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December 3, 2018

Via Electronic Filing

Ms. Barcy McNeal
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: Seneca Wind, LLC
Case No. 18-488-EL-BGN

Dear Ms. McNeal:

On July 16, 2018, Seneca Wind, LLC (“Seneca Wind”) filed an Application for a Certificate of Environmental Compatibility and Public Need for a wind-powered generating facility in Seneca County, Ohio (“Application”). The Application included a Preliminary Aquatic Resource Report (Appendix L) that identified wetlands and waters within a 9,200-acre Wetland Survey Area.

The Application noted that boundaries were generally denoted in this effort, conservatively identifying potential wetland and stream areas within the Wetland Survey Area. In addition, 21 of the 176 wetlands identified in this report were on parcels for which access was not available at the time of the survey. As noted in the Application, more detailed delineations to refine the conservative boundaries identified through the preliminary field reconnaissance were to be conducted in locations where Project activities are proposed to occur in or near potential wetland resources.

The more detailed delineation effort has been completed. The Aquatic Resource Report included with this filing refined the Aquatic Study Area to a 3,622-acre area within which Project-related work is proposed. Within this more refined area and with a more a detailed delineation effort, a total of 44 wetlands and 46 stream reaches were identified. No Category 3 wetlands are located within the Aquatic Study Area. Shapefiles are provided with this filing that reflects the updated delineations.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Dylan F. Borchers

Attachment

Cc: Jim O’Dell (w/Attachment)

Aquatic Resource Report

**Seneca Wind Project
Seneca County, Ohio**

November 2018

Prepared for:

Seneca Wind LLC

Prepared by:

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ACRONYMS AND ABBREVIATIONS

Acronyms/Abbreviations	Definition
1987 Manual	United States Army Corps of Engineers Wetland Delineation Manual
the Aquatic Study Area	a 3,622-acre portion of the larger 56,900-acre Project area on which this report focuses
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
GIS	Geographic Information Systems
HGM	Hydrogeomorphic
HHEI	Headwater Habitat Evaluation Index
HUC	Hydrologic Unit Code
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OAC	Ohio Administrative Code
OBL	obligate
Ohio EPA	Ohio Environmental Protection Agency
ORAM	Ohio Rapid Assessment Method for Wetlands
OWI	Ohio Wetlands Inventory
PEM	palustrine emergent
PFO	palustrine forested
PHWH	Primary Headwater Habitats
Project	Seneca Wind
PSS	palustrine scrub-shrub
PUB	palustrine unconsolidated bottom
QHEI	Qualitative Habitat Evaluation Index
Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, August 2010
RPW	Relatively Permanent Water
Seneca Wind	Seneca Wind LLC
Tetra Tech	Tetra Tech, Inc.
TNW	Traditionally Navigable Water
UNT	unnamed tributary
UPL	upland
USACE	United States Army Corps of Engineers

Acronyms/Abbreviations	Definition
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

Seneca Wind LLC (Seneca Wind) is proposing to develop, finance, build, own, and operate Seneca Wind (the Project), an approximately 212-megawatt wind-energy facility located in Seneca County, Ohio, as shown on Figures 1-1 to 1-7. The Project will consist of up to 85 wind turbine generators with a hub height of up to 134-meters, as well as access roads, electrical collector cables, a Project substation, a 138-kilovolt electric generation tie line, laydown yards for construction staging, an operations and maintenance facility, and up to four permanent 134-meter meteorological towers. The energy generated by the Project will deliver power to a single point of interconnection at the American Electric Power Ohio Transmission Company, Inc.'s existing Melmore Substation. The Project will be located within an area comprised of approximately 56,900 acres of private land in Seneca County, predominantly in active agricultural use. Areas of wooded vegetation, local roadways, and residential development are scattered throughout the Project Area. The proposed Project is located within the Huron-Vermilion (Hydrologic Unit Code [HUC] 8 04100012) and Sandusky (HUC 8 04100011) Watersheds.

This Aquatic Resource Report for the proposed Project was prepared by Tetra Tech, Inc. (Tetra Tech) on behalf of Seneca Wind. The investigation for the presence of wetlands and surface water features for the Project utilized methodologies enumerated in the United States Army Corps of Engineers (USACE) *Wetland Delineation Manual (1987 Manual; Environmental Laboratory 1987)*, as amended by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, August 2010 (Regional Supplement; Environmental Laboratory 2010)*. The report represents an update of preliminary information presented in the Preliminary Aquatic Resource Evaluation Report conducted by Tetra Tech, provided as Appendix L to the Application for a Certificate of Environmental Compatibility and Public Need submitted to the Ohio Power Siting Board in July 2018 (Tetra Tech 2018).

The content of this report presents the methodology, results, and conclusions of wetland delineation and stream identification activities completed for the proposed Project.

2.0 METHODOLOGY

2.1 WETLAND DELINEATION AND ORAM ASSESSMENT

USACE requires the use of the procedures described in the *1987 Manual* (Environmental Laboratory 1987) and the *Regional Supplement* (Environmental Laboratory 2010) for making wetland determinations. According to the *1987 Manual* (Environmental Laboratory 1987), an area is defined as a wetland if, under normal circumstances, it meets all three of the following criteria:

- Predominance of hydrophytic vegetation (plants adapted for life in saturated soil conditions);
- Hydric soils (soils formed under water or in saturated conditions); and
- Wetland hydrology (presence of inundated or saturated soils at some time during the growing season).

Wetlands are identified by classification of general vegetation characteristics and dominant vegetation types. Procedures outlined in the *Regional Supplement* (Environmental Laboratory 2010) are followed in order to make wetland determinations in areas where human practices or natural events have influenced vegetation. As reflected in that guidance, to the extent possible, hydrophytic vegetation decisions are based on the plant community that is normally present during the wet portion of the growing season in a normal rainfall year. In areas where soils have been significantly influenced or disturbed, hydric soils decisions may be based on NRCS soil mapping of hydric soils or an examination of soils in an undisturbed reference area with similar position, parent material, and hydrology. Current wetland hydrology indicators, wetness signatures on historical aerial imagery, and estimates of the effects of ditches and subsurface drainage systems are all taken into account when making decisions regarding wetland hydrology in areas where human practices or natural events may have manipulated wetland hydrology.

Wetlands identified in the field are classified in accordance with the United States Fish and Wildlife Service's (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), *A Hydrogeomorphic (HGM) Classification for Wetlands* (Brinson 1993), and USACE Waters Type (USACE 2007). Cowardin wetland classifications (Cowardin et al. 1979) are described below.

- *Palustrine emergent (PEM)* – contain emergent, herbaceous (non-woody) plants which are the tallest life form with at least 30 percent aerial coverage.
- *Palustrine scrub-shrub (PSS)* – contain woody plants less than six meters (20 feet) in height which are the tallest life form with at least 30 percent aerial coverage or when trees or shrubs alone cover less than 30 percent of an area but in combination cover 30 percent or more. Trees are defined as woody plants at least six meters (20 feet) in height, and shrubs are defined as woody plants less than six meters (20 feet) in height with at least 30 percent aerial coverage.
- *Palustrine forested (PFO)* – contain woody plants at least six meters (20 feet) in height which are the tallest life form with at least 30 percent aerial coverage.
- *Palustrine unconsolidated bottom (PUB)* – contain all wetland and deepwater habitats with at least 25 percent cover of particles smaller than stones, and a vegetative cover of less than 30 percent.

Dominant vegetation is identified and classified according to *The National Wetland Plant List: 2016 wetland ratings* (Lichvar 2016). Plant classifications are described below.

- *Obligate (OBL)* – essentially always found in wetlands; estimated probability >99 percent
- *Facultative Wetland (FACW)* – usually found in wetlands; estimated probability 67-99 percent
- *Facultative (FAC)* – equally likely to occur in wetlands and non-wetlands; estimated probability 34-66 percent

- *Facultative Upland (FACU)* – usually occurs in non-wetlands; estimated probability 1-33 percent
- *Upland (UPL)* – rarely occurs in wetlands; estimated probability <1percent

ORAM Assessment

In addition to the USACE wetland delineation, a wetland assessment is performed to determine ecological quality and level of function of each wetland system as required by the Ohio Environmental Protection Agency (Ohio EPA). The *Ohio Rapid Assessment Method for Wetlands* (ORAM; Mack 2001) was used to perform this evaluation. The ORAM uses metrics relating to wetland size, adjacent upland land use, hydrology, habitat alteration, special habitats, and plant communities to calculate and assign each wetland system to a Category. Wetlands are designated as either Category 1, Category 2, Modified Category 2, or Category 3. These categories correspond to wetlands of low, medium, and high quality, respectively.

In many instances the ORAM scoring boundaries coincide with the delineated boundaries of single wetlands. However, wetlands may be scored together in circumstances where wetlands are small (< 1 acre), located in close proximity to each other within the same forest, flood plain, soil mapping unit, field, etc., and are separated from each other by relatively narrow areas of non-wetland (Mack 2001).

2.2 STREAM IDENTIFICATION AND OHIO EPA STREAM EVALUATION

Streams identified in the field are classified by Flow Regime (USEPA 2017), USACE Water Type (USACE 2007), and Cowardin Classification (Cowardin et al. 1979).

- *Ephemeral* – Rain-dependent streams flowing only after precipitation event. Precipitation driven run-off from the localized surrounding landscape is the primary source of hydrology; ephemeral streams have no groundwater contributions. Ephemeral streams are different from non-jurisdictional ditches and drainages due to the presence of an observable ordinary high water mark. An ephemeral stream is considered a Non-Relatively Permanent Water which does not have continuous flow at least seasonally and flows directly or indirectly to a Traditionally Navigable Water (TNW).
- *Intermittent* – Streams with seasonal flow typically during the wet season (winter through spring). At least a portion of the hydrology for intermittent streams is derived from groundwater sources with precipitation as a supplemental hydrologic contributor. An intermittent stream is considered a Relatively Permanent Water (RPW) since there is seasonally continuous flow and the stream flows directly or indirectly to a TNW.
- *Perennial* – Streams that typically have flow year-round. Most of the hydrology for perennial streams derives from smaller upstream waters and/or groundwater sources with precipitation as a supplemental hydrologic contributor. Perennial streams are considered RPW since there is continuous flow year-round and the stream flows directly or indirectly to a TNW; however, perennial streams may be considered TNW if listed as a navigable water of the United States by the USACE.

Ohio EPA Stream Evaluation

Streams with a drainage area greater than one square mile or a maximum pool depth greater than 40 centimeters are evaluated using the Ohio EPA's Qualitative Habitat Evaluation Index (QHEI) and associated field data form (Ohio EPA 2006). The QHEI is a quantitative evaluation of physical stream characteristics which are important to supporting fish communities. Six individual metrics are scored then added; the total maximum score of this quantitative evaluation is 100. The evaluated characteristics include substrate, instream cover, channel morphology, riparian zone, pool quality, and riffle quality. Rating scales vary slightly between headwater streams, which have watersheds less than 20 square miles, and streams with larger watersheds. For headwater streams QHEI scores greater than or equal to 70 correspond to an excellent rating, 55 – 69 to a good rating, 43 – 54 to a rating of fair, 30 – 42 to a rating of poor, and less than 30 to a rating of very poor. For streams with larger watersheds QHEI scores

greater than or equal to 75 correspond to an excellent rating, 60 – 74 to a good rating, 45 – 59 to a rating of fair, 30 – 44 to a rating of poor, and less than 30 to a rating of very poor.

Headwater streams located within Ohio are evaluated using methods set forth in the Field Evaluation Manual for Ohio's Primary Headwater Streams (Ohio EPA 2012). Streams can be designated as either Modified Class I, Modified Class II, Class I, Class II or Class III (Class IIIA or Class IIIB) Primary Headwater Habitats (PHWH) under Ohio Administrative Code (OAC) 3745-1-07 (F)(9)(d). Ohio EPA (2012) defines Class I PHWH streams as ephemeral streams that have little or no aquatic life potential, except seasonally when flowing water is present for short time periods following precipitation or snow melt. Class II PHWH streams are defined as streams that are normally intermittent but may have perennial flow. These watercourses may exhibit moderately diverse communities of warm water-adapted native fauna present either seasonally or year-round. The native fauna is characterized by species of vertebrates (temperature facultative species of amphibians and pioneering species of fish) and benthic macroinvertebrates (Ohio EPA 2012). Class III PHWH streams are perennial streams in which the prevailing flow and temperature conditions in are influenced by groundwater. They exhibit moderately diverse to highly diverse communities of cold water adapted native fauna present year-round. Class IIIA streams exhibit diverse communities of native fauna, and Class IIIB streams exhibit superior species composition or diversity of native fauna (Ohio EPA 2012).

To evaluate streams according to the Field Evaluation Manual for Ohio's Primary Headwater Stream, a Level 1 Assessment is performed at all headwater streams located in Ohio using the Primary Headwater Habitat Evaluation Index (HHEI) form. A Level 1 Assessment was conducted for this report, which is performed by predicting the biological characteristics of the stream through an assessment of the stream's physical characteristics and habitat, and recording these characteristics and assessments on an Ohio EPA-issued form. More detailed Level 2 or Level 3 assessments are possible, if warranted based on impacts proposed.

Stream designations are identified and classified in with OAC 3745-1 Water Quality Standards (OAC 2017).

2.3 FIELD SURVEYS

Preliminary site reconnaissance of the Project site was conducted through a review of available Geographic Information Systems (GIS) resources. Existing information reviewed included the following:

- United States Geological Survey (USGS) topographic mapping (Figures 1-1 to 1-7; USGS 2009);
- Natural Resources Conservation Service (NRCS) National Cooperative Soil Survey (Figures 2-1 to 2-7; NRCS 2014) mapping and data;
- USFWS National Wetland Inventory (NWI) Mapping (Figures 3A-1 to 3A-7; USFWS 2009);
- Ohio Wetlands Inventory (OWI) Mapping (Figures 3B-1 to 3B-7; ODNR 2014)

The field investigations for the proposed Project were performed September 17 through September 28, 2018. The field surveys were limited to an approximately 3,622-acre area study area within the 56,900 Project area (the Aquatic Study Area) reflecting the Project disturbance area. The Aquatic Study Area is illustrated on Project Figures 1 through 4.

Wetland delineation in the field involves the establishment of the wetland/upland margin with flagging hung at intervals that accurately depicted the outline of the wetland boundary. The individual flags are then located using a Global Positioning System receiver with sub-meter accuracy and these points are later added to the Project area mapping. Wetland flagging is limited to the bounds of the investigated Aquatic Study Area and wetlands are shown as closed or partially closed systems on the Aquatic Resource Location Maps (Figures 4-1 to 4-49).

