the soil is frozen or during the drier parts of the year. The species selected for planting should be those that are tolerant of wetness. Planting seedlings that have been transplanted once can reduce the seedling mortality rate. Harvesting procedures that do not isolate the remaining trees or leave them widely spaced reduce the windthrow hazard. Plant competition can be controlled by removing vines and the less desirable trees and shrubs.

This soil is poorly suited to building site development because of the ponding and is generally unsuited to septic tank absorption fields because of the moderately slow permeability and ponding. Drains are somewhat effective in reducing the wetness. Properly landscaping building sites helps to keep surface water away from foundations. Local roads can be improved by a drainage system and suitable base material, which minimize the damage caused by frost action and low strength.

Most play areas and walkways require special surfacing material.

The land capability classification is IIIw. The woodland ordination symbol is 5W.

***Appendix I***  
***QHEI Form for Preserved Stream***

Stream/Location: Hartford Township, Trumbull County, Ohio RM: \_\_\_\_\_ Date: 9/4/2013

Scorers Full Name & Affiliation: Todd Crandall, Davey Resource Group

River Code: \_\_\_\_\_ STORET #: \_\_\_\_\_ Lat/Long.: 41.3188 -80.617 Office verified location

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

BEST TYPES	POOL	RIFFLE	OTHER 1	POOL	RIFFLE
<input type="checkbox"/> BLDR /SLABS [10]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> HARDPAN [4]	<input checked="" type="checkbox"/> x	<input checked="" type="checkbox"/> x
<input type="checkbox"/> BOULDER [9]	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> DETRITUS [3]	<input checked="" type="checkbox"/> x	<input type="checkbox"/>
<input type="checkbox"/> COBBLE [8]	<input type="checkbox"/>	<input checked="" type="checkbox"/> x	<input type="checkbox"/> MUCK [2]	<input checked="" type="checkbox"/> x	<input type="checkbox"/>
<input checked="" type="checkbox"/> GRAVEL [7]	<input checked="" type="checkbox"/> x	<input checked="" type="checkbox"/> x	<input type="checkbox"/> SILT [2]	<input checked="" type="checkbox"/> x	<input checked="" type="checkbox"/> x
<input type="checkbox"/> SAND [6]	<input checked="" type="checkbox"/> x	<input checked="" type="checkbox"/> x	<input type="checkbox"/> ARTIFICIAL [0]	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> BEDROCK [5]	<input type="checkbox"/>	<input type="checkbox"/>	(Score natural substrates; ignore sludge from point-sources)		

NUMBER OF BEST TYPES:  4 or more [2]  3 or less [0]

Check ONE (Or 2 & average)

ORIGIN	QUALITY
<input type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [-2]
<input type="checkbox"/> TILLS [1]	<input type="checkbox"/> MODERATE [-1]
<input checked="" type="checkbox"/> WETLANDS [0]	<input checked="" type="checkbox"/> SILT [0]
<input type="checkbox"/> HARDPAN [0]	<input type="checkbox"/> FREE [1]
<input type="checkbox"/> SANDSTONE [0]	<input type="checkbox"/> EXTENSIVE [-2]
<input type="checkbox"/> RIP/RAP [0]	<input type="checkbox"/> MODERATE [-1]
<input type="checkbox"/> LACUSTRINE [0]	<input checked="" type="checkbox"/> NORMAL [0]
<input type="checkbox"/> SHALE [-1]	<input type="checkbox"/> NONE [1]
<input type="checkbox"/> COAL FINES [-2]	

Substrate  
**11**  
Maximum  
20

Comments

**2] INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality;

2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest

quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep/fast water, or deep, well-defined, functional pools.

<u>1</u> UNDERCUT BANKS [1]	<u>0</u> POOLS >70CM [2]	<u>0</u>
<u>2</u> OVERHANGING VEGETATION [1]	<u>0</u> ROOTWADS [1]	<u>1</u>
<u>1</u> SHALLOWS (IN SLOW WATER) [1]	<u>0</u> BOULDERS [1]	<u>1</u>
<u>0</u> ROOTMATS [1]		

AMOUNT
Check ONE (Or 2 & Average)
<input checked="" type="checkbox"/> EXTENSIVE >75% [11]
<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> SPARSE 5-<25% [3]
<input type="checkbox"/> NEARLY ABSENT <5% [1]

Cover

Maximum  
20

**12**

Comments

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input checked="" type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input checked="" type="checkbox"/> MODERATE [3]	<input checked="" type="checkbox"/> GOOD [5]	<input type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Channel

Maximum  
20

**16.0**

Comments

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

River right looking downstream		L R RIPARIAN WIDTH		L R FLOOD PLAIN QUALI		L R	
<input type="checkbox"/> EROSION	<input checked="" type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> WIDE > 50 M [4]	<input type="checkbox"/> MODERATE 10-50m [3]	<input checked="" type="checkbox"/> Forest, Swamp [3]	<input type="checkbox"/> Shrub or Old Field [2]	<input type="checkbox"/> Conservation Tillage [1]	<input type="checkbox"/> URBAN or INDUSTRIAL [0]
<input type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> MODERATE [2]	<input type="checkbox"/> NARROW 5-1-m [2]	<input type="checkbox"/> VERY NARROW <5m [1]	<input type="checkbox"/> Fenced Pasture [1]	<input type="checkbox"/> Residential, Park, New Field [1]	<input type="checkbox"/> Mining/Construction [0]	<input type="checkbox"/> Indicate predominant land use(s) past 100m riparian.
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> NONE [0]		<input type="checkbox"/> Open Pasture, Rowcrop [0]			

Riparian

Maximum  
10

**9**

Comments

**5] POOL / GLIDE AND RIFFLE / RUN QUALITY**

MAXIMUM DEPTH	CHANNEL WIDTH	CURRENT VELOCITY
Check ONE (ONLY!)	Check ONE (Or 2 & average)	Check ALL that apply
<input type="checkbox"/> > 1m [6]	<input checked="" type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]	<input type="checkbox"/> TORRENTIAL [-1]
<input type="checkbox"/> 0.7-<1m [4]	<input type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]	<input type="checkbox"/> VERY FAST [1]
<input type="checkbox"/> 0.4-<0.7m [2]	<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]	<input type="checkbox"/> FAST [1]
<input checked="" type="checkbox"/> 0.2m-<0.4m [1]		<input checked="" type="checkbox"/> MODERATE [1]
<input type="checkbox"/> < 0.2m [0]		<input type="checkbox"/> SLOW [1]
		<input type="checkbox"/> INTERSTITIAL [-1]
		<input type="checkbox"/> INTERMITTENT [-2]
		<input type="checkbox"/> EDDIES [1]

Recreation Potential  
Primary Contact  
Secondary Contact  
(circle one and comment on back)

Pool/  
Current

Maximum 12

**5**

Comments

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: Check ONE (Or 2 & average)

