

ROARING BROOK WIND FARM

Phase 1A Cultural Resources Survey, GIS Landscape Analysis, & Phase 1B Archeological Survey Research Design

Town of Martinsburg
Lewis County, New York



Prepared for

Roaring Brook Wind Power, LLC
Lowville, New York

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ROARING BROOK WIND FARM:

**PHASE 1A CULTURAL RESOURCES SURVEY,
GIS LANDSCAPE ANALYSIS,
& PHASE 1B ARCHEOLOGICAL SURVEY RESEARCH DESIGN**

**TOWN OF MARTINSBURG
LEWIS COUNTY, NEW YORK**

PREPARED FOR

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MANAGEMENT SUMMARY

JMA conducted a Phase 1A cultural resources survey for the proposed 78 megawatt Roaring Brook Wind Farm located in the Town of Martinsburg, Lewis County, New York. The Phase 1A investigation was conducted on behalf of Roaring Brook Wind Power, LLC, a subsidiary of PPM Energy. The purpose of the Phase 1A investigation is to identify previously recorded archaeological or historic sites that may be affected by the construction or operation of the proposed Project. The Phase 1A survey also evaluates the potential for there to be previously unrecorded archaeological or historic resources within the area that will be potentially affected by the Project. All research and report preparation were conducted in accordance with the *New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work* (the SHPO *Guidelines*).

Project facilities will be located on 26 parcels of leased privately owned land (one landowner) totaling approximately 3,980 acres, located off of Carey Road in the southwestern part of Martinsburg. The Project will consist of approximately 39 wind turbines, each with a maximum (or nameplate) capacity of 2.0 megawatts (MW). As presently envisioned, the Project will use the Gamesa G90 Turbine (or equivalent), which will include a three-bladed rotor, with a diameter of 90-meters (295-foot), mounted on an 100-meter (328-foot) tubular steel tower. The Project will also involve the upgrade of an existing 11 mile system of unpaved forest roads, construction of 4 miles of new gravel access roads, installation of approximately 16 miles of buried gathering lines (electrical interconnects), and construction of an approximately 10-mile 34.5kV electrical interconnection line and substation. The proposed 10-mile interconnection line route and substation location have not yet been finalized; cultural resources concerns associated with these Project components will be addressed in a separate report.

There are no previously recorded archeological sites located within the Project Area. Historical maps and atlases identify the locations of a ca. 1870s saw mill and a ca. 1906 unidentified structure (likely a logging or hunting camp) within the Project Area. Archeological features or artifact deposits associated with these map-documented structures may be located within the Project Area. Because the Project Area has never been farmed or otherwise settled, it is relatively unlikely that any other structural remains or features (that are not related to the practice of logging) are located within the Project Area. In the opinion of JMA, a Phase 1B archeological survey will be necessary to determine with certainty whether any archeological sites are present within the Project's archeological Area of Potential Effect. The Phase 1B survey should be conducted in accordance with the SHPO *Guidelines* and the research design presented in Section 4.2 of this report.

There are four previously recorded historic properties within the five-mile Study Area that have been determined to be eligible for listing on the State and National Registers of Historic Places (S/NRHP). There is one additional property listed in the OPRHP Building Structure Inventory which is located within the Study Area but has not been formally evaluated for S/NRHP eligibility. JMA has undertaken a historic-architectural resources survey for the Project which was conducted in accordance with the SHPO *Guidelines*. The historic architectural survey included all areas within the Project viewshed within the five miles of all proposed turbine locations. The results, impacts analysis, and conclusions of the historic-architectural resources survey are presented in a separate report.

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1.0 INTRODUCTION

1.1 PURPOSE AND GOALS OF THE INVESTIGATION

JMA conducted a Phase 1A cultural resources survey for the Roaring Brook Wind Farm located in the Town of Martinsburg, Lewis County, New York. The Phase 1A investigation was conducted on behalf of PPM Energy, Inc. The information and recommendations contained in this report are intended to assist the Town of Martinsburg in evaluating the potential effects of the project in accordance with its obligations under the New York State Environmental Quality Review Act (SEQRA).