Wetlands and streams identified are given unique identification names (i.e. Wetland ID, Stream ID). For streams, the National Hydrography Dataset (NHD) mapped stream names (USGS 2015) are also provided in the results. For identified streams without a NHD name, the stream was given the name "Unnamed Tributary" of the first named receiving waterbody.

Data on soils, hydrology, and vegetation are collected and recorded on USACE Wetland Determination Data Forms at wetlands and at upland point locations associated with each wetland (see Appendix A). ORAM data forms are provided in Appendix B. Photographs of wetland areas and vegetation are included in Appendix C. Ohio EPA HHEI and QHEI data forms detailing stream characteristics are provided in Appendix D. Appendix E contains photographs of the identified streams. Resumes of field personnel, summarizing professional experience, qualifications, and education, are included in Appendix F.

3.0 RESULTS

The field investigations identified 44 wetlands and 46 stream reaches within the Aquatic Study Area. The Aquatic Resource Location Maps, provided as Figures 4-1 to 4-49, illustrate the wetland and watercourse locations in the Aquatic Study Area. Tables 1 and 2 summarize wetland and stream information for wetlands and stream reaches identified within the Aquatic Study Area.

3.1 WETLAND IDENTIFICATION AND DELINEATION

NRCS mapped hydric soil units and soil units with hydric components are often associated with wetlands identified in the field; however, not all areas identified in NRCS hydric soil units meet all three jurisdictional wetland criteria (hydric soils, predominance of hydrophytic vegetation, and wetland hydrology). Table 3 summarizes the NRCS hydric soils list for Seneca County. The NRCS soil survey mapping units are shown on Figures 2-1 to 2-7. Confirmation of the soil mapping units was not performed during this site evaluation.

A review of the USFWS NWI database indicates that there are 16 NWI-mapped wetlands identified in the Aquatic Study Area (Figures 3A-1 to 3A-7). Twenty-six OWI wetlands are mapped within the Aquatic Study Area (Figures 3B-1 to 3B-7).

Based on review of available GIS mapping data, evidence collected during field surveys, and best professional judgment, a total of 44 wetlands were identified and delineated within the Aquatic Study Area.

A summary of each wetland identified and delineated within the Aquatic Study Area is provided in Table 1. Table 1 includes the location of each wetland, Cowardin classification, HGM classification, Waters Type classification, the identity of any associated (i.e. abutting or adjacent) waterbodies, wetland size within the Aquatic Study Area, whether the wetland boundary is open or closed (open wetland boundaries indicate that delineated wetlands extend beyond the investigated Aquatic Study Area), and ORAM score and Category. Wetlands with multiple habitat types (e.g. PEM and PSS) are considered a single wetland system and are counted as one wetland.

3.2 STREAM IDENTIFICATION AND EVALUATION

Based on review of available GIS mapping data, evidence collected during field surveys, and best professional judgment, 46 stream reaches were identified and evaluated within the Aquatic Study Area. Table 2 provides a summary of each stream, including the stream field identification name (Stream ID), the NHD-mapped stream name (NHD Stream Name), stream location, Flow Regime classification, Water Type classification, Cowardin classification, HHEI or QHEI score, HHEI class or QHEI narrative rating, bank full width, flow direction, and associated figure sheet location. HHEI and QHEI data forms are provided for each stream in Appendix D. Photographs of the identified streams are provided in Appendix E.

4.0 CONCLUSION

Forty-four wetlands and 46 stream reaches were analyzed within the Aquatic Study Area.

Of the 44 wetlands identified, there were:

- 28 PEM wetlands,
- 1 PSS wetland,
- 7 PFO wetlands,
- 6 PEM/PFO wetland complexes, and
- 2 PEM/PSS wetland complexes.

Of the 46 stream reaches identified, there were:

- 12 ephemeral stream reaches,
- 24 intermittent stream reaches, and
- 10 perennial stream reaches.

All identified wetland and stream data is provided in Tables 1 and 2 and the locations of all wetlands and streams are shown on the Aquatic Resource Location Maps (Figure 4-1 to 4-49).

The wetland delineation and stream identification services performed by Tetra Tech were conducted in accordance with the *1987 Manual* (Environmental Laboratory 1987) and *Regional Supplement* (Environmental Laboratory 2010). This aquatic resource report represents our best professional judgment and is based on site conditions at the time of the field investigation. However, final authority over the determinations made during these surveys rests with the Ohio EPA and the USACE.

5.0 REFERENCES

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TABLES

Table 1: Wetlands

Table 2: Streams

Table 3: Seneca County Hydric Soil List

**Table 1.
Identified Wetlands**

Wetland Number	Wetland ID	County	Latitude ¹	Longitude ¹	Cowardin Class ²	HGM ³	Water Type ⁴	ORAM Score ⁵	ORAM Category ⁵	Associated Waterbodies	Size (Acres) ⁶	Size (square feet) ⁵	Open/Closed Boundary	Figure(s)
1	W-A1	Seneca	41.056935	-82.846773	PEM	Slope	RPWWN	18	Category 1	UNT to Honey Creek (outside study area)	0.20	8741	Open	4-1
2	W-A4	Seneca	41.089937	-82.929647	PEM	Slope	ISOLATE	14	Category 1	-	0.01	579	Open	4-8, 4-11
3	W-A5	Seneca	41.090003	-82.927616	PEM	Slope	ISOLATE	14	Category 1	-	0.02	762	Open	4-8, 4-11
4	W-A36	Seneca	41.078587	-82.926929	PEM	Slope	RPWWN	12	Category 1	UNT to Honey Creek (outside study area)	0.15	6405	Open	4-9
5	W-A35	Seneca	41.087859	-82.942252	PEM	Slope	RPWWN	8	Category 1	UNT to Honey Creek (outside study area)	0.21	9079	Open	4-9, 4-10
6	W-A2	Seneca	41.104408	-82.897392	PFO	Depressional	ISOLATE	36	Modified 2	-	0.05	2199	Open	4-12, 4-13
7	W-B14	Seneca	41.101753	-82.881445	PFO	Depressional	RPWWN	41	Modified 2	S-B13 (UNT to Honey Creek)	0.35	15288	Open	4-13, 4-14
8	W-B13	Seneca	41.103526	-82.877788	PFO	Riverine	NRPWW	42	Modified 2	S-B12 (UNT to Honey Creek)	0.08	3539	Open	4-14
9	W-B12	Seneca	41.102735	-82.878477	PEM	Riverine	NRPWW	42	Modified 2	S-B12 (UNT to Honey Creek)	0.06	2792	Open	4-14
10	W-A3	Seneca	41.124201	-82.916656	PEM	Depressional	ISOLATE	22	Category 1	S-A8 (UNT to Rock Creek)	0.07	2932	Open	4-16, 4-17
11	W-A8	Seneca	41.110156	-82.970844	PSS	Riverine	RPWWD	27	Category 1	S-A14 (UNT to Rock Creek)	0.02	770	Closed	4-21
12	W-A7	Seneca	41.113430	-82.967275	PEM	Riverine	RPWWD	21	Category 1	S-A13 (UNT to Rock Creek)	0.15	6427	Open	4-21
13	W-A6	Seneca	41.113464	-82.967103	PEM	Riverine	RPWWD	21	Category 1	S-A13 (UNT to Rock Creek)	0.02	810	Closed	4-21
14	W-A9	Seneca	41.098722	-82.972753	PEM	Slope	RPWWD	18	Category 1	UNT to Rock Creek (outside study area)	0.37	16206	Open	4-22
15	W-A12	Seneca	41.089012	-82.972068	PEM	Slope	ISOLATE	19	Category 1	-	0.17	7306	Open	4-23
16	W-A13	Seneca	41.085575	-82.986255	PEM	Riverine	RPWWD	23	Category 1	S-A18 (UNT to Honey Creek)	0.43	18549	Open	4-23
17	W-A11	Seneca	41.083834	-82.974342	PEM	Slope	RPWWD	16	Category 1	UNT to Honey Creek (outside study area)	0.01	646	Open	4-23, 4-24
18	W-A14	Seneca	41.090248	-82.983673	PFO	Slope	NRPWW	44	Modified 2	UNT to Honey Creek (outside study area)	0.83	36107	Open	4-25
19	W-A15 PEM	Seneca	41.091054	-82.994955	PEM	Slope	RPWWN	44	Modified 2	UNT to Honey Creek (outside study area)	0.12	5311	Open	4-25
	W-A15 PFO	Seneca	41.090893	-82.995067	PFO	Slope	RPWWD	44	Modified 2	UNT to Honey Creek (outside study area)	0.13	5779	Open	4-25
20	W-A16 PEM	Seneca	41.088672	-83.006344	PEM	Slope	RPWWN	40.5	Modified 2	UNT to Honey Creek (outside study area)	0.17	7409	Open	4-27
	W-A16 PFO	Seneca	41.088406	-83.006678	PFO	Slope	RPWWN	40.5	Modified 2	UNT to Honey Creek (outside study area)	1.54	67147	Open	4-27
21	W-A17	Seneca	41.092129	-83.011530	PEM	Riverine	RPWWD	23	Category 1	S-A23 (UNT to East Branch Rock Creek)	0.03	1468	Closed	4-27

**Table 1.
Identified Wetlands**

Wetland Number	Wetland ID	County	Latitude ¹	Longitude ¹	Cowardin Class ²	HGM ³	Water Type ⁴	ORAM Score ⁵	ORAM Category ⁵	Associated Waterbodies	Size (Acres) ⁶	Size (square feet) ⁵	Open/Closed Boundary	Figure(s)
22	W-A10	Seneca	41.109086	-83.028432	PEM	Slope	RPWWN	12	Category 1	Rock Creek (outside study area)	0.19	8194	Open	4-28
23	W-A20	Seneca	41.081290	-83.034451	PEM	Slope	RPWWD	21	Category 1	UNT to East Branch Rock Creek (outside study area)	0.05	2082	Closed	4-29, 4-30
24	W-A21	Seneca	41.076216	-83.025858	PEM	Slope	RPWWN	11	Category 1	S-A25 (UNT to Honey Creek)	0.02	763	Closed	4-30
25	W-A22	Seneca	41.075462	-83.035367	PEM	Depressional	NRPWW	30.5	Modified 2	UNT to Honey Creek (outside study area)	0.07	3083	Open	4-29
26	W-A23 PEM	Seneca	41.075370	-83.036555	PEM	Depressional	NRPWW	30.5	Modified 2	UNT to Honey Creek (outside study area)	0.11	4708	Open	4-29
	W-A23 PFO	Seneca	41.075483	-83.037243	PFO	Depressional	NRPWW	30.5	Modified 2	UNT to Honey Creek (outside study area)	0.15	6520	Open	4-29
27	W-A24	Seneca	41.075198	-83.044168	PEM	Slope	ISOLATE	15	Category 1	-	0.04	1676	Closed	4-29
28	W-A19 PEM	Seneca	41.080254	-83.018523	PEM	Riverine	RPWWD	25	Category 1	S-A25 (UNT to Honey Creek)	0.19	8159	Open	4-30
	W-A19 PSS	Seneca	41.080173	-83.018744	PSS	Riverine	RPWWD	25	Category 1	S-A25 (UNT to Honey Creek)	0.10	4491	Open	4-30
29	W-A18	Seneca	41.076525	-83.019877	PEM	Depressional	ISOLATE	37	Modified 2	-	0.01	546	Closed	4-30
30	W-A25	Seneca	41.054823	-83.065006	PFO	Depressional	ISOLATE	52	Category 2	-	0.83	35985	Open	4-33
31	W-A33	Seneca	41.042266	-83.077844	PFO	Depressional	NRPWW	49.5	Category 2	UNT to Honey Creek (outside study area)	0.80	35000	Open	4-37
32	W-B6 PEM	Seneca	41.045810	-83.027315	PEM	Depressional	ISOLATE	37	Modified 2	-	0.09	3872	Open	4-35
	W-B6 PFO	Seneca	41.045866	-83.027695	PFO	Depressional	ISOLATE	37	Modified 2	-	0.03	1403	Open	4-35
33	W-B7	Seneca	41.033522	-83.058914	PEM	Riverine	RPWWD	46	Category 2	S-B6 (UNT to Honey Creek)	0.04	1632	Closed	4-38
	W-B5 PEM1	Seneca	41.033016	-83.060169	PEM	Riverine	RPWWD	46	Category 2	S-B6 (UNT to Honey Creek)	0.03	1485	Closed	4-38
34	W-B5 PEM2	Seneca	41.033555	-83.058283	PEM	Riverine	RPWWD	46	Category 2	S-B6 (UNT to Honey Creek)	0.01	611	Closed	4-38
	W-B5 PFO	Seneca	41.033075	-83.059930	PFO	Riverine	RPWWD	46	Category 2	S-B6 (UNT to Honey Creek)	0.22	9514	Closed	4-38
35	W-B4	Seneca	41.032896	-83.063504	PEM	Depressional	RPWWN	17	Category 1	S-B6 (UNT to Honey Creek)	0.05	2310	Closed	4-37, 4-38
36	W-B2	Seneca	41.033596	-83.078721	PEM	Riverine	RPWWD	37	Modified 2	S-B3 (Honey Creek)	0.14	5892	Open	4-37, 4-38
37	W-A34	Seneca	41.032194	-83.080509	PFO	Riverine	RPWWD	49	Category 2	S-B3 (Honey Creek)	0.47	20394	Open	4-37
38	W-B1 PEM	Seneca	41.030759	-83.080429	PEM	Riverine	RPWWD	45	Category 2	S-B3 (Honey Creek)	0.12	5428	Open	4-37, 4-38, 4-45
	W-B1 PFOa	Seneca	41.030787	-83.080914	PFO	Riverine	RPWWD	45	Category 2	S-B3 (Honey Creek)	1.01	43825	Open	4-37, 4-38, 4-45
	W-B1 PFOb	Seneca	41.031301	-83.080186	PFO	Riverine	RPWWD	45	Category 2	S-B3 (Honey Creek)	0.05	2049	Open	4-37, 4-38, 4-45