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10CM [2]	<input type="checkbox"/> MAXIMUM > 50CM [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10 CM [1]	<input checked="" type="checkbox"/> MAXIMUM < 50CM [1]	<input checked="" type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> BEST AREAS < 5 CM [metric=0]		<input type="checkbox"/> UNSTABLE (e.g. Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Riffle/  
Run

Maximum 8

**3**

Comments

**6] GRADIENT**

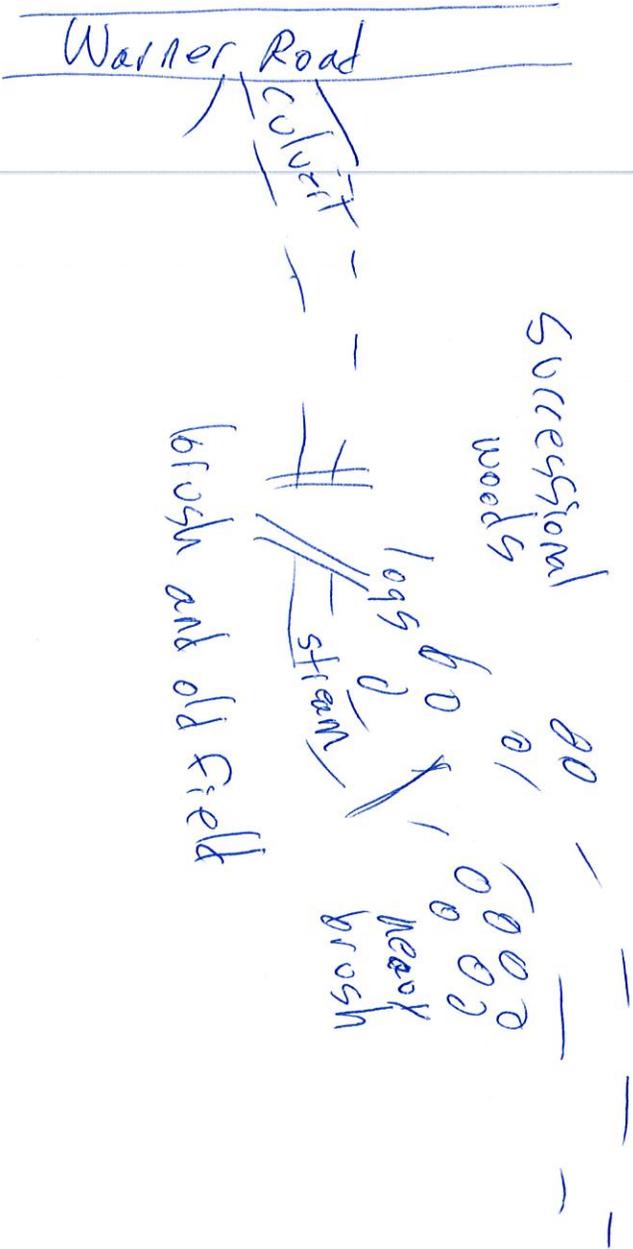
42 feet/r	<input type="checkbox"/> VERY LOW - LOW [2-4]	%POOL: <u>0</u>	%GLIDE: <u>0</u>	Gradient Maximum 10
DRAINAGE AREA 2.21 mil	<input type="checkbox"/> MODERATE [6-10]	%RUN: <u>0</u>	%RIFFLE: <u>0</u>	
	<input checked="" type="checkbox"/> HIGH - VERY HIGH [10-6]			<b>4</b>

**Stream & Location:** Hartford Township, Turnbull County, Ohio  
**A) SAMPLED REACH** Comment/RE: Reach consistency/ Is reach typical of stream? Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions.

Check ALL that apply

<b>METHOD</b>	<input type="checkbox"/> BOAT	<input type="checkbox"/> HIGH	<b>METHOD</b>	<input type="checkbox"/> 1st -sample pass- 2nd
<input type="checkbox"/> WADE	<input type="checkbox"/> L. LINE	<input type="checkbox"/> UP	<input type="checkbox"/> NORMAL	<input type="checkbox"/> LOW
<input type="checkbox"/> OTHER	<input type="checkbox"/> DISTANCE	<input type="checkbox"/> DRY	<b>CLARITY</b>	<input type="checkbox"/> 1st -sample pass- 2nd
<input type="checkbox"/> 0.5 Km	<input type="checkbox"/> 0.2 Km	<input type="checkbox"/> 0.15 Km	<input type="checkbox"/> <20 cm	<input type="checkbox"/> 20-<40 cm
<input type="checkbox"/> 0.12 Km	<input type="checkbox"/> OTHER	<input type="checkbox"/> > 70 cm/ CTB	<input type="checkbox"/> Secchi Dpth	<input type="checkbox"/> meters
<input type="checkbox"/> CANOPY	<input type="checkbox"/> > 85% OPEN	<input type="checkbox"/> 55%-<85%	<input type="checkbox"/> 30%-<55%	<input type="checkbox"/> 10%-<30%
<input type="checkbox"/> <10%-CLOSED	<input type="checkbox"/> 1st	<input type="checkbox"/> 2nd	<input type="checkbox"/> cm	<input type="checkbox"/> cm
<b>C) RECREATION</b>	<input type="checkbox"/> AREA	<input type="checkbox"/> DCPH	<input type="checkbox"/> POOL:	<input type="checkbox"/> >100ft
<input type="checkbox"/> >3ft	<b>B) AESTHETICS</b>	<input type="checkbox"/> NUISANCE ALGAE	<input type="checkbox"/> INVASIVE MACROPHYTES	<input type="checkbox"/> EXCESS TURBIDITY
<input type="checkbox"/> DISCOLORATION	<input type="checkbox"/> FOAM / SCUM	<input type="checkbox"/> OIL SHEEN	<input type="checkbox"/> TRASH / LITTER	<input type="checkbox"/> NUISANCE ODOR
<input type="checkbox"/> SLUDGE DEPOSITS	<input type="checkbox"/> CSOS/SSOS/OUTFALLS	<b>D) MAINTENANCE</b>	<input type="checkbox"/> PUBLIC / PRIVATE / BOTH / NA	<input type="checkbox"/> ACTIVE / HISTORIC / BOTH / NA
<input type="checkbox"/> YOUNG-SUCCESSION-OLD	<input type="checkbox"/> SPRAY / SNAG / REMOVED	<input type="checkbox"/> MODIFIED / DIPPED OUT / NA	<input type="checkbox"/> LEVEED / ONE SIDED	<input type="checkbox"/> RELOCATED / CUTOFFS
<input type="checkbox"/> MOVING-BED/LOAD-STABLE	<input type="checkbox"/> ARMOURED / SLUMPS	<input type="checkbox"/> ISLANDS / SCURED	<input type="checkbox"/> IMPOUNDED / DESICCATED	<input type="checkbox"/> FLOOD CONTROL / DRAINAGE
<b>E) ISSUES</b>	<input type="checkbox"/> WWTP / CSO / NPDES / INDUSTRY	<input type="checkbox"/> HARDENED / URBAN / DIRT&GRIME	<input type="checkbox"/> CONTAMINATED / LANDFILL	<input type="checkbox"/> BMPs-CONSTRUCTION-SEDIMENT
<input type="checkbox"/> LOGGING / IRRIGATION / COOLING	<input type="checkbox"/> BANK / EROSION / SURFACE	<input type="checkbox"/> FALSE BANK / MANURE / LAGOON	<input type="checkbox"/> WASH H <sub>2</sub> O / TILE / H <sub>2</sub> O TABLE	<input type="checkbox"/> ACID / MINE / QUARRY / FLOW
<input type="checkbox"/> NATURAL / WETLAND / STAGNANT	<input type="checkbox"/> PARK / GOLF / LAWN / HOME	<input type="checkbox"/> ATMOSPHERE / DATA PAUCITY	<b>F) MEASUREMENTS</b>	<input type="checkbox"/> $\bar{x}$ width
<input type="checkbox"/> Legacy Tree:	<input type="checkbox"/> $\bar{x}$ depth	<input type="checkbox"/> max. depth	<input type="checkbox"/> $\bar{x}$ bankfull width	<input type="checkbox"/> bankfull $\bar{x}$ depth
<input type="checkbox"/> W/D ratio	<input type="checkbox"/> bankfull max. depth	<input type="checkbox"/> floodprone $\bar{x}$ width	<input type="checkbox"/> entrench. ratio	