The purpose of the Phase 1A investigation is to identify previously recorded archeological or historic sites that may be affected by the construction or operation of the proposed project. The Phase 1A survey also evaluates the potential for there to be previously unrecorded archeological or historic resources within the area that will be potentially affected by the project. The information contained in this report is intended to help assess what effects construction of the proposed project would have on archeological or historic resources. All research and report preparation were conducted in accordance with the New York Archaeological Council's *Standards for Cultural Resources Investigations and the Curation of Archaeological Collections* (NYAC 1994) and the *New York State Historic Preservation Office Guidelines for Wind Farm Development Cultural Resources Survey Work* (the SHPO *Guidelines*) issued by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP 2006).

1.2 PROJECT LOCATION AND DESCRIPTION

Roaring Brook Wind Power, LLC, a subsidiary of PPM Energy, is proposing to develop a wind-powered generating facility (the Project) in the Town of Martinsburg, Lewis County. Project facilities will be located on 26 parcels of leased privately owned land (one landowner) totaling approximately 3,980 acres (the Project Area), located off of Carey Road in the southwestern part of Martinsburg (Figure 1). The landscape within the Project Area is actively logged forest in various stages of re-growth, but also includes significant wetland acreage. There are no public roads located within the Project Area.

The Project will consist of approximately 39 wind turbines, each with a maximum (or nameplate) capacity of 2.0 megawatts (MW), resulting in a generating capacity of approximately 78 MW. As presently envisioned, the Project will use the Gamesa G90 Turbine (or equivalent), which will include a three-bladed rotor, with a diameter of 90-meters (295-foot), mounted on an 100-meter (328-foot) tubular steel tower. The Project will also involve the upgrade of an existing 11 mile system of unpaved forest roads, construction of 4 miles of new gravel access roads, and installation of approximately 16 miles of buried gathering lines (electrical interconnects).

To deliver power to the New York State power grid, the Project will also include construction of a 34.5 kV electrical interconnection line and substation/point of interconnection facility located adjacent to the National Grid Taylor-Boonville 115 kilovolt (kV) transmission line near Lee Road. The interconnection route will be comprised of approximately 4 miles of buried electrical line and 6 miles of overhead line on wooden pole structures. The precise route of the interconnection line has not yet been finalized. Cultural resources concerns associated with the proposed interconnection line and substation will be addressed in a separate report.

Construction of the proposed Project would include ground-disturbing activities, and the proposed turbines would be visible in the surrounding landscape. The area of potential effect (APE) for archeological resources includes all areas that may be physically disturbed or affected by Project-related construction or operation. In accordance with the SHPO *Guidelines*, the Study Area for identifying previously recorded historic and/or architecturally significant

structures was defined as the topographic viewshed within a five-mile radius from proposed wind turbine locations. The topographic viewshed includes all areas that, based solely on topography without any intervening structures or forest cover, would have views of one or more Project facilities (Figure 2). The vegetative viewshed models the effects of intervening forest cover that would (at minimum, on a seasonal basis during the foliate season) obstruct views of Project facilities (Figure 3). This Study Area includes all of the areas where there is a potential for significant visual effects.

2.0 BACKGROUND RESEARCH

2.1 GEOLOGY AND SOILS

The Roaring Brook Wind Farm Project Area is located within the central uplands of the Tug Hill Plateau in southwestern Lewis County. The Tug Hill Plateau rises gradually from the escarpment along its eastern perimeter to a maximum elevation of 2,012 feet at Welch Hill (USDA 1960:103). The escarpment includes a series of limestone formations: immediately west of the Black River Valley are the Trenton limestone beds, made up of thin layers of limestone alternating with calcareous, shale layers; in the vicinity of Martinsburg these beds are more than 400 feet thick. Continuing west, the bedrock is composed of Utica formation limestone and shale. The interior of Tug Hill Plateau is underlain by Loraine group sandstone and shale, with gray Oswego sandstone farther west (USDA 1960:104-105).