**Table 1.
Identified Wetlands**

Wetland Number	Wetland ID	County	Latitude ¹	Longitude ¹	Cowardin Class ²	HGM ³	Water Type ⁴	ORAM Score ⁵	ORAM Category ⁵	Associated Waterbodies	Size (Acres) ⁶	Size (square feet) ⁵	Open/Closed Boundary	Figure(s)
39	W-A28	Seneca	41.044371	-83.112750	PEM	Riverine	RPWWD	21	Category 1	S-A32 (UNT to Honey Creek)	1.03	44850	Closed	4-47, 4-48
40	W-A29 PEM	Seneca	41.050259	-83.104481	PEM	Riverine	RPWWD	21	Category 1	S-A32 (UNT to Honey Creek)	0.42	18137	Closed	4-48
	W-A29 PSS	Seneca	41.049358	-83.105620	PSS	Riverine	RPWWD	21	Category 1	S-A32 (UNT to Honey Creek)	0.08	3521	Closed	4-48
41	W-A37	Seneca	41.044261	-83.113037	PEM	Riverine	RPWWD	21	Category 1	S-A32 (UNT to Honey Creek)	0.60	26289	Open	4-48
42	W-A27	Seneca	41.040695	-83.125575	PEM	Riverine	RPWWD	22	Category 1	S-A31 (UNT to Honey Creek)	0.04	1954	Open	4-48, 4-49
43	W-A31	Seneca	41.036866	-83.138714	PEM	Riverine	RPWWD	21	Category 1	S-A34 (UNT to Honey Creek)	0.02	679	Open	4-48, 4-49
44	W-A32	Seneca	41.036735	-83.138688	PEM	Riverine	RPWWD	21	Category 1	S-A34 (UNT to Honey Creek)	0.03	1111	Open	4-48, 4-49

Notes:

- 1 - In decimal degrees. Coordinates show wetland test pit locations.
- 2 - PEM = Palustrine Emergent
- 3 - PSS = Palustrine Scrub-Shrub
- 4 - PFO = Palustrine Forested
- 5 - HGM = Hydrogeomorphic
- 6 - RPWWD = Wetlands directly abutting Relatively Permanent Waters (RPWs) that flow directly or indirectly into Traditional Navigable Waterways (TNWs)
- 7 - RPWWN = Wetlands adjacent but not directly abutting RPWs that flow directly or indirectly into TNWs
- 8 - NRPWW = Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- 9 - Mack, John J. 2001. Ohio Rapid Assessment Method for Wetlands, Manual for Using Version 5.0. Ohio EPA Technical Bulletin Wetland/2001-1-1. Ohio Environmental Protection Agency, Division of Surface Water, 401 Wetland Ecology Unit, Columbus, Ohio.
- 10 - Size of wetlands with open boundaries may be larger than shown in this table. See Section 3.1 for more information.

Table 2.
Identified Streams

Stream Reach Number	Stream ID	NHD Stream Name ¹	County	Latitude ²	Longitude ²	Flow Regime	Water Type ³	Cowardin Class ⁴	HHE/ICHEI Score ⁵	HHE Class ⁶ / OHEI Narrative Rating ⁷	Bank Full Width (meters)	Bank Full Width (feet)	Flow Direction	Figure(s)
1	S-A1	UNT to Honey Creek	Seneca	41.058558	-82.825845	Intermittent	RPW	R4S55	24.0	Very Poor	2.1	7.0	SE	4-1
2	S-A2	UNT to Mud Run	Seneca	41.073509	-82.843169	Intermittent	RPW	R4S55	26.0	Very Poor	2.1	7.0	N	4-3
3	S-A3	UNT to Honey Creek	Seneca	41.066184	-82.857122	Intermittent	RPW	R4S55	24.0	Very Poor	1.8	6.0	E	4-4
4	S-A7	UNT to Honey Creek	Seneca	41.082347	-82.897230	Intermittent	RPW	R4S55	52.0	Modified Class II	1.5	5.0	S	4-6, 4-7
5	S-A5	UNT to Honey Creek	Seneca	41.085174	-82.906910	Intermittent	RPW	R4S55	42.0	Modified Class II	1.5	5.0	S	4-7, 4-8
6	S-A6	UNT to Honey Creek	Seneca	41.080397	-82.926824	Intermittent	RPW	R4S55	42.0	Modified Class II	1.5	5.0	S	4-8
7	S-A4	UNT to Mud Run	Seneca	41.109459	-82.858402	Intermittent	RPW	R4S55	43.0	Modified Class II	1.5	5.0	E	4-13
8	S-B13	UNT to Mud Run	Seneca	41.101624	-82.881949	Perennial	RPW	R3UB3	33.0	Poor	1.8	6.0	NW	4-13, 4-14
9	S-B12	UNT to Mud Run	Seneca	41.103564	-82.87764	Ephemeral	NRPW	R6	23.0	Class I	0.9	3.0	N	4-14
10	S-B10	UNT to Mud Run	Seneca	41.105025	-82.875868	Perennial	RPW	R3UB3	33.0	Poor	2.1	7.0	E	4-14
11	S-B11	UNT to Mud Run	Seneca	41.104828	-82.874957	Intermittent	RPW	R4S55	18.0	Modified Class I	1.0	3.0	N	4-14
12	S-A8	UNT to Rock Creek	Seneca	41.126066	-82.820740	Perennial	RPW	R3UB2	65.0	Modified Class II	2.1	7.0	W	4-16, 4-17
13	S-A10	UNT to Rock Creek	Seneca	41.108846	-82.856117	Intermittent	RPW	R4S55	52.0	Modified Class II	1.5	5.0	N	4-18
14	S-A13	UNT to Rock Creek	Seneca	41.114001	-82.863155	Perennial	RPW	R3UB3	47.0	Modified Class II	1.2	4.0	W	4-20, 4-21
15	S-A15	UNT to Rock Creek	Seneca	41.108341	-82.870649	Intermittent	RPW	R4S55	43.0	Modified Class II	1.2	4.0	NW	4-21
16	S-A14	UNT to Rock Creek	Seneca	41.103354	-82.874147	Intermittent	RPW	R4S55	49.0	Modified Class II	2.1	7.0	N	4-21, 4-22
17	S-A17	UNT to Honey Creek	Seneca	41.089722	-82.877818	Ephemeral	NRPW	R6	25.0	Modified Class I	1.5	5.0	SW	4-23
18	S-A39	UNT to Rock Creek	Seneca	41.088508	-82.881437	Intermittent	RPW	R4S55	23.0	Modified Class I	0.6	2.0	SE	4-23, 4-26
19	S-A18	UNT to Honey Creek	Seneca	41.085484	-82.886272	Intermittent	RPW	R4S55	18.0	Modified Class II	1.8	6.0	SW	4-25
20	S-A19	UNT to Honey Creek	Seneca	41.085744	-82.888575	Ephemeral	NRPW	R6	22.0	Modified Class I	1.2	4.0	SE	4-25
21	S-A21	East Branch Rock Creek	Seneca	41.096073	-82.891892	Intermittent	RPW	R4S55	43.0	Modified Class II	1.8	6.0	N	4-26
22	S-A20	UNT to Honey Creek	Seneca	41.08517	-82.893675	Ephemeral	NRPW	R6	27.0	Modified Class I	1.8	6.0	NW	4-26
23	S-A22	UNT to East Branch Rock Creek	Seneca	41.092320	-83.005794	Ephemeral	NRPW	R6	25.0	Modified Class I	1.2	4.0	NW	4-27
24	S-A23	UNT to East Branch Rock Creek	Seneca	41.092089	-83.011399	Ephemeral	NRPW	R6	18.0	Modified Class I	0.6	2.0	NW	4-27
25	S-A24	UNT to East Branch Rock Creek	Seneca	41.087440	-83.016747	Ephemeral	NRPW	R6	17.0	Modified Class I	0.6	2.0	NW	4-27
26	S-A25	UNT to Honey Creek	Seneca	41.077869	-83.022462	Intermittent	RPW	R4S55	33.0	Modified Class II	0.9	3.0	SW	4-30
27	S-A26	UNT to East Branch Rock Creek	Seneca	41.085426	-83.02846	Ephemeral	NRPW	R6	22.0	Modified Class I	0.6	2.0	NW	4-29
28	S-A28	UNT to Honey Creek	Seneca	41.077468	-83.024637	Ephemeral	NRPW	R6	19.0	Modified Class I	0.3	1.0	S	4-30
29	S-A29	UNT to Honey Creek	Seneca	41.067523	-83.038303	Intermittent	RPW	R4S55	51.0	Modified Class II	2.1	7.0	SW	4-31
30	S-A30	UNT to East Branch Rock Creek	Seneca	41.064897	-83.044898	Intermittent	RPW	R4S55	23.0	Very Poor	2.4	8.0	S	4-31
31	S-B8	Honey Creek	Seneca	41.048510	-83.057461	Perennial	RPW	R3UB1	61.0	Good	9.1	30.0	SW	4-33, 4-36
32	S-B9	UNT to Honey Creek	Seneca	41.048445	-83.068505	Perennial	RPW	R3UB1	52.0	Modified Class II	1.5	5.0	SW	4-35
33	S-B6	UNT to Honey Creek	Seneca	41.031102	-83.083423	Perennial	RPW	R3UB1	58.0	Good	6.1	20.0	W	4-37, 4-38
34	S-A35	UNT to Honey Creek	Seneca	41.038532	-83.078948	Intermittent	RPW	R4S53	35.0	Modified Class II	1.5	5.0	SE	4-37
35	S-A36	UNT to Honey Creek	Seneca	41.038468	-83.078222	Ephemeral	NRPW	R6	19.0	Modified Class I	0.3	1.0	SE	4-37
36	S-A37	UNT to Honey Creek	Seneca	41.035709	-83.079072	Ephemeral	NRPW	R6	19.0	Modified Class I	0.6	2.0	SE	4-37
37	S-B3	Honey Creek	Seneca	41.033560	-83.079193	Perennial	RPW	R3UB1	62.0	Good	24.4	80.0	SW	4-37, 4-45
38	S-B7	UNT to Honey Creek	Seneca	41.033328	-83.05812	Ephemeral	NRPW	R6	22.0	Modified Class I	1.5	5.0	NW	4-38
39	S-B2	UNT to Honey Creek	Seneca	41.016957	-83.081299	Perennial	RPW	R3UB1	46.0	Fair	3.0	10.0	NW	4-39, 4-44, 4-45
40	S-B4	UNT to Honey Creek	Seneca	41.004669	-83.084119	Perennial	RPW	R3UB3	53.0	Modified Class II	1.8	6.0	W	4-43
41	S-B5	UNT to Honey Creek	Seneca	41.002734	-83.077861	Intermittent	RPW	R4S55	43.0	Modified Class II	1.0	3.0	NW	4-43
42	S-B1	UNT to Honey Creek	Seneca	41.012266	-83.085242	Intermittent	RPW	R4S53	39.0	Modified Class II	3.7	12.0	N	4-44
43	S-A32	UNT to Rock Creek	Seneca	41.048726	-83.106755	Intermittent	RPW	R4S55	24.0	Very Poor	1.0	3.0	SW	4-47, 4-48
44	S-A31	UNT to Rock Creek	Seneca	41.048006	-83.106615	Intermittent	RPW	R4S55	63.0	Modified Class II	2.1	7.0	W	4-48
45	S-A33	UNT to Rock Creek	Seneca	41.040011	-83.125889	Intermittent	RPW	R4S55	23.0	Very Poor	4.6	15.0	N	4-48, 4-49
46	S-A34	UNT to Honey Creek	Seneca	41.036761	-83.138892	Intermittent	RPW	R4S55	24.0	Very Poor	1.2	4.0	N	4-49

Notes:
1 - For identified streams without a NHD (National Hydrography Dataset) name, the identified stream was given the name, "Unnamed Tributary (UNT)", of the first named receiving waterbody.
2 - In decimal degrees.
3 - RPW = Relatively Permanent Waters
4 - NRPW = Non-Relatively Permanent Waters
5 - TNW = Traditional Navigable Waters
6 - See Cowardin et al., 1979.
7 - Ohio Environmental Agency for Ohio's Primary Headwater Habitat Streams (HHEI), Version 3.0, Ohio EPA, Division of Surface Water, Columbus, Ohio.
8 - Ohio Environmental Agency for Ohio's Primary Headwater Habitat Streams (OHEI), Version 3.0, Ohio EPA, Division of Surface Water, Columbus, Ohio.
9 - Ohio EPA, 2005, Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI), Ohio EPA Technical Bulletin EAS/2005/046-1, Ohio EPA, Division of Surface Water, Groveport, Ohio.

**Table 3.
Seneca County Hydric Soil List
Seneca County, OH**

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
AdA	Adrian muck, drained, 0 to 1 percent slopes	Adrian, drained	95	depressions
AdA	Adrian muck, drained, 0 to 1 percent slopes	Mermill, drained	3	depressions
AdA	Adrian muck, drained, 0 to 1 percent slopes	Granby, drained	2	depressions
BgA	Bennington silt loam, 0 to 2 percent slopes	Condit	5	drainageways
BgA	Bennington silt loam, 0 to 2 percent slopes	Pewamo, low carbonate till	3	depressions
BgB	Bennington silt loam, 2 to 6 percent slopes	Condit	3	drainageways
BgB	Bennington silt loam, 2 to 6 percent slopes	Pewamo, low carbonate till	3	depressions
BhA	Bixler loamy fine sand, 0 to 2 percent slopes	Colwood	4	depressions
Ble1A1	Blount silt loam, end moraine, 0 to 2 percent slopes	Pewamo, end moraine	6	end moraines
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	Pewamo, end moraine	6	end moraines
Blg1A1	Blount silt loam, ground moraine, 0 to 2 percent slopes	Pewamo, ground moraine	9	ground moraines
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	Pewamo, ground moraine	9	ground moraines
Bp	Bono silty clay, loamy substratum	Bono	90	flats
Bp	Bono silty clay, loamy substratum	Pandora	5	drainageways
Bp	Bono silty clay, loamy substratum	Lenawee	5	depressions
BrA	Blount-Houcktown complex, 0 to 3 percent slopes	Pewamo	5	depressions
BsA	Blount-Urban land complex, 0 to 2 percent slopes	Typic Endoaquents, till substratum	6	till plains
BtA	Bogart loam, 0 to 2 percent slopes	Olmsted	5	depressions
BtA	Bogart loam, 0 to 2 percent slopes	Colwood	5	depressions
Ca	Carlisle muck, Central Ohio clayey till plain, 0 to 2 percent slopes	Carlisle	85	depressions
Ca	Carlisle muck, Central Ohio clayey till plain, 0 to 2 percent slopes	Linwood	9	depressions
Ca	Carlisle muck, Central Ohio clayey till plain, 0 to 2 percent slopes	Pewamo	6	depressions
CdB2	Cardington silt loam, 2 to 6 percent slopes, moderately eroded	Pewamo	4	drainageways
CdB2	Cardington silt loam, 2 to 6 percent slopes, moderately eroded	Marengo	4	drainageways