**Stream Drawing:**



***Appendix J***  
***Construction Plans***

# CONSTRUCTION DRAWINGS

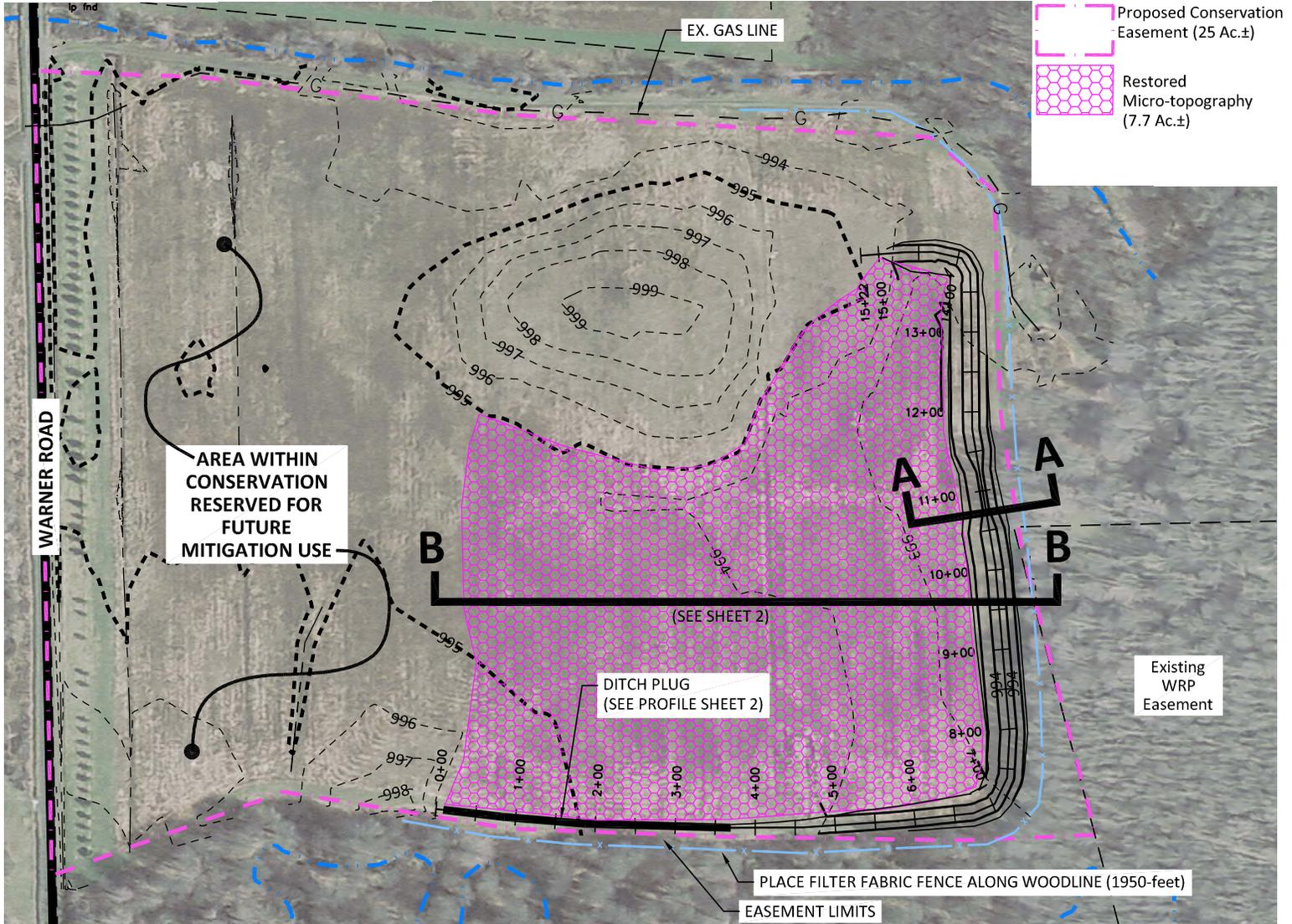
0 200



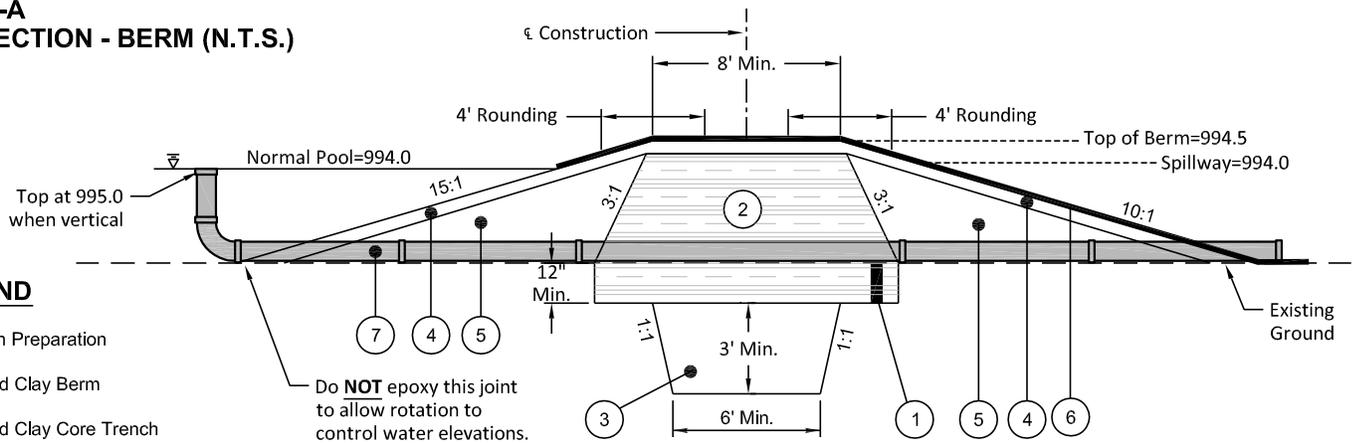
HORIZONTAL  
SCALE IN FEET



## SITE PLAN



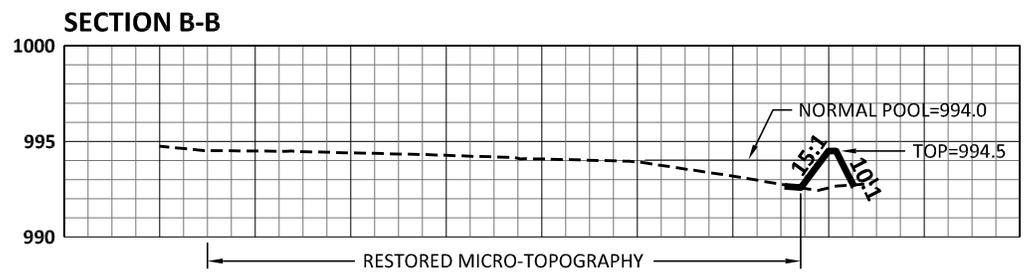
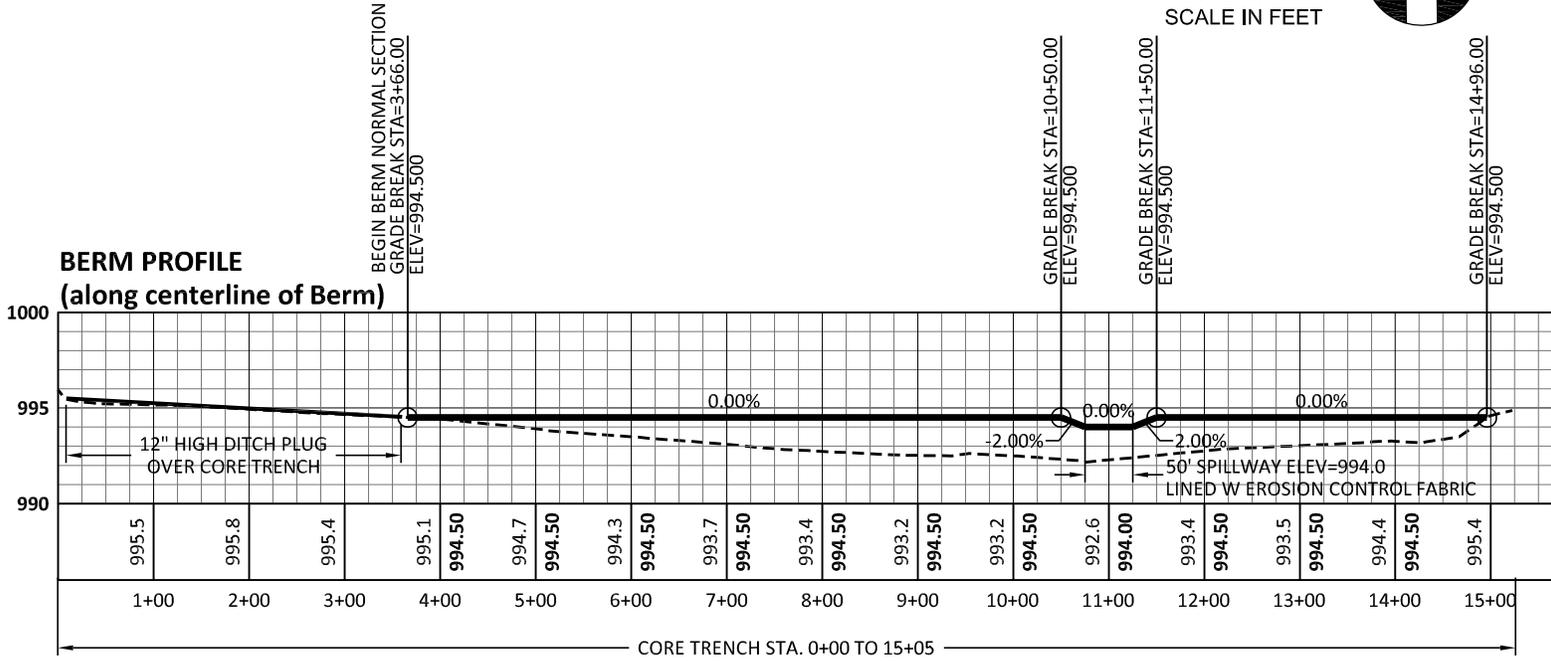
## SECTION A-A NORMAL SECTION - BERM (N.T.S.)



### LEGEND

- ① Foundation Preparation
- ② Compacted Clay Berm
- ③ Compacted Clay Core Trench
- ④ Min. 6" Topsoil, Shall Be Free of all Sod, Roots, Frozen Soil, Stones Larger than 4" Diameter, and all Other Questionable Material.
- ⑤ Compacted Topsoil Shall Be Free of all Sod, Roots, Frozen Soil, Stones Larger than 4" Diameter, and all Other Questionable Material.
- ⑥ Berm Seeding and Mulching
- ⑦ 60' - 6" PVC Bleeder Pipe

# PROFILES AND SECTIONS



## SITE PREPARATION

THE FOUNDATION AREA AND BORROW AREAS WILL BE CLEARED OF ALL TREES, STUMPS, ROOTS, BRUSH, ROCKS AND OTHER DEBRIS. THE DISPOSAL AREA FOR ALL CLEARED MATERIAL WILL BE SHOWN ON THE PLANS OR AT A LOCATION MUTUALLY ACCEPTABLE BY THE CONTRACTOR AND THE PROJECT OWNER.

THE FOUNDATION AREA WILL BE STRIPPED TO A MINIMUM OF 12 INCHES. AFTER STRIPPING, AN EXAMINATION OF THE FOUNDATION AREA WILL BE MADE BY THE PROJECT MANAGER AND ALL POCKETS OF ORGANIC SOIL, SAND AND GRAVELS, AND OTHER UNSUITABLE MATERIAL WILL BE REMOVED. ALL SLOPES WITHIN THE FOUNDATION AREA WILL BE NO STEEPER THAN 1:1 AND WILL BE SHAPED TO ACCOMMODATE COMPACTION EQUIPMENT.