The Natural Resources Conservation Service (NRCS) is producing an electronic soil survey for Lewis County, but has not completed this work. Detailed soil mapping is not currently available for the southwestern portion of the Town of Martinsburg (USDA 1960; NRCS 2007). The most specific soil mapping data available for the Project Area is the State Soil Geographic (STATSGO) Database. This data set is a generalized statewide soil association map that is compiled from more detailed soil survey maps (NRCS 2007). Soils within the Project Area are in the Worth-Empeyville-Westbury soil association (Figure 4). These are strongly acidic, moderately stony, well drained and moderately well drained soils on glacial till derived from sandstone, which occupy interior portions of the Tug Hill Plateau (USDA 1960:48-49). The approximate percentages of soils in the association are: Worth series soils (40-60%), Empeyville series soils (20-40%), Westbury series soils (15-25%), and Tughill series soils (10-15%). The typical soil profiles and characteristics for these soils are provided in Table 1.

Table 1. Soils within the Project Area.

Name and Description	Stratum	Depth	Color	Texture
Worth series well drained; formed in glacial till; relief is dominantly undulating but in places hilly or steep; mostly occur on till plains, some are on drumlins, end moraines, or marginal moraines	A _o	3-0 in (8-0 cm)	black	humus
	A ₂	0-2 in (0-5 cm)	7.5YR 7/2 pinkish gray	stony loam
	B ₂₁	2-10 in (5-25 cm)	7.5YR 5/6 strong brown	stony loam
	B ₂₂	10-17 in (25-43 cm)	10YR 5/4 yellowish brown	stony loam/fine sandy loam
	B ₂₃	17-21 in (43-53 cm)	10YR 4/4 dark yellowish brown	stony fine sandy loam
	A ₂ '	21-25 in (53-64 cm)	10YR 6/3 pale brown	stony fine sandy loam
	B _{21M} '	25-38 in (64-97 cm)	7.5YR 5/4 brown	stony fine sandy loam
	B ₂₂ '	38-55 in (97-140 cm)	10YR 5/3 brown	stony fine sandy loam
Empeyville series moderately well to somewhat poorly drained; formed in till; relief is undulating to rolling or sloping	C ₁	55-70 in (140-178 cm)	10YR 5/3 brown	very gravelly loamy fine sand
	A _o	4-0 in (10-0 cm)	black	humus
	A ₂	0-2 in (0-5 cm)	5YR 6/2 pinkish gray	stony very fine sandy loam
	B ₂₁	2-6 in (5-15 cm)	5YR 6/4 yellowish red	stony very fine sandy loam
	B ₂₂	6-15 in (15-38 cm)	7.5YR 5/4 brown	stony very fine sandy loam
	B ₃	15-21 in (38-53 cm)	10YR 5/4 yellowish brown	stony fine sandy loam
	A ₂ '	21-25 in (53-61 cm)	2.5YR 5/2 grayish brown	stony fine sandy loam
	B ₂ '	25-40 in (61-102 cm)	10YR 5/3 brown	stony sandy loam
Westbury series poorly to somewhat poorly drained; formed in glacial till; relief is nearly level to gently sloping	A _o	6-0 in (15-0 cm)	black	organic forest litter
	A ₂	0-2 in (0-5 cm)	7.5YR 6/2 pinkish gray	stony loam
	B ₂₁	2-6 in (5-15 cm)	7.5YR 5/6 strong brown	stony loam/stony silt loam
	B ₂₂	6-10 in (15-25 cm)	10YR 6/3 pale brown	stony loam/stony silt loam
	B ₃	10-20 in (25-51 cm)	10YR 6/4 yellowish brown	fine sandy loam
	C	20+ in (51+ cm)	10YR 6/4 brownish gray	stony loam
Tughill series very poorly drained; relief is flat to depressed; occur in swales and depressions	A _o	6-0 in (15-0 cm)	greasy brown/black	decomposed organic material
	A ₂ G	0-3 in (0-8 cm)	2.5Y 5/1 gray	stony silt loam
	B ₂ G	3-18 in (8-46 cm)	5Y 6/2 light olive gray	sandy loam
	C _g	18+ in (46+ cm)	5Y 6/2 light olive gray	stony sandy loam