**Table 3.
Seneca County Hydric Soil List
Seneca County, OH**

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
CdC2	Cardington silt loam, 6 to 12 percent slopes, moderately eroded	Pewamo	4	drainageways
CdC2	Cardington silt loam, 6 to 12 percent slopes, moderately eroded	Marengo	3	drainageways
CnA	Channahon silt loam, 0 to 2 percent slopes	Millsdale	4	flats
Co	Colwood silt loam	Colwood	85	lake plains
Co	Colwood silt loam	Millgrove	3	depressions
Co	Colwood silt loam	Millsdale	3	depressions
Co	Colwood silt loam	Hoytville	3	flats
Cp	Colwood fine sandy loam	Colwood	90	flats
Cp	Colwood fine sandy loam	Lenawee	2	flats
CvA	Cyghet loam, 0 to 2 percent slopes	Alvada	10	depressions
DeA	Del Rey silt loam, 0 to 2 percent slopes	Bono	2	depressions
DeA	Del Rey silt loam, 0 to 2 percent slopes	Milford	2	depressions
DmA	Digby loam, 1 to 4 percent slopes	Millgrove	5	depressions
DnA	Digby loam, 0 to 3 percent slopes	Mermill	2	swales
DnA	Digby loam, 0 to 3 percent slopes	Colwood	2	swales
DnA	Digby loam, 0 to 3 percent slopes	Millgrove	2	swales
DrB	Dunbridge sandy loam, 1 to 4 percent slopes	Millsdale	2	depressions
FbA	Fitchville silt loam, 0 to 2 percent slopes	Luray	5	depressions
FbA	Fitchville silt loam, 0 to 2 percent slopes	Colwood	5	depressions
FbA	Fitchville silt loam, 0 to 2 percent slopes	Milford	4	depressions
FcA	Fitchville silt loam, 1 to 4 percent slopes	Colwood	2	depressions
Ge	Genesee silt loam, occasionally flooded	Sloan	7	abandoned channels
GfA	Gilford mucky loam, 0 to 1 percent slopes	Gilford	90	outwash plains
GfA	Gilford mucky loam, 0 to 1 percent slopes	More rock fragments in the substratum	0	outwash plains
GfA	Gilford mucky loam, 0 to 1 percent slopes	Dark colored surface layer less than 10 inches thick	0	outwash plains
GfA	Gilford mucky loam, 0 to 1 percent slopes	Thicker solum with more clay and less sand	0	outwash plains

**Table 3.
Seneca County Hydric Soil List
Seneca County, OH**

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
GfA	Gilford mucky loam, 0 to 1 percent slopes	Fine sandy loam surface layer	0	outwash plains
GhB	Glenford silt loam, 2 to 6 percent slopes	Colwood	4	depressions
GwA	Glynwood silt loam, 0 to 2 percent slopes	Pewamo	3	drainageways
GwA	Glynwood silt loam, 0 to 2 percent slopes	Pandora	3	drainageways
Gwe1B1	Glynwood silt loam, end moraine, 2 to 6 percent slopes	Pewamo	6	end moraines
Gwe5B2	Glynwood clay loam, end moraine, 2 to 6 percent slopes, eroded	Pewamo	6	end moraines
Gwg1B1	Glynwood silt loam, ground moraine, 2 to 6 percent slopes	Pewamo	6	ground moraines
Gwg5B2	Glynwood clay loam, ground moraine, 2 to 6 percent slopes, eroded	Pewamo	6	ground moraines
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	Pewamo	7	till plains
HbB	Haskins sandy loam, 1 to 4 percent slopes	Hoytville	3	drainageways
HbB	Haskins sandy loam, 1 to 4 percent slopes	Mermill	2	drainageways
HcA	Hoytville silty clay loam, 0 to 1 percent slopes	Hoytville	91	flats
HkA	Haskins loam, 0 to 2 percent slopes	Pandora	5	drainageways
HkB	Haskins loam, 2 to 6 percent slopes	Pandora	5	drainageways
HnB	Houcktown loam, 2 to 6 percent slopes	Pewamo	6	depressions
HnB	Houcktown loam, 2 to 6 percent slopes	Mermill	3	depressions
HoA	Hoytville clay loam, 0 to 1 percent slopes	Hoytville	91	flats
HyA	Hoytville-Urban land complex, 0 to 1 percent slopes	Hoytville	60	flats
JtA	Jimtown loam, 0 to 3 percent slopes	Colwood	5	depressions
KbA	Kibbie fine sandy loam, 0 to 2 percent slopes	Hoytville	5	depressions
KcA	Kibbie-Blount complex, 0 to 2 percent slopes	Pewamo	5	drainageways
KcA	Kibbie-Blount complex, 0 to 2 percent slopes	Pandora	4	drainageways
KcA	Kibbie-Blount complex, 0 to 2 percent slopes	Colwood	4	drainageways
KcA	Kibbie-Blount complex, 0 to 2 percent slopes	Milford	4	drainageways
Le	Lenawee silty clay loam	Lenawee	95	depressions
Le	Lenawee silty clay loam	Pandora	3	drainageways
Le	Lenawee silty clay loam	Bono	2	drainageways

**Table 3.
Seneca County Hydric Soil List
Seneca County, OH**

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
Lw	Linwood muck	Linwood	90	depressions
Lw	Linwood muck	Colwood	5	depressions
Lw	Linwood muck	Millgrove	5	depressions
LzB	Lykens-Milton silt loams, 2 to 6 percent slopes	Pewamo	5	till plains
MbA	Mermill loam, 0 to 1 percent slopes	Mermill	90	flats
MbA	Mermill loam, 0 to 1 percent slopes	Till at 40 to 60 inches	0	flats
MbA	Mermill loam, 0 to 1 percent slopes	More clay and less sand in the subsoil	0	flats
MbA	Mermill loam, 0 to 1 percent slopes	Surface layer more than 10 inches thick	0	flats
MbA	Mermill loam, 0 to 1 percent slopes	Clay loam or silty clay loam surface layer	0	flats
MdA	Mermill-Urban land complex, 0 to 1 percent slopes	Mermill	60	flats
MdA	Mermill-Urban land complex, 0 to 1 percent slopes	Sandy clay loam or clay loam surface layer	0	flats
MdA	Mermill-Urban land complex, 0 to 1 percent slopes	More clay in the subsoil	0	flats
MdA	Mermill-Urban land complex, 0 to 1 percent slopes	Surface layer more than 10 inches thick	0	flats
MdA	Mermill-Urban land complex, 0 to 1 percent slopes	Till at 40 to 60 inches	0	flats
Me	Mermill loam	Mermill	85	flats
Me	Mermill loam	Millgrove	7	depressions
Mf	Millgrove loam	Millgrove	95	depressions
Mg	Millgrove silt loam	Millgrove	85	outwash plains
Mg	Millgrove silt loam	Luray	4	depressions
Mg	Millgrove silt loam	Milford	3	depressions
Mg	Millgrove silt loam	rarely flooded areas	0	flood plains
Mh	Milford silty clay loam	Milford	85	flats
Mh	Milford silty clay loam	Olentangy	3	depressions
MkA	Millsdale silty clay loam, 0 to 1 percent slopes	Millsdale	90	flats
MkA	Millsdale silty clay loam, 0 to 1 percent slopes	Clay loam, silt loam or loam surface layer	0	flats

**Table 3.
Seneca County Hydric Soil List
Seneca County, OH**

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
MkA	Millsdale silty clay loam, 0 to 1 percent slopes	Surface layer more than 10 inches thick	0	flats
MkA	Millsdale silty clay loam, 0 to 1 percent slopes	Bedrock at 40 to 60 inches	0	flats
MkA	Millsdale silty clay loam, 0 to 1 percent slopes	Millgrove	0	lake plains
MkA	Millsdale silty clay loam, 0 to 1 percent slopes	Joliet	0	lake plains
MkA	Millsdale silty clay loam, 0 to 1 percent slopes	Lighter colored surface layer	0	flats
MkA	Millsdale silty clay loam, 0 to 1 percent slopes	Hoytville	0	lake plains
Mm	Millsdale silty clay loam	Millsdale	85	depressions
Mm	Millsdale silty clay loam	Hoytville	5	lake plains
Mm	Millsdale silty clay loam	Lenawee	5	depressions
MoA	Milton variant loam, 0 to 2 percent slopes	Millsdale	5	depressions
MoA	Milton variant loam, 0 to 2 percent slopes	Colwood	5	depressions
MoB	Milton variant loam, 2 to 6 percent slopes	Millsdale	7	depressions
NaA	Nappanee loam, 0 to 2 percent slopes	Hoytville	10	depressions
NoA	Nappanee silt loam, 0 to 3 percent slopes	Hoytville	5	depressions
NpA	Nappanee silt loam, 0 to 2 percent slopes	Hoytville	5	depressions
NpB	Nappanee silt loam, 2 to 6 percent slopes	Hoytville	5	depressions
NrA	Nappanee silty clay loam, 0 to 2 percent slopes	Hoytville	10	depressions
NsA	Nappanee-Urban land complex, 0 to 2 percent slopes	Hoytville	10	depressions
OnC2	Oshtemo fine sandy loam, 6 to 18 percent slopes, eroded	Millgrove	6	depressions
Pa	Pandora silt loam	Pandora	85	depressions
Pa	Pandora silt loam	Pewamo	4	depressions
Pa	Pandora silt loam	Lenawee	3	depressions
Pb	Pandora silty clay loam	Pandora	85	depressions
Pb	Pandora silty clay loam	shale bedrock within 60 inches	5	depressions
Pb	Pandora silty clay loam	small closed depressions	5	depressions
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	Pewamo	85	depressions
Pm	Pewamo silty clay loam, 0 to 1 percent slopes	Minster	6	depressions
PoA	Pewamo-Urban land complex, 0 to 2 percent slopes	Pewamo	50	depressions

**Table 3.
Seneca County Hydric Soil List
Seneca County, OH**

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
PoA	Pewamo-Urban land complex, 0 to 2 percent slopes	Typic Endoaquents, till substratum	9	
RaA	Randolph loam, 0 to 2 percent slopes	Millsdale	2	depressions
RbA	Randolph silt loam, 0 to 2 percent slopes	Millsdale	4	depressions
RnB	Rimer loamy fine sand, 1 to 4 percent slopes	Mermill	3	beach ridges
Rw	Rosburg silt loam, occasionally flooded	Very poorly drained soils	3	flood plains
Sb	Sebring silt loam	Sebring	90	depressions
Sb	Sebring silt loam	Pandora	10	depressions
Sg	Shoals silt loam, 0 to 2 percent slopes, occasionally flooded	Sloan	8	flood plains
Sh	Shoals silt loam, 0 to 2 percent slopes, frequently flooded	Sloan	8	flood plains
SkA	Sloan silt loam, 0 to 1 percent slopes, frequently flooded	Sloan	90	flood plains
SkA	Sloan silt loam, 0 to 1 percent slopes, frequently flooded	Silty clay loam surface layer	0	flood plains
SkA	Sloan silt loam, 0 to 1 percent slopes, frequently flooded	Thinner surface layer	0	flood plains
SkA	Sloan silt loam, 0 to 1 percent slopes, frequently flooded	Loam surface layer	0	flood plains
SkA	Sloan silt loam, 0 to 1 percent slopes, frequently flooded	Bedrock at 48 to 60 inches	0	flood plains
SoB	Spinks fine sand, 2 to 6 percent slopes	Granby	3	beach ridges
TrA	Tiro silt loam, 0 to 2 percent slopes	Pandora	4	depressions
TrA	Tiro silt loam, 0 to 2 percent slopes	Lenawee	3	depressions
TrB	Tiro silt loam, 2 to 6 percent slopes	Pandora	8	depressions
Ua	Udorthents, loamy	poorly drained soils in excavated areas	10	depressions