BORROW AREAS WILL BE STRIPPED OF ALL VEGETATION, ORGANIC MATTER, AND OTHER UNSUITABLE MATERIALS.

## TOPSOIL

THE TOPSOIL STOCKPILED DURING SITE PREPARATION SHALL BE PLACED AS A TOP DRESSING ON THE SURFACE OF THE EMERGENCY SPILLWAY, EARTH FILL, AND BORROW AREAS. TOPSOIL USED AS A TOP DRESSING SHALL BE FREE OF ALL SOD, ROOTS, STONES GREATER THAN 4 INCHES IN DIAMETER AND ALL OTHER DELETERIOUS MATERIALS. TOPSOIL SHALL BE SPREAD ON THE ABOVE-MENTIONED LOCATIONS AT A MINIMUM DEPTH OF 6 INCHES. TOPSOIL MAY BE PLACED MORE THAN 6 INCHES DEEP IN AREAS SHOWN ON THE ON THE TYPICAL CROSS SECTIONS. THE CONSTRUCTION SEQUENCE OF BERMS SHALL BE DONE SO AS TO LIMIT THE AMOUNT OF TIME THE TOPSOIL IS STOCKPILED TO LESS THAN 60 DAYS. TOPSOIL STOCKPILES SHALL HAVE TEMPORARY SEEDING APPLIED TO IT IF IT IS TO BE STOCKPILED FOR MORE THAN 14 DAYS.

## EARTH FILL

PRIOR TO BEGINNING PLACEMENT OF EARTH FILL, THE SURFACE OF THE FOUNDATION AREA WILL BE SCARIFIED TO A DEPTH OF 6 INCHES AND COMPACTED TO THE SAME REQUIREMENTS AS SPECIFIED FOR EARTH FILL.

FILL MATERIAL WILL BE OBTAINED FROM THE BORROW AREA(S) AND SHALL BE FREE OF ALL SOD, ROOTS, FROZEN SOIL, STONES LARGER THAN 6 INCHES DIAMETER, AND OTHER OBJECTIONABLE MATERIAL. THE BORROW MATERIAL SHALL BE TESTED BY THE ENGINEER PRIOR TO USING IT AS FILL IN THE BERM. THE PLACING AND SPREADING OF THE FILL MATERIAL SHALL BE AT THE LOWEST POINT IN THE FOUNDATION AREA AND SHALL BE PLACED IN HORIZONTAL LIFTS WITH A MAXIMUM THICKNESS OF 6 INCHES PRIOR TO COMPACTION. THE SOIL SHALL BE WITHIN -2% AND 3% OF OPTIMUM MOISTURE CONTENT AND COMPACTED TO 98% OF OPTIMUM DRY DENSITY AS PER ASTM D698. A SHEEPSFOOT ROLLER SHALL BE USED TO COMPACT EACH LIFT (200 PSI MINIMUM RATING). THE PLACED FILL SHALL BE TESTED A MINIMUM OF ONCE PER 1000 S.Y. OF PLACED MATERIAL.

THE DISTRIBUTION AND GRADATION OF MATERIALS THROUGHOUT THE FILL SHALL BE SUCH THAT THERE WILL BE NO LENSES, POCKETS, STREAKS, OR LAYERS OF MATERIAL DIFFERING SUBSTANTIALLY IN TEXTURE OR GRADATION FROM THE SURROUNDING MATERIAL. WHERE IT IS NECESSARY TO USE MATERIALS OF VARYING TEXTURE AND GRADATION, THE MORE IMPERVIOUS MATERIAL SHALL BE PLACED IN THE UPSTREAM AND CENTER PORTIONS OF THE FILL.

THE MOISTURE CONTENT OF THE FILL MATERIAL BEING PLACED MUST BE MAINTAINED WITHIN THE LIMITS REQUIRED TO PERMIT SATISFACTORY COMPACTION. IF BORROW MATERIAL IS DRY, WATER MUST BE ADDED BY IRRIGATING THE BORROW AREA OR BY SPRINKLING EACH FILL LAYER PRIOR TO COMPACTION. AFTER ADDING WATER, THE FILL MATERIAL MUST BE MIXED TO OBTAIN A UNIFORM MOISTURE CONTENT PRIOR TO COMPACTION. MATERIAL THAT IS TOO WET WHEN PLACED ON THE FILL SHALL BE REMOVED, OR DRIED BY DISKING PRIOR TO COMPACTION.

IF THE TOP SURFACE OF THE PRECEDING LAYER OF COMPACTED FILL, OR ABUTMENT SURFACE IN THE ZONE OF CONTACT WITH THE FILL BECOMES TOO DRY TO PERMIT A SUITABLE BOND, IT SHALL BE SCARIFIED AND MOISTENED BY SPRINKLING TO AN ACCEPTABLE MOISTURE CONTENT PRIOR TO PLACEMENT OF THE NEXT LAYER OF FILL. IF THE TOP SURFACE OF THE FILL BECOMES TOO WET OR FROZEN, THIS MATERIAL MUST BE REMOVED PRIOR TO PLACEMENT OF THE NEXT LAYER OF FILL.

THE FINISH GRADE (AFTER PLACEMENT OF TOPSOIL) SHALL BE TO THE ELEVATIONS PLUS 0.3 FEET TO COMPENSATE FOR SETTLEMENT.

## RESTORED MICRO-TOPOGRAPHY

THE CONTRACTOR SHALL DISRUPT THE SURFACE DRAINAGE IN THE "RESTORED MICRO-TOPOGRAPHY" AREAS BY CREATING SMALL POCKETS OF WATER BY DISTURBING A MINIMUM OF 80% OF THE SURFACE AREA BY CREATING RUTS, GOUGES, DIVOTS, DEPRESSIONS, SURFACE DRAINAGE PLUGS, SMALL POOLS, AND SMALL IMPOUNDMENTS, ETC. THE WORK SHALL LEAVE A MINIMUM OF 6-INCHES OF TOPSOIL COVERAGE OVER THE ENTIRE AREA.

SLOPES IN AND AROUND SMALL POOLS, DEPRESSIONS, AND IMPOUNDMENTS SHALL TYPICALLY HAVE A MAXIMUM SLOPE OF 10:1 AND NO LESS THAN 1/2 OF THE PERIMETER SHALL HAVE SLOPES STEEPER THAN 15:1. FOLLOWING REPLACEMENT OF THE TOPSOIL AVERAGE POOL AND DEPRESSION DEPTH SHALL BE 18-INCHES BUT NO GREATER THAN 24-INCHES. POOL AND DEPRESSION BOTTOMS, ALONG WITH IMPOUNDMENTS WILL NOT BE SMOOTH GRADED, DEPTH CAN VARY WITHIN THE POOL, BUT MINIMUM TOPSOIL COVERAGE SHALL APPLY.