2.2 PREVIOUSLY RECORDED CULTURAL RESOURCES

JMA reviewed the State and National Registers of Historic Places (S/NRHP); the Building-Structure Inventory maintained by OPRHP; the consolidated archeological site files of the OPRHP and the New York State Museum (NYSM); and standard syntheses of regional prehistory (Beachamp 1900; Einhorn 1968; Parker 1920; Ritchie 1971, 1980; Ritchie and Funk 1973) to identify previously recorded archeological sites and historic properties located within the Study Area. JMA also contacted appropriate local institutions and individuals for the purpose of identifying additional archeological or historic properties or other issues of concern. Individuals and institutions contacted by JMA included the Lewis County Historical Society and Lisa Becker (the Lewis County Historian).

2.2.1 Archeological Sites

There are 12 previously recorded archeological sites located within approximately five miles of the Project Area (Table 2). These sites include the foundation remains of 10 nineteenth-century farmsteads and one abandoned cemetery that were identified during the archeological survey conducted for the Maple Ridge (formerly Flat Rock) Wind Farm in 2001-2002 (JMA 2004a). NYSM Site 7112 is the only previously identified Native American archeological site located within five miles of the Project Area. The site consists of “traces of occupation” originally documented by Arthur Parker (1920:582) in *The Archaeological History of New York State*. These traces of occupation imply a broad area from which Native American artifacts have been recovered or reported, and frequently indicate the presence of small camp sites and/or lithic scatters. NYSM Site 7112 includes an approximately two-mile-long area located one-half mile west of and overlooking West Martinsburg, extending both north and south of Rector Road.

Table 2. Archeological sites located in the vicinity of the Project Area.

Site Identifier	Site Name	Reference	Period	Description	Distance
Sites located within the 5-mile Study Area					
A04911.000060	Johnson (JMA 11)	JMA 2004a	ca. 1850s	farmstead foundations	1 mile NE
A04911.000061	Seymour/Johnson (JMA 12)	JMA 2004a	ca. 1850s	farmstead foundations	1.6 miles NE
A04911.000058	Graves/Henry (JMA 9)	JMA 2004a	ca. 1850s	farmstead foundations	3.1 miles E
A04911.000057	Corrigan (JMA 8)	JMA 2004a	ca. 1850s	farmstead foundations	3.2 miles NE
A04911.000052	Archer 1 (JMA 2)	JMA 2004a	ca. 1850s	farmstead foundations	3.2 miles N
A04911.000053	Archer 2 (JMA 3)	JMA 2004a	ca. 1850s	farmstead foundations	3.3 miles N
A04911.000059	Snyder Rd Cemetery (JMA 10)	JMA 2004a	ca. 1860s-1880s	family-plot cemetery	3.4 miles NNE
NYSM 7113	Traces of Occupation	Parker 1920	unknown prehistoric	Native American artifacts	3.5 miles ENE
A04911.000055	Pooler/Roberts (JMA 6)	JMA 2004a	ca. 1850s	farmstead foundations	3.5 miles E
A04911.000063	Ramsey/Hall (JMA 14)	JMA 2004a	ca. 1850s	farmstead foundations	3.8 miles N
A04911.000054	Gardiner/Snyder (JMA 4)	JMA 2004a	ca. 1850s	farmstead foundations	3.9 miles NNE
A04911.000056	Rice (JMA 7)	JMA 2004a	ca. 1850s	farmstead foundations	3.9 miles E
Sites located beyond 5 miles but on Tug Hill or along Roaring Brook					
NYSM 9098	Buckingham	Einhorn 1968	unknown prehistoric	isolated find: stone axe	6.2 miles SE
A04911.000064	Markowski Road	PAF 2005	unknown prehistoric	isolated find: chert flake	6.8 miles NE
NYSM 3614	Kinsman Farm (ACP-Lewis 1)	Beauchamp 1900; Parker 1920; Einhorn 1968	unknown prehistoric	Native American burials	7.3 miles ENE
NYSM 9117	Boshart-Marks	Einhorn 1968	Late Archaic-Late Woodland	multi-component site; projectile points & pottery	8.7 miles ENE
NYSM 9097	Hill Farm	Einhorn 1968	Late Archaic or Terminal Archaic	isolated find: projectile point	9.4 miles E
NYSM 9115	Kerr	Einhorn 1968	Late Archaic-Late Woodland	projectile points	9.6 miles E