FIGURES

Figures 1-1 to 1-7: USGS Project Location Maps

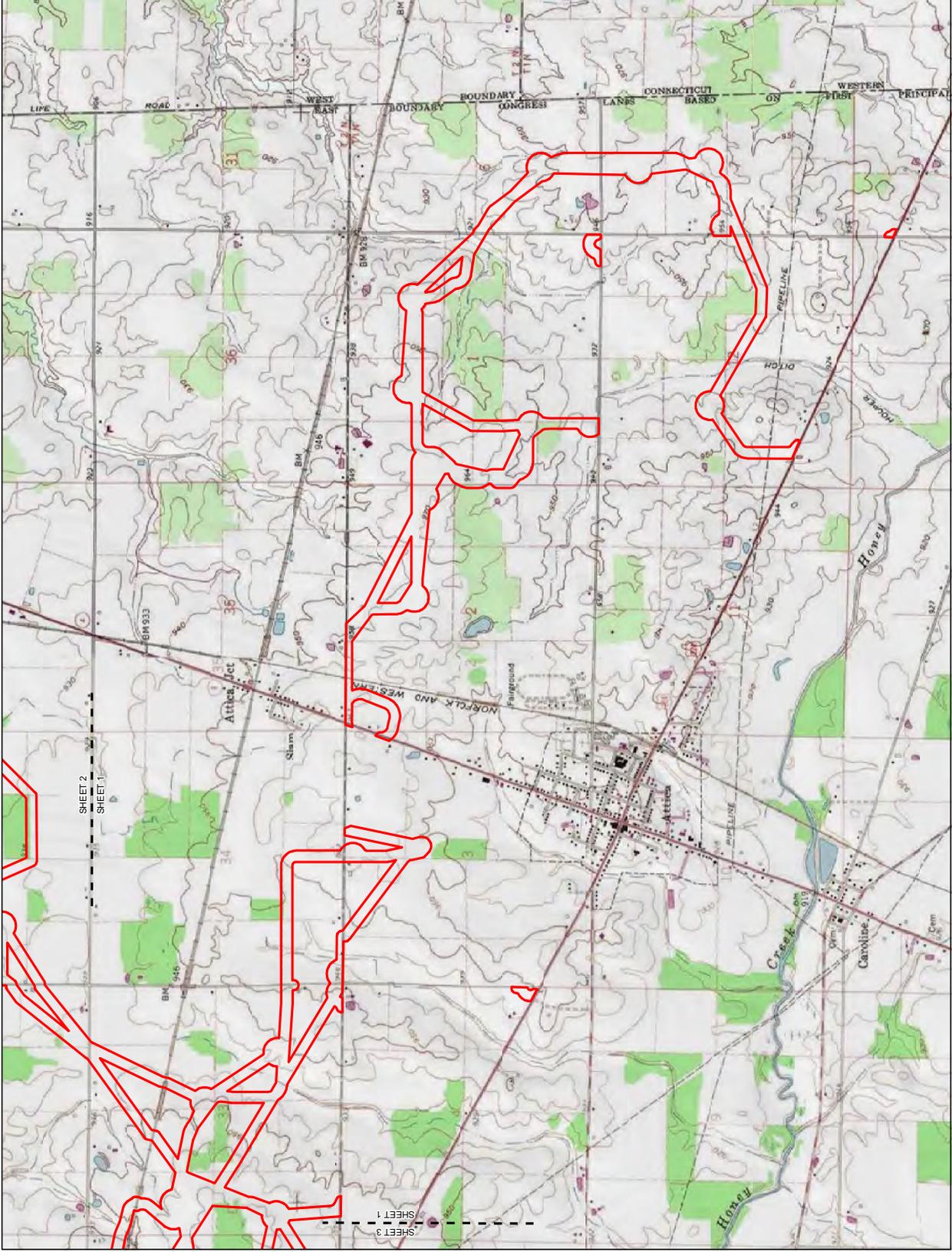
Figures 2-1 to 2-7: NRCS Soils Maps

Figures 3A-1 to 3A-7: NWI Wetlands Maps

Figures 3B-1 to 3A-7: OWI Maps

Figures 4-INDEXT-1 to 4-INDEXT-7: Index Maps

Figures 4-1 to 4-49: Aquatic Resource Location Maps



Legend
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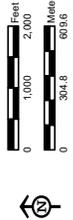
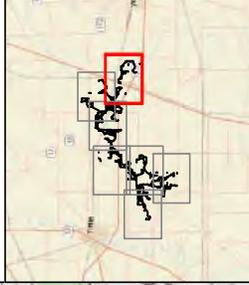
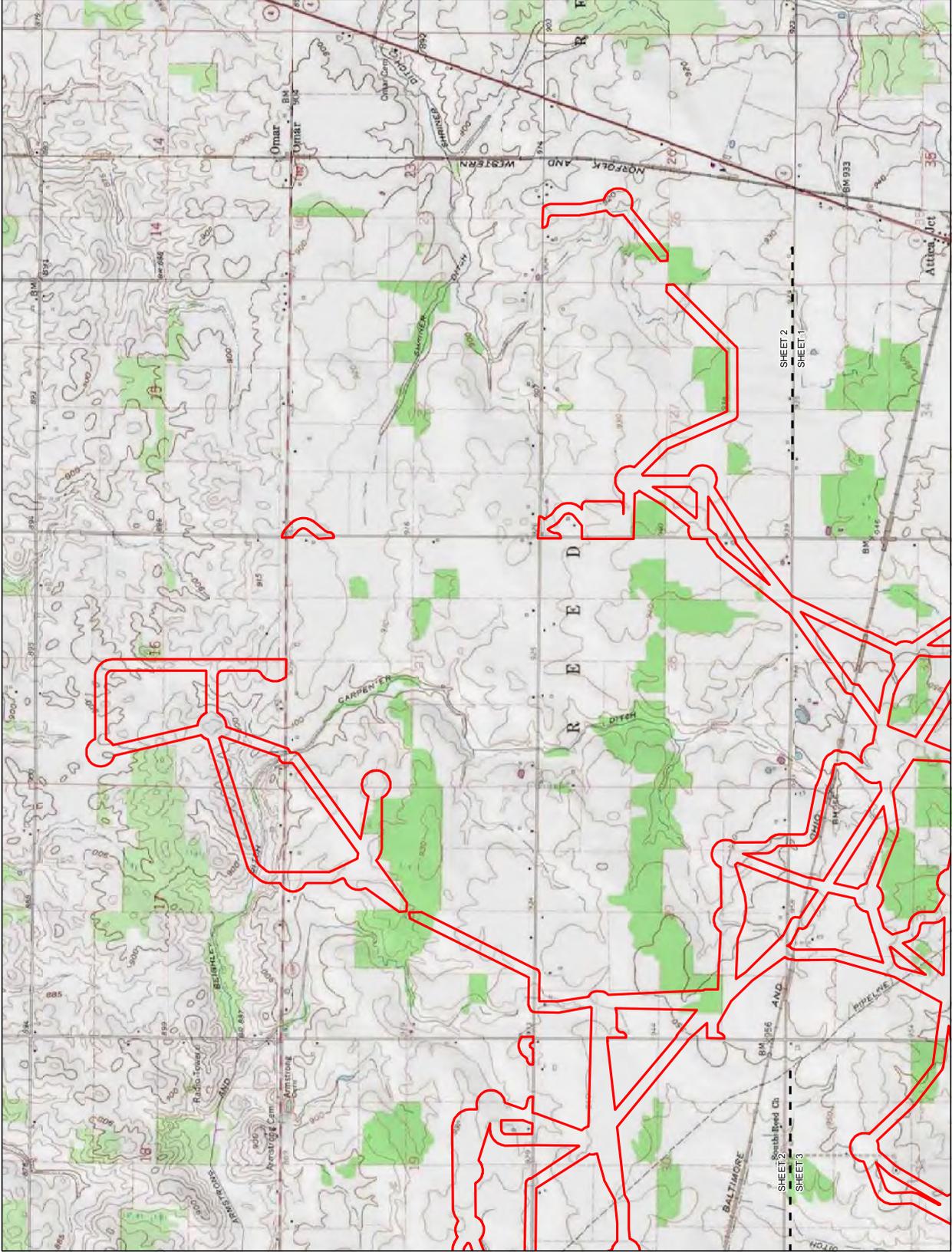


FIGURE 1-1
USGS PROJECT LOCATION MAP
SENECA WIND PROJECT
 SENECA WIND LLC
 SENECA COUNTY, OHIO



Notes:
 1) Geographic map provided by ESRI, ArcGIS Online
 USA Topo Maps map service (© 2013 National
 Geographic Society, i-cubed).
 2) Characteristics displayed are:
 Atto and Contour



Legend
 Survey Corridor

Sheet Identifier

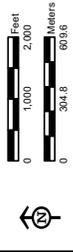
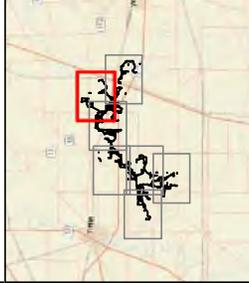
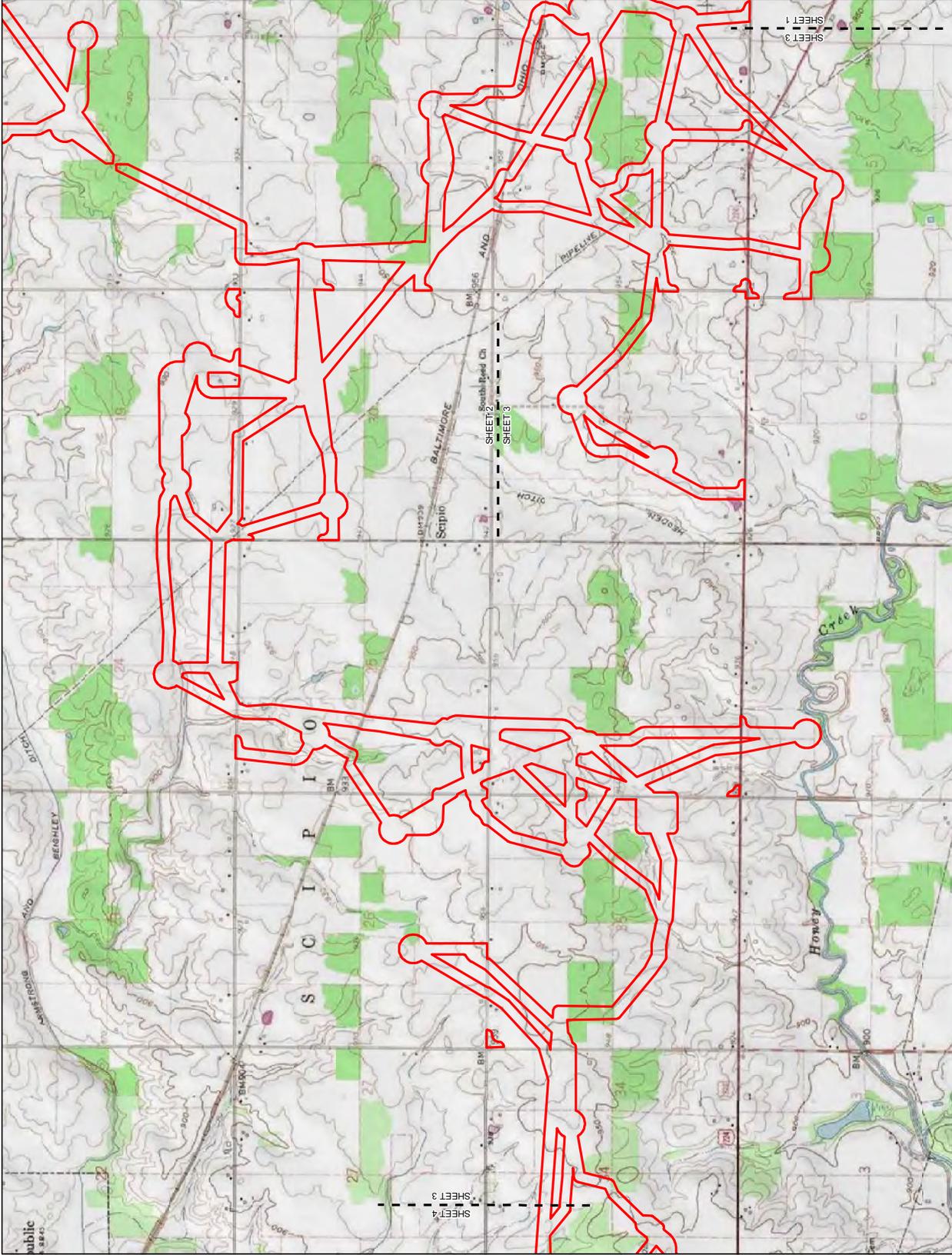


FIGURE 1-2
USGS PROJECT LOCATION MAP
SENECA WIND PROJECT
 SENECA WIND LLC
 SENECA COUNTY, OHIO



Notes:
 1) Topographic map provided by ESRI, ArcGIS Online
 USA Topo Maps map service (© 2013 National
 Geographic Society, i-cubed).
 2) Coordinates displayed are:
 Atlas, Contour, Feet, and Flat Rock



Legend
 Survey Corridor

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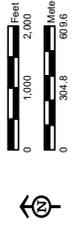
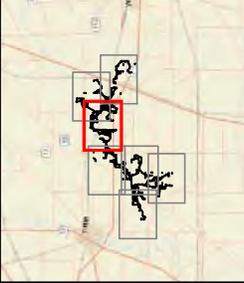
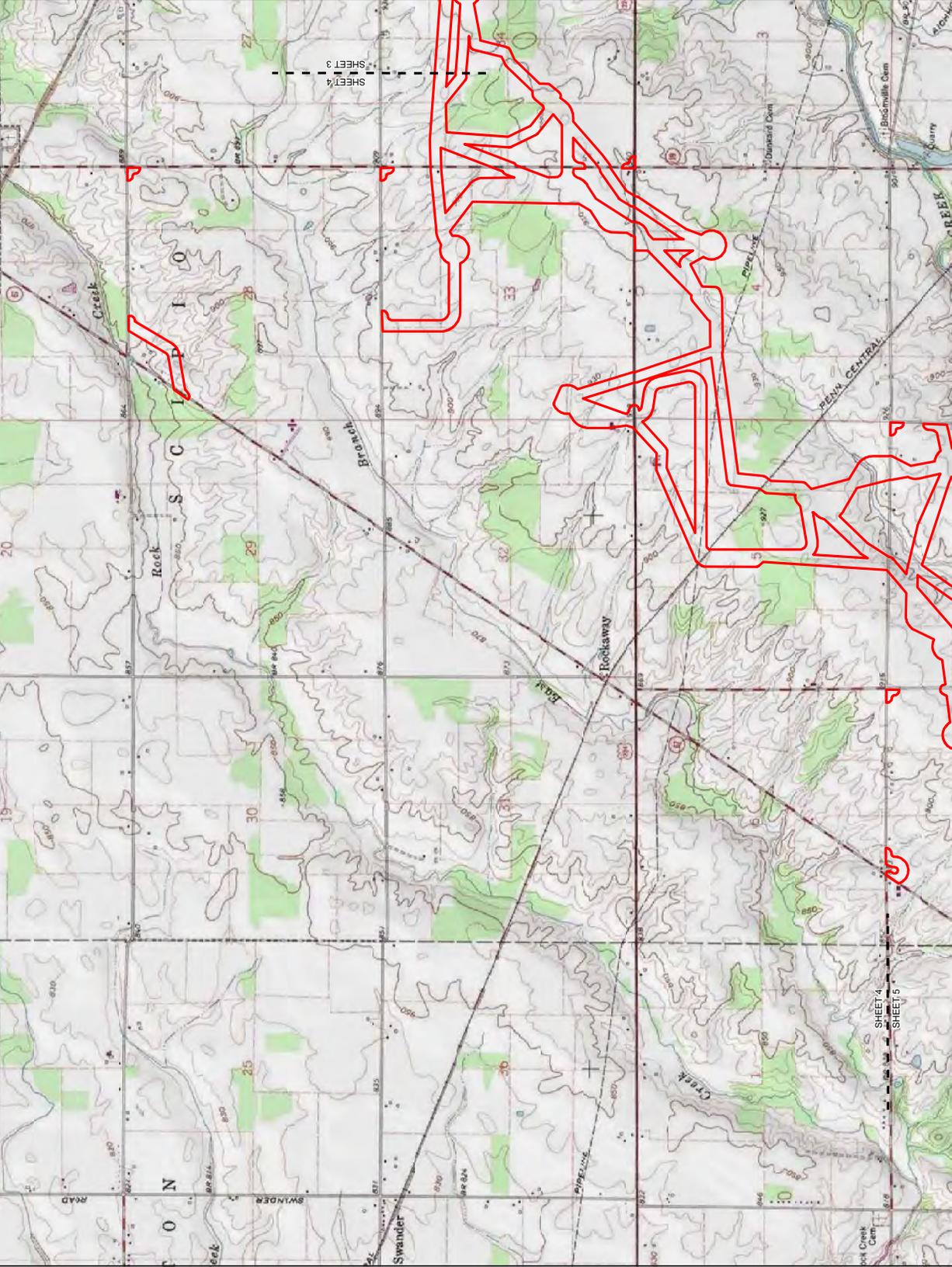


FIGURE 1-3
USGS PROJECT LOCATION MAP
SENECA WIND PROJECT
 SENECA WIND LLC
 SENECA COUNTY, OHIO



Note: Geographic map provided by ESRI, ArcGIS Online
 USA Topo Maps map service (© 2013 National
 Geographic Society, i-cubed).
 2) Coordinates displayed are:
 Atto and Boomtime