SIZE OF DEPRESSIONS, POOLS, AND IMPOUNDMENTS SHALL VARY FROM 0.10 ACRES TO 0.50 ACRES, WITH A GREATER DENSITY OF SMALLER POOLS. SHAPES SHALL BE IRREGULAR AND VARY FROM POOL TO POOL..

**ALL EROSION CONTROL MEASURES ARE SUBJECT TO FIELD MODIFICATIONS AT THE DIRECTION OF OHIO WETLANDS FOUNDATION**

**SWPPP GENERAL NOTES**

EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO INITIAL DISTURBANCE ACTIVITIES OR AS SOON AS PRACTICAL. THE CONTRACTOR SHALL COMPLY WITH THE TERMS AND CONDITIONS OF THE GENERAL CONSTRUCTION STORMWATER NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS UNDER THE OHIO ENVIRONMENTAL GENERAL PERMIT AND THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) DEVELOPED FOR THE PROJECT. UNDER PROVISIONS OF THAT PERMIT, CONTRACTOR SHALL BE DESIGNATED A CO-PERMITTEE AND SHALL BE RESPONSIBLE FOR PROVIDING NECESSARY MATERIAL AND FOR TAKING APPROPRIATE MEASURES TO MINIMIZE POLLUTANTS IN STORMWATER RUNOFF FROM THE PROJECT.

**DETAILS AND SPECIFICATIONS:**

DETAILS AND SPECIFICATIONS HAVE BEEN PROVIDED ON THE PLANS IN AN ATTEMPT TO HELP THE CONTRACTOR PROVIDE EROSION AND SEDIMENTATION CONTROL. THE DETAILS SHOWN ON THE PLANS SHALL BE CONSIDERED A MINIMUM. ADDITIONAL OR ALTERNATE DETAILS CAN BE FOUND IN THE ODNR MANUAL RAINWATER AND LAND DEVELOPMENT.

CONSTRUCT THE FOLLOWING FEATURES ACCORDING TO THE ODOT STANDARD CONSTRUCTION DRAWINGS:

- BALE FILTER DIKE.....DM-4.3/4.4
- CONSTRUCTION FENCE.....DM-4.3
- DIKES.....DM-4.3
- FILTER FABRIC DITCH CHECK.....DM-4.4
- INLET PROTECTION.....DM-4.4
- PERIMETER FILTER FABRIC FENCE.....DM-4.4
- ROCK CHANNEL PROTECTION TYPE C OR D WITH/WITHOUT FILTER.....DM-4.3/4.4
- SEDIMENT BASINS AND DAMS.....DM-4.3
- SLOPE DRAINS..... DM-4.3

**MAINTENANCE:**

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE SEDIMENT CONTROL FEATURES USED ON THIS PROJECT. THE SITE MAY BE INSPECTED AT A MINIMUM OF ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS OF A ½" RAINFALL EVENT (OR GREATER). RECORDS OF THESE INSPECTIONS SHALL BE KEPT AND MADE AVAILABLE TO JURISDICTIONAL AGENCIES IF REQUESTED. ANY SEDIMENT OR DEBRIS WHICH HAS REDUCED THE EFFICIENCY OF A STRUCTURE SHALL BE REMOVED IMMEDIATELY. SHOULD A STRUCTURE OR FEATURE BECOME DAMAGED, THE CONTRACTOR SHALL REPAIR OR REPLACE AT NO ADDITIONAL COST TO THE OWNER.

**SCHEDULE:**

THE CONTRACTOR SHALL PROVIDE A SCHEDULE OF OPERATIONS TO THE OWNER. SEDIMENTATION AND EROSION CONTROL FEATURES SHALL BE PLACED IN ACCORDANCE WITH THIS SCHEDULE.

**TEMPORARY STABILIZATION**

TEMPORARY STABILIZATION MEANS THE ESTABLISHMENT OF TEMPORARY VEGETATION, MULCHING, GEOTEXTILES, SOD, PRESERVATION OF EXISTING VEGETATION AND OTHER TECHNIQUES CAPABLE OF QUICKLY ESTABLISHING COVER OVER DISTURBED AREAS TO PREVENT EROSION BETWEEN CONSTRUCTION OPERATIONS.

AREAS REQUIRING TEMPORARY STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
Any areas within 50 feet of a stream and NOT at final grade.	Within two days of the most recent disturbance if the area will remain idle for more than 21 days.
For all construction activities, any disturbed areas that will be dormant for more than 21 days but less than one year, and not within 50 feet of a stream.	Within seven days of the most recent disturbance within the area For residential subdivisions, disturbed areas must be stabilized at least seven days prior to transfer of permit coverage for the individual lot(s).
Disturbed areas that will be idle over winter.	Prior to the onset of winter weather.

Ohio EPA Permit No.: OHC000002

**PERMANENT STABILIZATION**

PERMANENT STABILIZATION MEANS THE ESTABLISHMENT OF PERMANENT VEGETATION, DECORATIVE LANDSCAPE MULCHING, MATTING, SOD, RIP RAP AND LANDSCAPING TECHNIQUES TO PROVIDE PERMANENT EROSION CONTROL ON AREAS WHERE CONSTRUCTION OPERATIONS ARE COMPLETE OR WHERE NO FURTHER DISTURBANCE IS EXPECTED FOR AT LEAST ONE YEAR.

AREAS REQUIRING PERMANENT STABILIZATION	TIME FRAME TO APPLY EROSION CONTROLS
Any areas that will lie dormant for one year or more.	Within seven days of the most recent disturbance.
Any areas within 50 feet of a stream and at final grade.	Within two days of reaching final grade.
Any other areas at final grade.	Within seven days of reaching final grade within that area.

Ohio EPA Permit No.: OHC000002

**TEMPORARY AND PERMANENT SEEDING**

	AFTER MARCH 15 OR BEFORE OCTOBER 15	
PERMANENT SEEDING	ITEM 659, SEEDING AND MULCHING, AS PER PLAN (DETAILED WITHIN THESE PLANS)	INSTALL PER ODOT SS832 (MULCH AT 3 TONS/ACRE)
TEMPORARY SEEDING	ITEM 207 - CONSTRUCTION SEEDING (DETAILED WITHIN THESE PLANS); REFER TO SS832 FOR APPLICATION RATES	INSTALL PER ODOT SS832 (MULCH AT 3 TONS/ACRE)

**ITEM 659 - SEEDING AND MULCHING, AS PER PLAN**

APPLY SEED AND MULCH MATERIALS ACCORDING TO ODOT ITEM 659 AS MODIFIED BELOW.

MULCH SHALL BE ANCHORED USING A DISK, CRIMPER, OR SIMILAR TYPE TOOL SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT LEFT GENERALLY LONGER THAN 6 IN.