The NYSM site files include additional sites located on Tug Hill or along the lower course of the Roaring Brook that are located outside of the five-mile Study Area for the Project (Table 2). The Buckingham site (NYSM 9098) is the location of a “finely grooved granite axe, 8 inches long” recovered by a hunter from a stone pile located within a marshy area along the Sucker Brook – a tributary of Fish Creek (Einhorn 1968). The Hill Farm site (NYSM 9097) is located within a hayfield on a lower terrace of the eastern Tug Hill escarpment; the site is known from an isolated Susquehanna Broad projectile point (Late Archaic Period) recovered by the owners of the property (Einhorn 1968). The Kinsman Farm site (NYSM 3614) is located approximately 1.5 miles east-northeast of Martinsburg and has been described as a prehistoric “burial place on the Kinsman farm. Skeletons and pipes were found” (Beauchamp 1900:80; Parker 1920:582). Archeological testing at the Boshart-Marks site (NYSM 9117) located at the confluence of Roaring Brook and the Black River identified Late Archaic through Late Woodland occupations (Einhorn 1968).

2.2.2 *Historic and Architectural Resources*

JMA reviewed the State and/or National Registers of Historic Places (S/NRHP) and OPRHP Building-Structure Inventory to identify historic and/or architecturally significant properties located within the Study Area for the Project. The Study Area includes all areas within five-miles of proposed wind turbine generator (WTG) facilities that are within the topographic viewshed for the Project (Figure 2). There are five (5) previously recorded historic and/or architecturally significant properties located within the five-mile Study Area (Table 3; Figures 2 and 3). These properties include three nineteenth-century cemeteries and two abandoned mid-to-late-nineteenth-century vernacular farmhouses. All of these properties were identified and evaluated during the historic-architectural resources survey conducted for the Maple Ridge (formerly Flat Rock) Wind Farm in 2002-2003 (JMA 2004b).

Table 3. Previously identified historic-architectural resources located within the five-mile Study Area.

OPRHP Unique Site Number	Property Name or Description Address and Municipality (Previous Survey Identifier)	OPRHP Eligibility Determination	Distance to Nearest Proposed WTG	Within Topographic Viewshed ¹	Within Vegetative Viewshed ²
04911.000022	Ashback Cemetery 3805 Rector Road Town of Martinsburg (JMA 2004b: Property #87)	S/NRHP Eligible	3.8 miles SW to WTG 5	No	No
04911.000023	Chapel Hill Cemetery 4253 Flat Rock Road Town of Martinsburg (JMA 2004b: Property #95)	S/NRHP Eligible	3.5 miles WSW to WTG 5	No	No
04911.000084	St. Patrick's Cemetery Maple Ridge Road Town of Martinsburg (JMA 2004b: Property #99)	S/NRHP Eligible	2.6 miles W to WTG 20	Yes	Yes
04909.000029	Abandoned House 4247 Gardner Road Town of Lowville (JMA 2004b: Property #78)	S/NRHP Eligible	4.6 miles SSW to WTG 1	No	No
04912.000063	Abandoned House 2705 Rector Road Town of Montague (JMA 2004b: Property #81)	Undetermined	2.8 miles SSE to WTG 6	Yes	Yes