Legend
 Survey Corridor

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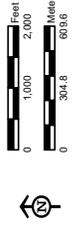
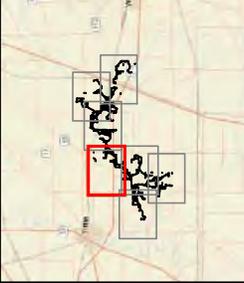
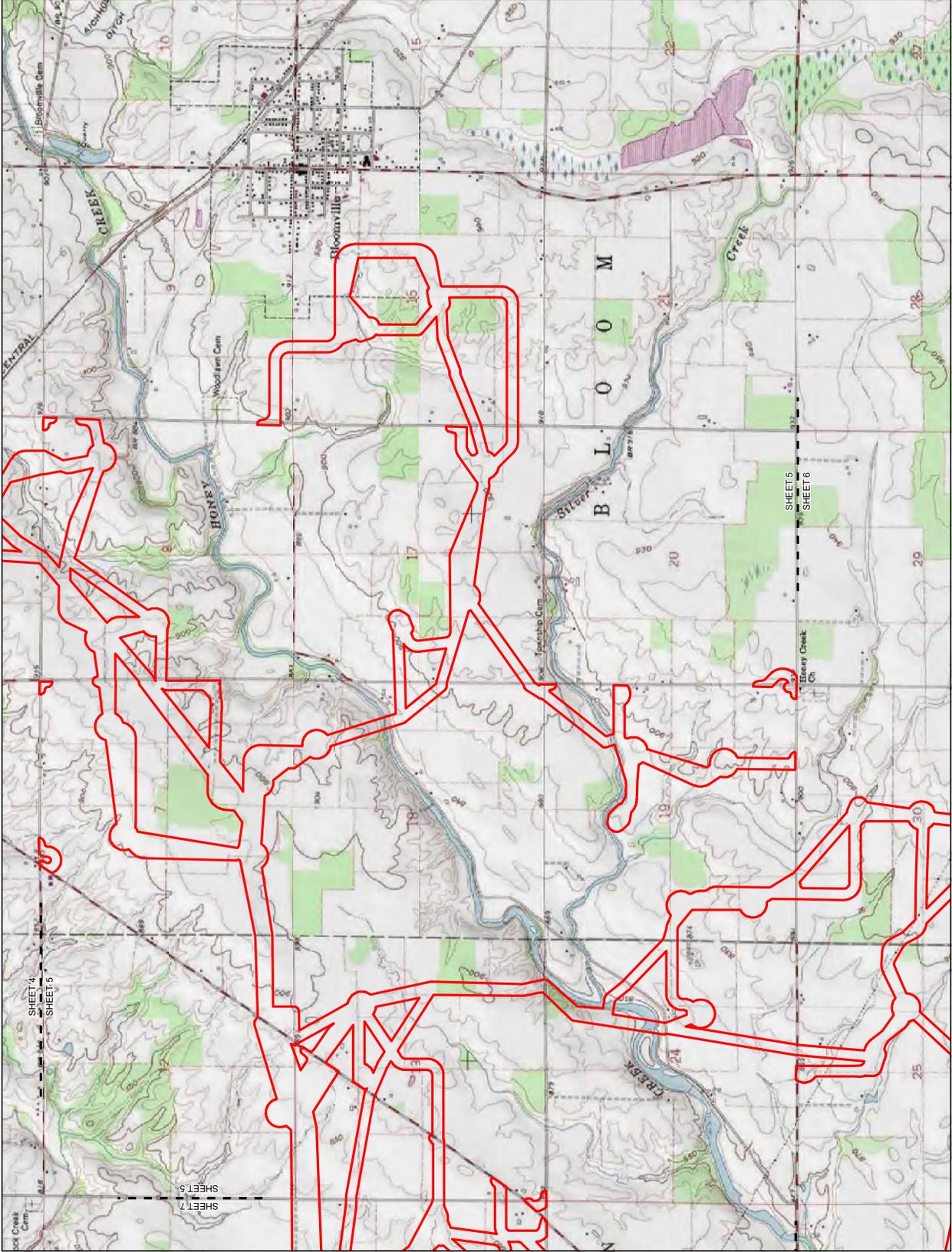


FIGURE 1-4
USGS PROJECT LOCATION MAP
SENECA WIND PROJECT
 SENECA WIND LLC
 SENECA COUNTY, OHIO



Notes:
 1. Geographic map provided by ESRI, ArcGIS Online
 2. USA Topo Maps map service © 2013 National
 Geographic Society, Inc. (reproduced)
 3. Coordinates displayed are:
 UTM Zone 18N
 Datum: NAD 83



Legend
[Red outline] Survey Corridor

Sheet Identifier

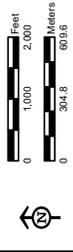
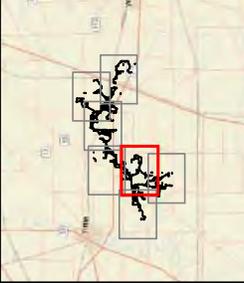
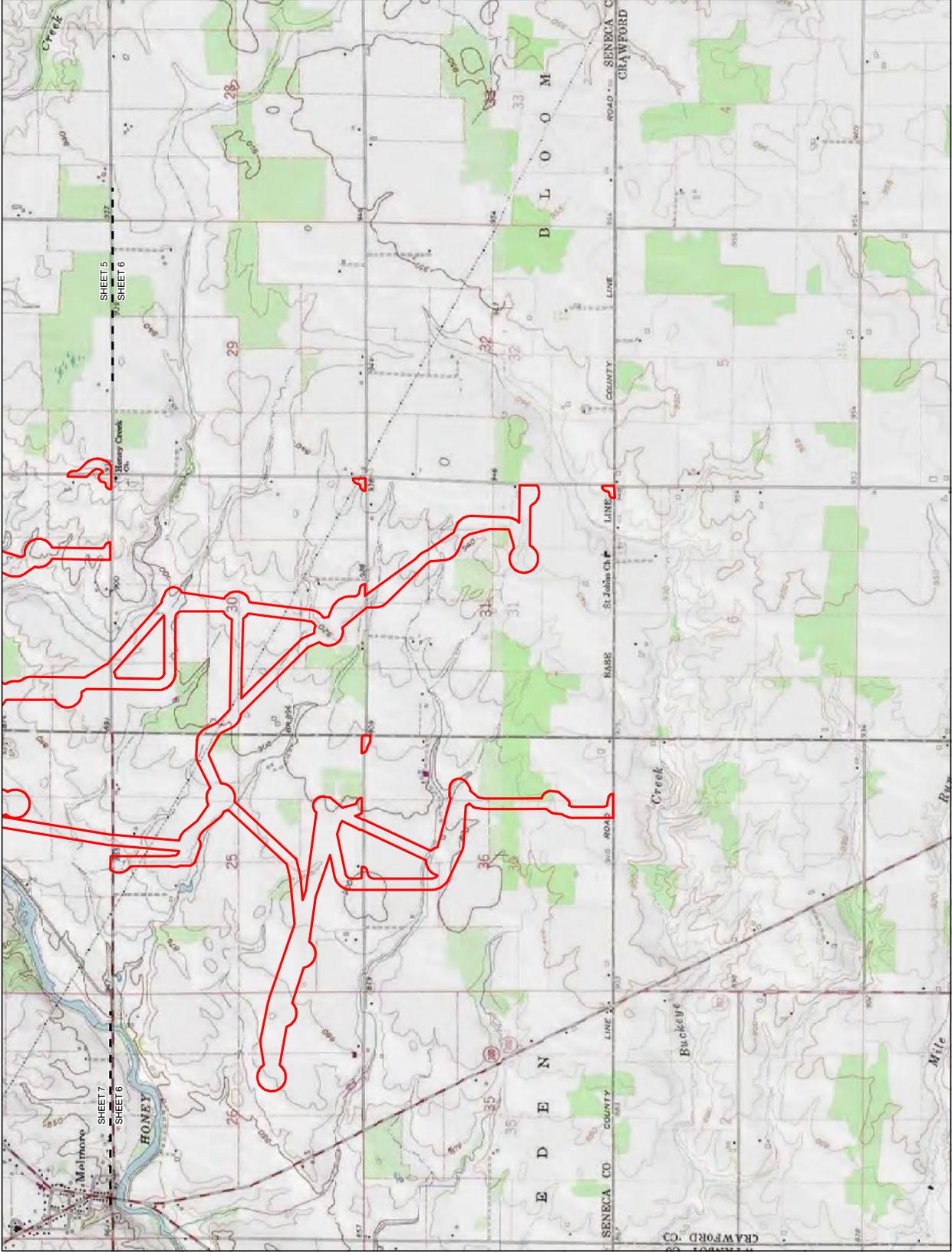


FIGURE 1-5
USGS PROJECT LOCATION MAP
SENECA WIND PROJECT
SENECA WIND LLC
SENECA COUNTY, OHIO



Notes:
1) Geographic map provided by ESRI, ArcGIS Online
USA Topo Maps map service (© 2013 National
Geographic Society, i-cubed).
2) Coordinates displayed are:
Datum: NAD83



Legend
 Survey Corridor

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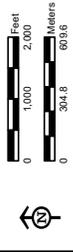
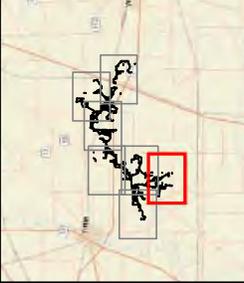
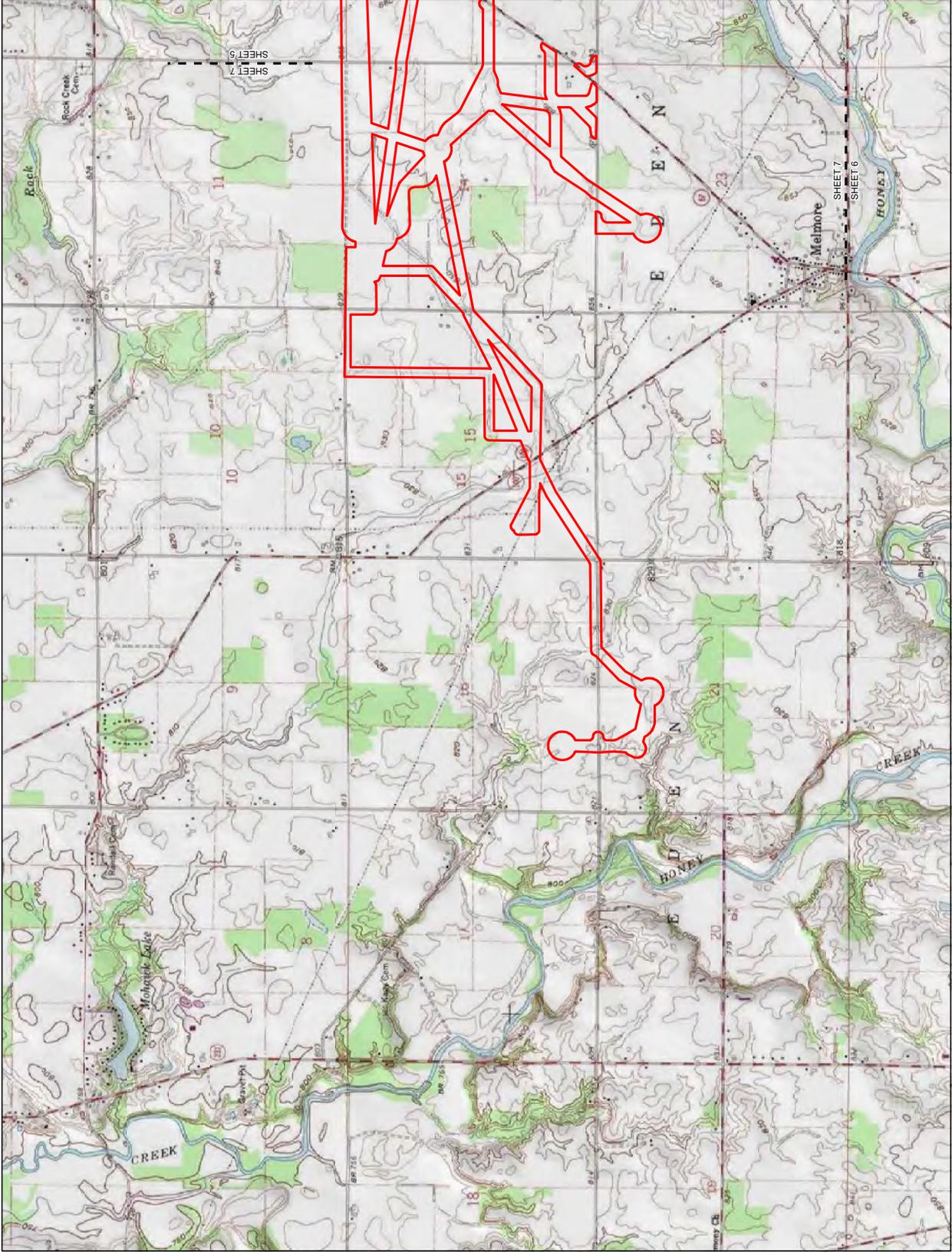


FIGURE 1-6
USGS PROJECT LOCATION MAP
SENeca WIND PROJECT
 SENeca WIND LLC
 SENeca COUNTY, OHIO



Notes:
 1) Geographic map provided by ESRI's ArcGIS Online
 USA Topo Maps map service (© 2013 National
 Geographic Society, i-cubed).
 2) Coordinates displayed are:
 StatePlane and UTM's