NO SEEDING SHALL TAKE PLACE WITHIN THE WETLAND AREA.

THE SEED MIX SHALL BE APPLIED AT A RATE OF 20 lbs./ACRE AND CONSIST OF THE FOLLOWING

Grasses @20lbs/ac		%
Virginia Wild Rye	<i>Elymus virginicus</i>	45%
Canada Wild Rye	<i>Elymus canadensis</i>	45%
Bottlebrush Grass	<i>Elymus hystrix</i>	10%

**ITEM 207 - CONSTRUCTION SEEDING**

ALL PROVISIONS OF THE ODOT CMS ITEM 659 SHALL BE FOLLOWED WITH THE FOLLOWING EXCEPTIONS. SEEDING SHALL BE RYEGRASS APPLIED AT A RATE OF 15 lbs./Acre WITH 2 TONS PER ACRE STRAW MULCH.

MULCH SHALL BE ANCHORED USING A DISK, CRIMPER, OR SIMILAR TYPE TOOL SET STRAIGHT TO PUNCH OR ANCHOR THE MULCH MATERIAL INTO THE SOIL. STRAW MECHANICALLY ANCHORED SHALL NOT BE FINELY CHOPPED BUT LEFT GENERALLY LONGER THAN 6 IN.

## Appendix K List of Species Planted

### Seed Mix

Scientific Name <sup>2</sup>	Common Name <sup>2</sup>	Indicator Status <sup>2</sup>	C of C <sup>1</sup>
<i>Asclepias incarnate</i>	swamp milkweed	OBL	4
<i>Carex comosa</i>	bearded sedge	OBL	2
<i>Carex crinite</i>	short-fringed sedge	OBL	3
<i>Carex frankii</i>	Frank's sedge	OBL	2
<i>Carex grayi</i>	Gray's sedge	FACW	5
<i>Carex lacustris</i>	lake sedge	OBL	5
<i>Carex lupulina</i>	hop sedge	OBL	3
<i>Carex lurida</i>	bottlebrush sedge	OBL	3
<i>Carex stricta</i>	tussock sedge	OBL	5
<i>Carex vulpinoidea</i>	fox sedge	OBL	1
<i>Cephalanthus occidentalis</i>	buttonbush	OBL	6
<i>Cornus sericea</i>	red-osier dogwood	FACW	3
<i>Elymus riparius</i>	riverbank wild rye	FACW	5
<i>Eupatorium perfoliatum</i>	Common boneset	FACW	3
<i>Glyceria septentrionalis</i>	floating manna grass	OBL	6
<i>Juncus effuses</i>	soft rush	OBL	1
<i>Leersia oryzoides</i>	rice cut grass	OBL	1
<i>Lobelia cardinalis</i>	cardinal-flower	OBL	5
<i>Lobelia siphilitica</i>	great lobelia	FACW	3
<i>Ludwigia alternifolia</i>	seedbox	OBL	3
<i>Mimulus ringens</i>	common monkey-flower	OBL	4
<i>Penthorum sedoides</i>	Ditch-stonecrop	OBL	2
<i>Persicaria sagittata</i>	Arrow-leaved tearthumb	OBL	2
<i>Rosa palustris</i>	swamp rose	OBL	5
<i>Rumex verticillatus</i>	swamp dock	OBL	6
<i>Sambucus canadensis</i>	common elderberry	FACU	3
<i>Schoenoplectus tabernaemontani</i>	Soft-stemmed bulrush	OBL	2
<i>Scirpus americanus</i>	three square bulrush	FACW	9
<i>Scirpus atrovirens</i>	green bulrush	OBL	1
<i>Scirpus cyperinus</i>	Wool-grass	OBL	1
<i>Spartina pectinata</i>	prairie cord grass	OBL	5
<i>Spiraea alba</i>	Meadow-sweet	FACW	3
<i>Verbena hastate</i>	blue vervain	FACW	4

<sup>1</sup> Coefficient of Conservatism (C of C) data were obtained from Andreas et al., 2004.

<sup>2</sup> Species names and indicator status obtained from Lichvar 2012.

## Planted Trees and Shrubs

Scientific Name <sup>2</sup>	Common Name <sup>2</sup>	Indicator Status <sup>2</sup>	C of C <sup>1</sup>	Number Planted
<i>Acer saccharinum</i>	silver maple	FACW	3	200
<i>Carya ovata</i>	shagbark hickory	FACU	6	100
<i>Cephalanthus occidentalis</i>	buttonbush	OBL	6	500
<i>Cornus racemosa</i>	gray dogwood	FAC	1	25
<i>Fagus grandifolia</i>	American beech	FACU	7	100
<i>Ilex verticillata</i>	Winterberry	FACW	7	50
<i>Juglans nigra</i>	black walnut	FACU	5	100
<i>Liriodendron tulipifera</i>	tulip tree	FACU	6	100
<i>Photinia melanocarpa</i>	black chokeberry	FAC	5	25
<i>Platanus occidentalis</i>	Sycamore	FACW	7	500
<i>Quercus alba</i>	white oak	FACU	6	100
<i>Quercus bicolor</i>	swamp white oak	FACW	7	400
<i>Quercus palustris</i>	pin oak	FACW	5	400
<i>Quercus rubra</i>	red oak	FACU	6	100
<i>Viburnum lentago</i>	nannyberry	FAC	5	50
<i>Viburnum opulus</i>	highbush-cranberry	FACW	8	100
<b>Total</b>				<b>2,850</b>

<sup>1</sup> Coefficient of Conservatism (C of C) data were obtained from Andreas et al., 2004.

<sup>2</sup> Species names and indicator statuses were obtained from Lichvar 2012.

## Appendix L

### References

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## Appendix M

### Davey Resource Group Personnel Profiles

**Shawn Bruzda** is a biologist with Davey Resource Group, having served in this capacity for 10 years. Mr. Bruzda focuses on ecological surveys involving fish and macroinvertebrate identification, amphibian surveys, and data analysis. He is proficient with the Index of Biotic Integrity (IBI), the Modified Index of Well-Being (MIWB), and the Invertebrate Community Index (ICI), all used by Ohio Environmental Protection Agency to set minimum criteria index scores for use designations in water quality standards. He works on large- and small-scale bat survey projects, assisting with mist-net surveys, habitat evaluations, and radio tracking studies to determine foraging patterns; endangered species and habitat studies; invasive species management; and water quality studies. Mr. Bruzda has completed training through Ohio Environmental Protection Agency for conducting the following: Qualitative Habitat Evaluation Index (QHEI); Ohio Rapid Assessment Method (ORAM) v.5; and Vegetation Index of Biotic Integrity (VIBI). Proficient with AutoCAD® 2012 and ArcGIS™ 10 software, Mr. Bruzda creates maps for a wide variety of natural resource projects. He is a Certified Commercial Pesticide Applicator in Ohio (ID# 119080). Mr. Bruzda is a graduate of Kent State University, having received a Bachelor of Science degree in biological sciences with an emphasis in aquatic ecology.