Legend
 Survey Corridor

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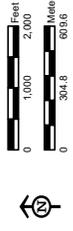
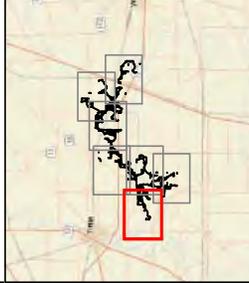
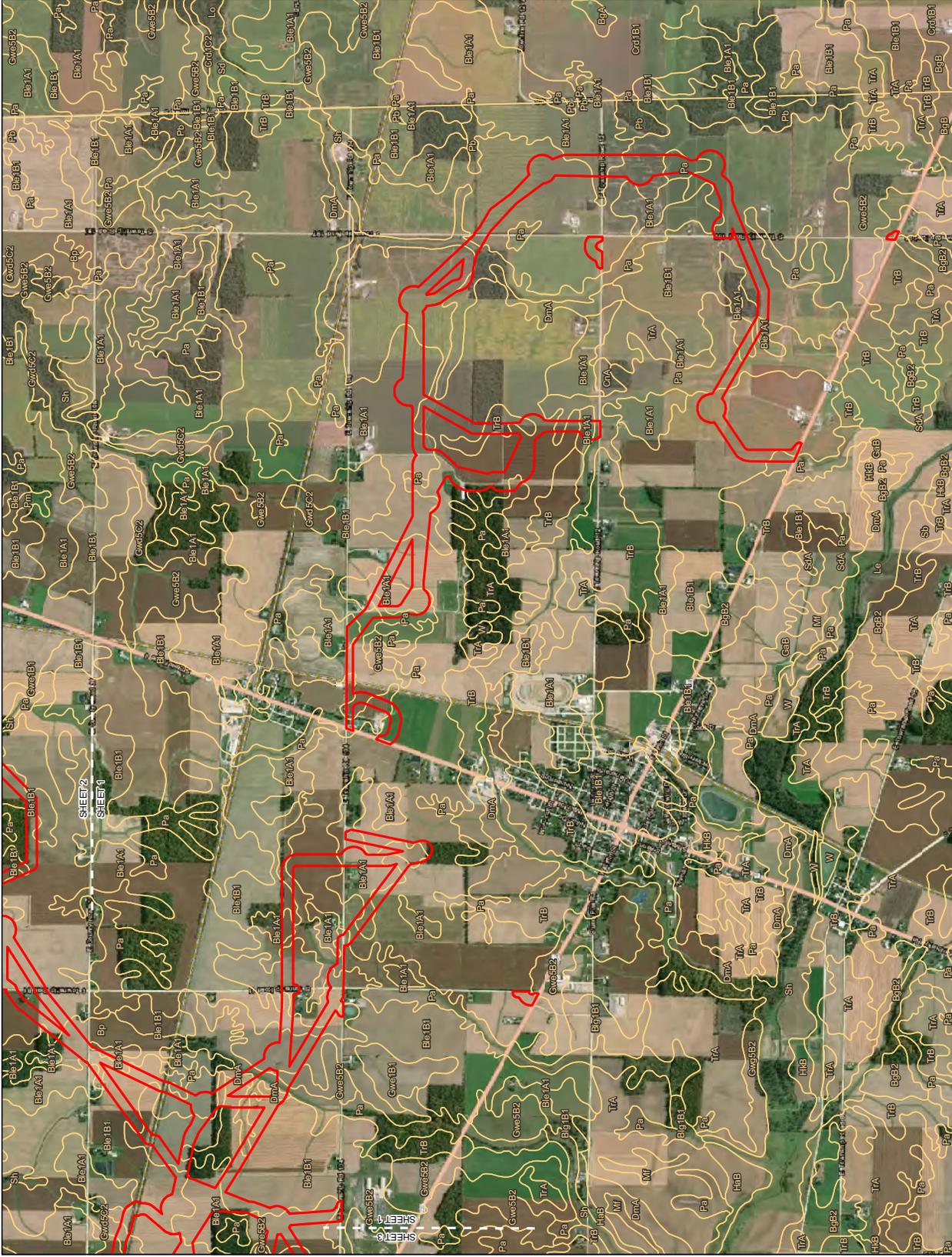


FIGURE 1-7
USGS PROJECT LOCATION MAP
SENECA WIND PROJECT
SENECA WIND LLC
SENECA COUNTY, OHIO



Notes:
 1) Geographic map provided by ESRI, ArcGIS Online
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 2) Coordinates displayed are:
 Spheroid and 11th South



Legend

-  Survey Corridor
-  NRCS Soils & Code

Sheet Identifier

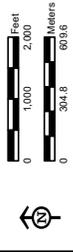
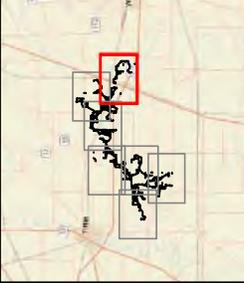
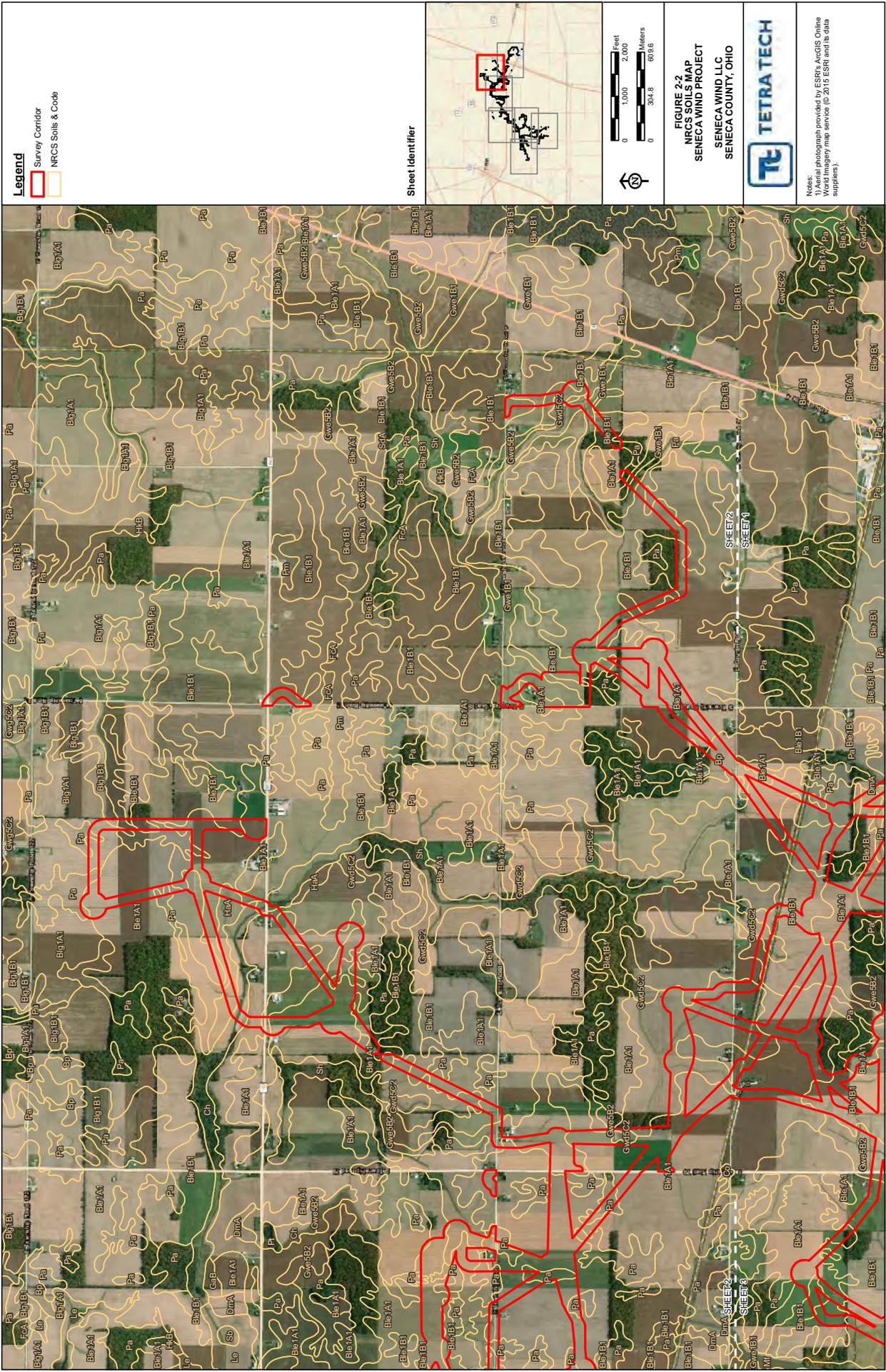
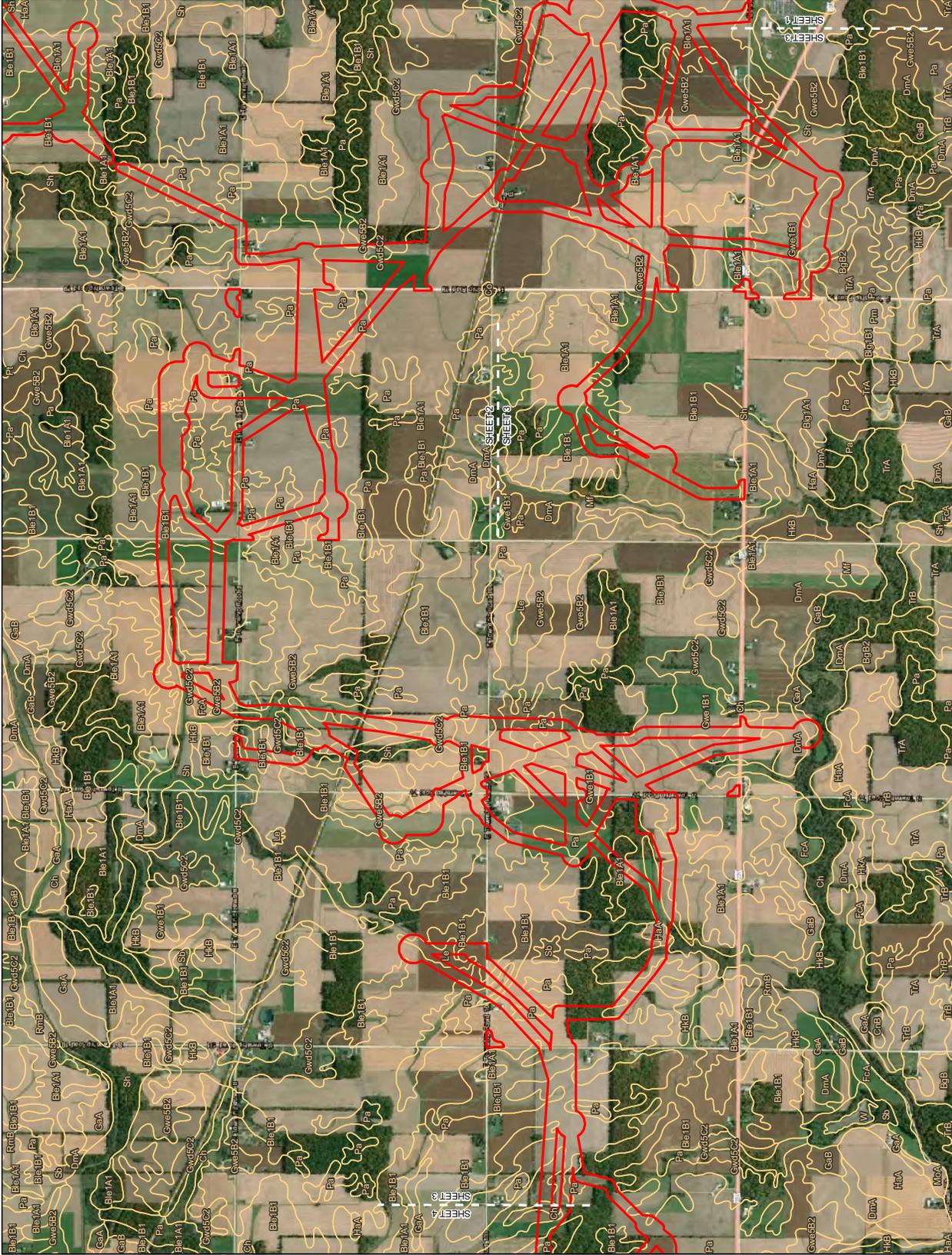


FIGURE 2-1
NRCS SOILS MAP
SENECA WIND PROJECT
SENECA WIND LLC
SENECA COUNTY, OHIO



Notes: (a) photograph provided by ESRV, Inc/GIS Online
World Imagery map service (© 2015 ESRV and its data suppliers).





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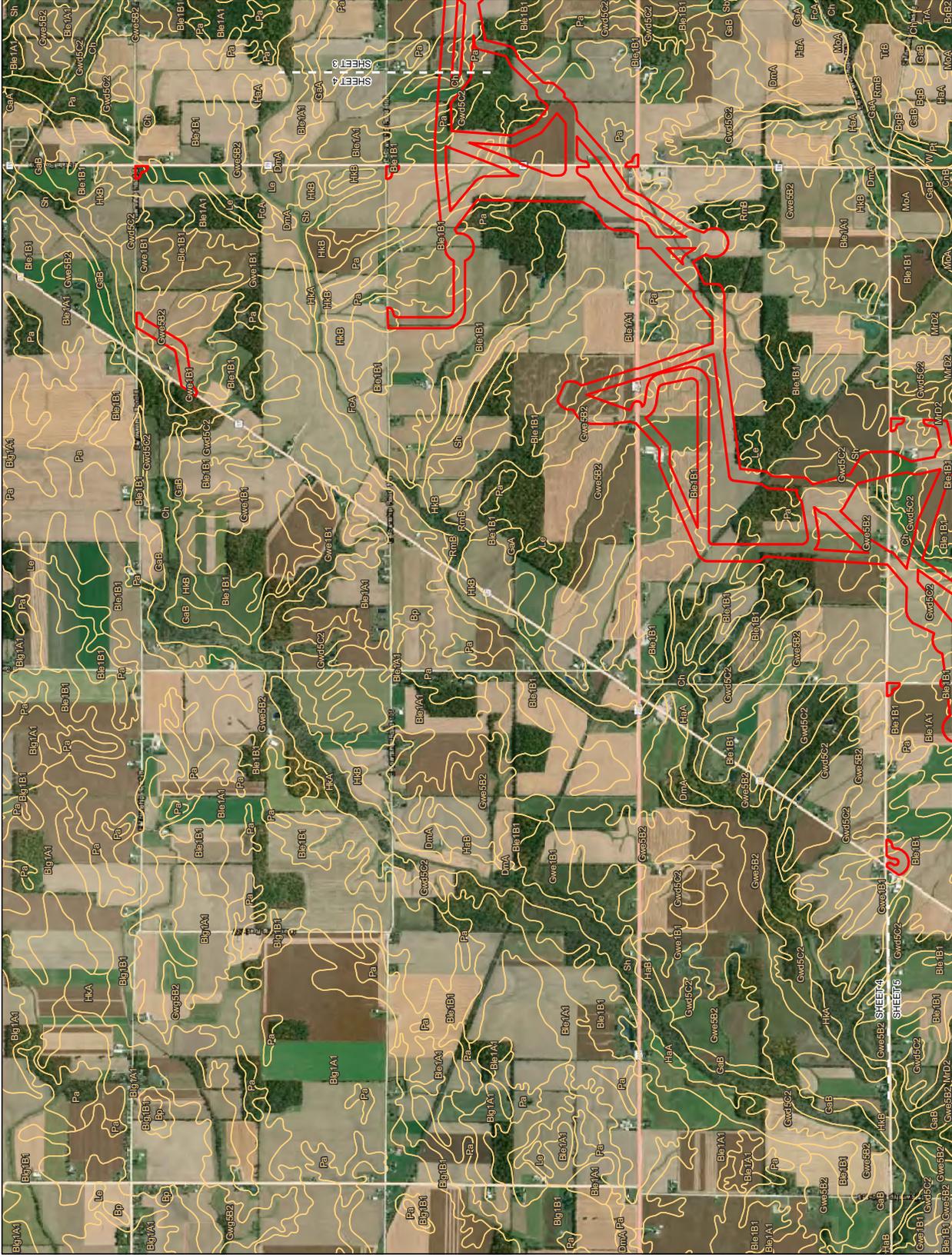
- Survey Corridor
- NRCS Soils & Code

Sheet Identifier

**FIGURE 2-3
NRCS SOILS MAP
SENECA WIND PROJECT
SENECA WIND LLC
SENECA COUNTY, OHIO**



Notes: Aerial photograph provided by ESRI, Inc. GIS Online World Imagery map service (© 2015 ESRI and its data suppliers).



Legend

- Survey Corridor
- NRCS Soils & Code

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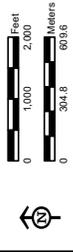
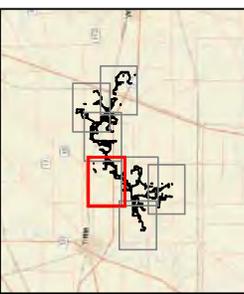
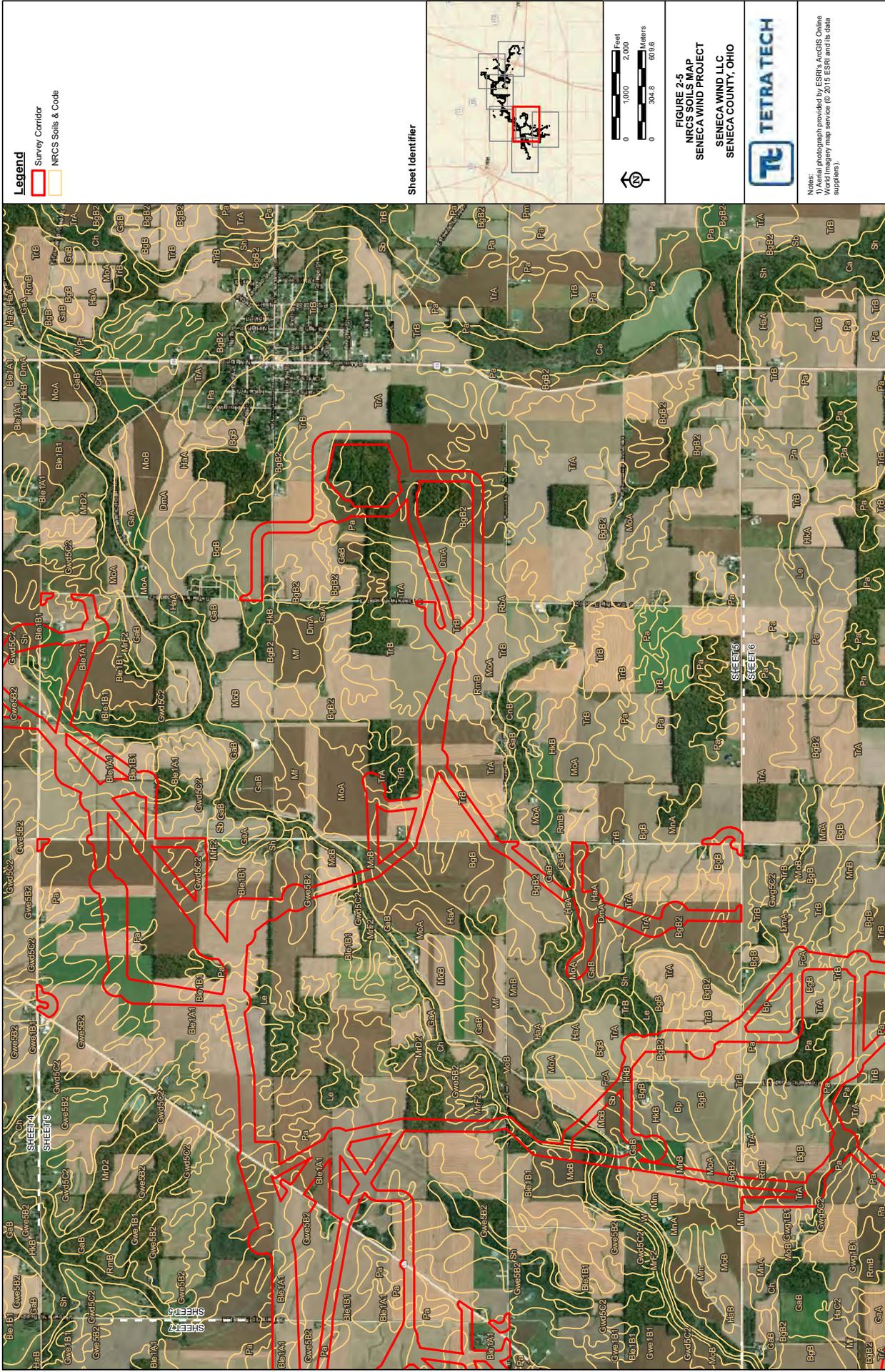


FIGURE 2-4
NRCS SOILS MAP
SENECA WIND PROJECT
SENECA WIND LLC
SENECA COUNTY, OHIO



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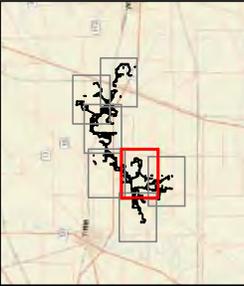
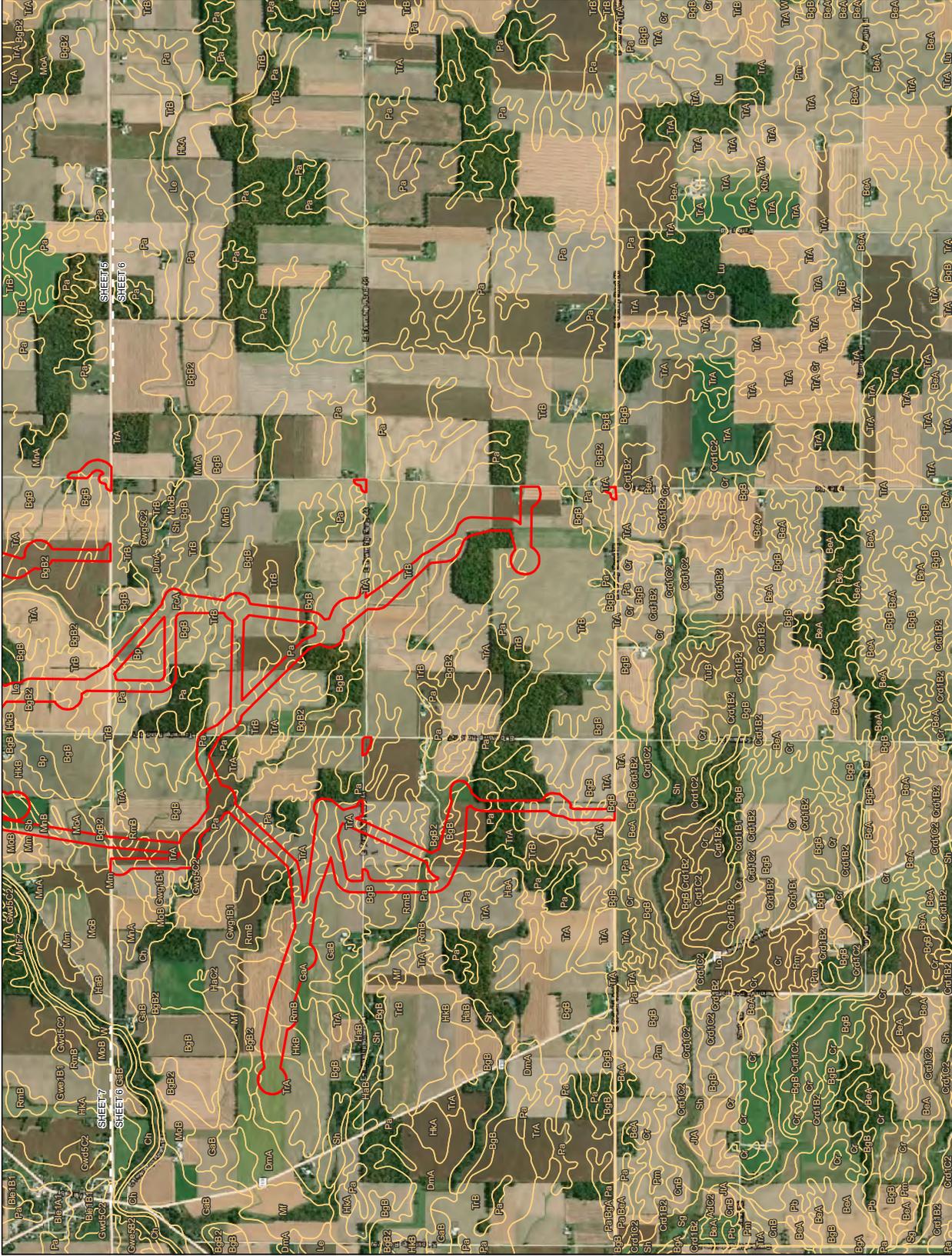


FIGURE 2-5
NRCS SOILS MAP
SENECA WIND PROJECT
SENECA WIND LLC
SENECA COUNTY, OHIO



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Legend
Survey Corridor
NRCS Soils & Code

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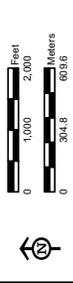
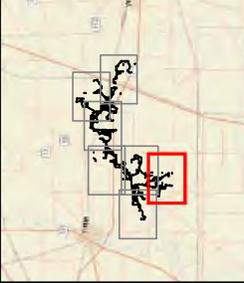
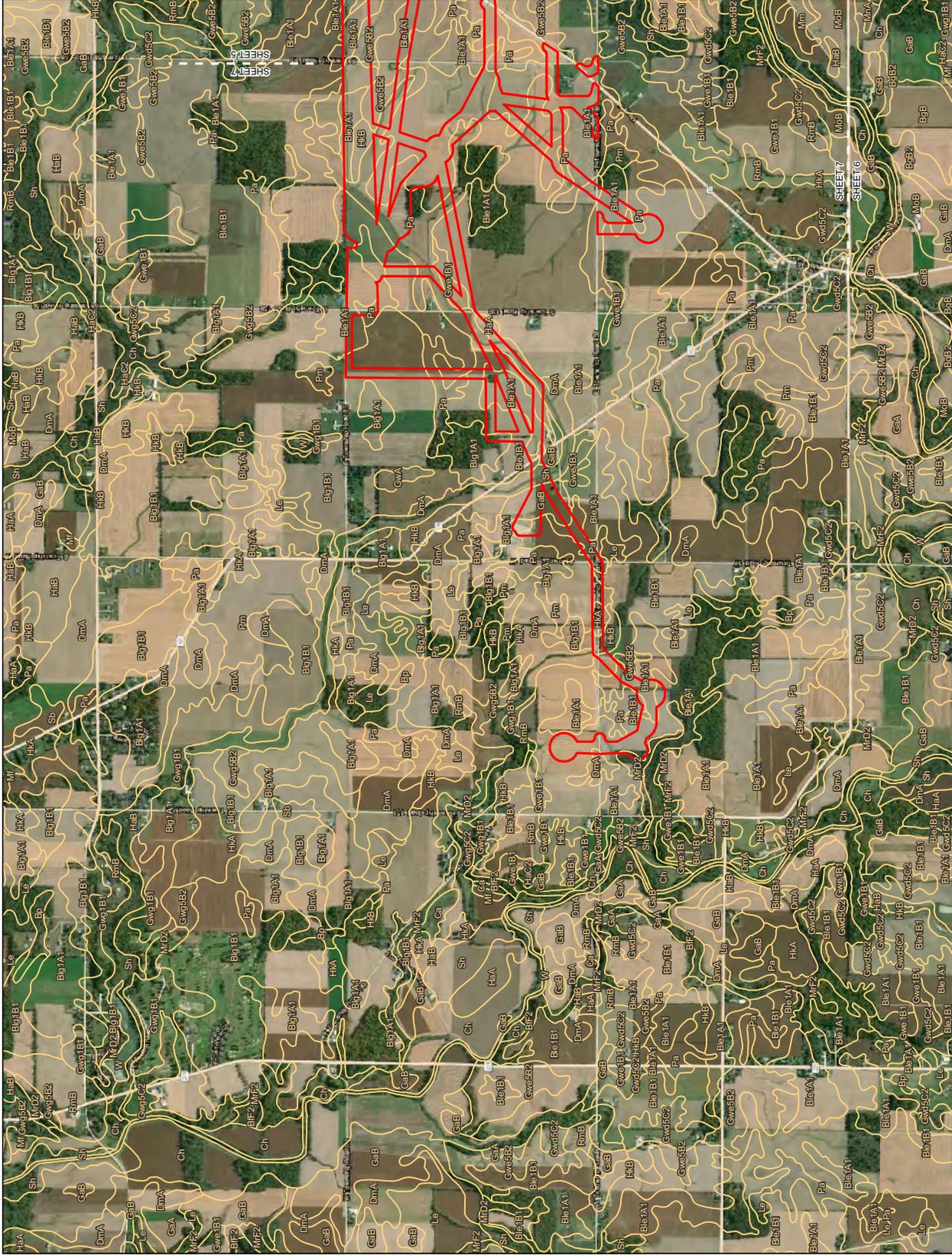


FIGURE 2-6
NRCS SOILS MAP
SENECA WIND PROJECT
SENECA WIND LLC
SENECA COUNTY, OHIO



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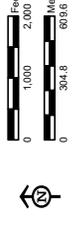


FIGURE 2-7
NRCS SOILS MAP
SENECA WIND PROJECT
SENECA WIND LLC
SENECA COUNTY, OHIO



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in

Case No(s). 18-0488-EL-BGN

Summary: Correspondence of Seneca Wind, LLC Submitting Aquatic Resource Report, Part 1 of 12 electronically filed by Teresa Orahod on behalf of Dylan F. Borchers