**Ana Burns, M.S.E.S.**, is a biologist and coordinator of ecological services for Davey Resource Group's Natural Resource Consulting group. Ms. Burns has 13 years of experience in the natural resources and environmental planning fields and at Davey Resource Group is responsible for overseeing all ecological surveys and environmental planning studies, as well as the specialized management of ecological and wetlands permitting projects, mitigation bank planning and monitoring projects, and natural resource restoration design projects. She is knowledgeable of state and federal stream and wetlands regulations, all aspects of Section 401 and 404 permitting, isolated wetlands regulations, and the federal mitigation rule for compensatory mitigation and its application to mitigation banking. Ms. Burns has managed multiple Section 401 and 404 permitting projects along with numerous natural resource inventories and planning projects. She has completed the Vegetation Index of Biotic Integrity (VIBI) training through Ohio Environmental Protection Agency. In addition, Ms. Burns has provided assistance with grant writing and managing grant-funded projects. Ms. Burns has coordinated and facilitated public meetings and hearings and has assisted in the development of various planning documents including greenways planning, watershed planning, and urban forestry management plans. With a background in urban and rural planning, she is well versed in working with planning commissions, steering committees, and local political groups and has given many presentations at a variety of venues. Ms. Burns is a board member and secretary of the Tinkers Creek Watershed Partnership and active in the Ohio Lake Management Society. Ms. Burns graduated from Indiana University with a Bachelor of Science degree in biology and holds a Master of Science degree in environmental science from IU's School of Public and Environmental Affairs.

**Ken Christensen** is a senior biologist with more than 30 years of experience in the natural resource field. Mr. Christensen is involved in all aspects of wetlands and stream restoration projects, including design, planting, and implementation. He is also involved with monitoring of mitigation and restoration projects to ensure that such endeavors reach a successful conclusion. Mr. Christensen assists in plant surveys and wetlands delineations and in the field identification of vertebrate populations, especially amphibians, reptiles, and mammals. Proficient with AutoCAD® software, Mr. Christensen is responsible for managing the Global Navigation Satellite System (GNSS) data collection and AutoCAD® mapping operations for all natural resource studies. As an International Society of Arboriculture Certified Arborist

(OH-0690A), he performs tree appraisals and inventories and also develops tree preservation plans. Mr. Christensen is a LEED® Accredited Professional and has received the following training: American Ecological Engineering Society Wetland Mitigation Design from Virginia Polytechnic Institute and State University; AutoCAD® for Stream Restoration and Monitoring from North Carolina Cooperative Extension; North Carolina Stream Restoration Institute's Stream Classification and Assessment Program and Stream Restoration Design Principles. Mr. Christensen is prequalified by the Ohio Department of Transportation for wetland mitigation. He has also completed training through Ohio Environmental Protection Agency for conducting the following: Headwater Habitat Evaluation Index (HHEI); Qualitative Habitat Evaluation Index (QHEI); Ohio Rapid Assessment Method (ORAM) v.5; and Vegetation Index of Biotic Integrity (VIBI). He is a member of the International Society of Arboriculture, Ecological Landscaping Association, and Northern Ohio Association of Herpetologists. Mr. Christensen holds a Bachelor of Science degree in conservation from Kent State University.

**Todd Crandall, M.En.**, is a senior wetlands scientist with 22 years of experience performing wetlands delineations in Ohio and adjacent states. Mr. Crandall also performs ecological surveys, vegetation cover mapping, plant identification, and Section 401/404 and isolated wetlands permitting. He also contributes to the planning and design of restoration wetlands and prepares wetland mitigation reports. Mr. Crandall is responsible for vegetation monitoring at numerous wetlands mitigation sites throughout Ohio. He has completed large-scale wetlands and natural resource inventories for the Cuyahoga Valley National Park, as well as Cuyahoga, Medina, Portage, and Summit Counties in Northeast Ohio. He is certified to perform wetlands studies by the U.S. Army Wetlands Delineator Certification Program, and is a certified Professional Wetland Scientist through the Society of Wetland Scientists. He has completed the 40-hour OSHA health and safety training (OSHA Standard 29 CFR 1910.120). Mr. Crandall has successfully completed the Ohio Department of Transportation's (ODOT) Ecological Training hosted by the Office of Environmental Services. He is ODOT prequalified for ecological surveys and wetland mitigation. Mr. Crandall has also completed training through the Ohio Environmental Protection Agency for the following: Headwater Habitat Evaluation Index (HHEI); Qualitative Habitat Evaluation Index (QHEI); Ohio Rapid Assessment Method (ORAM) v.5; and Vegetation Index of Biotic Integrity (VIBI). He holds a Bachelor of Science degree from Hiram College in biology and a Master's degree in environmental science from Miami University.

**Greg Snowden, M.S.**, is a biologist and project manager with Davey Resource Group. He regularly prepares Section 404/401 and Ohio isolated wetland permit applications for private, public and transportation projects, annual compensatory mitigation monitoring reports, compensatory mitigation monitoring plans, Ohio Department of Transportation (ODOT) categorical exclusion documents, ODOT 4f/6f documents, and ODOT ecological survey reports. Mr. Snowden also has extensive experience and knowledge of the 2008 Federal mitigation rule (33 CFR Part 332), specifically related to the establishment and operation of in-lieu fee programs and mitigation banks. He is well versed in all aspects of federal and state wetland and stream regulations and the intricacies of the Section 404/401 and isolated wetland permitting process. Mr. Snowden routinely performs several types of fieldwork, including wetland and stream delineations, ODOT ecological surveys, endangered species surveys, restoration construction oversight, wetland vegetation assessments, and compensatory mitigation project monitoring. Mr. Snowden has successfully completed the following training courses: Ohio Rapid Assessment Method (ORAM) for wetlands v. 5.0 and Headwater Habitat Evaluation Index (HHEI) through Ohio Environmental Protection Agency (EPA), Qualitative Habitat Evaluation Index (QHEI) through the Midwest Biodiversity

Institute, hydric soils training through Wetlands and Soil Consulting Services, and Categorical Exclusion, Purpose and Need, Waterway Permits, and Ecological Survey courses through ODOT's Office of Environmental Services. He is an Ohio EPA Level 2 Qualified Data Collector in its Surface Water Credible Data Program. During summer 2012, Mr. Snowden attended a week-long wetland delineation training course offered by the Swamp School, focusing on the 1987 Manual, and the Eastern Mountain and Piedmont, and Northcentral and Northeast regional supplements. Mr. Snowden graduated from Ohio University's Honors Tutorial College with a Bachelor of Science degree in environmental and plant biology and received a Master of Science degree in biological sciences (ecology, evolution, and the environment) from the University of Notre Dame.