¹ The topographic viewshed includes all areas that, based solely on topography without any intervening structures or forest cover, would have views of one or more Project facilities (Figure 2).

² The vegetative viewshed models the effects of intervening forest cover that would (at minimum, on a seasonal basis during the foliate season) obstruct views of Project facilities (Figure 3).

2.3 HISTORY OF THE PROJECT AREA

JMA reviewed both written and cartographic documents relating to past and present environmental conditions and historical settlement of the region. JMA personnel conducted research for the Project at the Lewis County Historical Society, New York State Library, New York Public Library, and Library of Congress. Historical sources examined for the Project included:

- The J.H. French (1860) *Gazetteer of the State of New York*;
- the Hamilton Child (1872) *Gazetteer and Directory of Lewis County, New York, for 1872-1873*;
- the Sylvester (1877) *Historical Sketches of Northern New York and the Adirondack Wilderness*;
- the Hough (1883) *History of Lewis County, New York*; and,
- the Bowen (1970) *History of Lewis County, New York, 1880-1965*.

Historic maps examined for the Project included:

- the 1829 Burr *Atlas of New York State*;
- the 1857 Ligowski *Topographic Map of Lewis County* (Figure 5);
- the 1875 Beers *Atlas of Lewis County* (Figure 6);
- the 1895 Bien *Map of Lewis County*;
- the 1906 *Highmarket, N.Y.* USGS topographic survey (Figure 7); and,
- the 1928 Gaylord *Highway Map of Lewis County*.

Throughout the Colonial Period, European activities in northern New York were restricted to limited commercial, missionary, and military expeditions (Klein 2001:258; Trigger 1978). A period of grand-scale land speculation followed the Revolutionary War in western, central, and northern New York. In 1789, the State sold an enormous 3,670,715-acre tract of land to Alexander Macomb and his associates. Macomb's Purchase included almost all of present-day Franklin, Saint Lawrence, Jefferson, and Lewis Counties (Hough 1883:28; Klein et al 1985:2.15). Portions of the present Town of Martinsburg were sub-divided and sold off to speculators between 1795 and 1803 as parts of the Boylston Tract (Hough 1883:29-32; Bien 1895). Erroneous surveys, multiple land sales, and competing claims characterized many of these early land transactions. These complications, combined with the undeveloped frontier character of the region, delayed settlement of northern New York until the early-nineteenth century.

Lewis County was formed from Oneida County by an act of the state legislature in 1805; the Town of Martinsburg was formed from Turin in 1803, and received additional lands from Turin in 1819 (Hough 1883:11,236-237,296,443). Settlement in the area developed slowly in the early-nineteenth-century. Rural communities formed around gristmills and sawmills, and other institutions such as stores, taverns, schools, and churches were developed to service these communities. By the mid-nineteenth century, the lands in the Black River Valley were largely settled, but the western part of the Town of Martinsburg remained principally wilderness into the 1860s.

In 1801, General Walter Martin of Massachusetts purchased 8,000 acres within the Boylston Tract and founded the hamlet of Martinsburg. Martin was a great promoter of this area and built several mills to entice settlement. Martin wielded considerable political influence and secured the county seat at Martinsburg by donating land and money for the construction of a courthouse, which was built in Martinsburg in 1810 (French 1860). In 1828 a deposit of galena (lead ore) was discovered near the hamlet, and in the 1860s, speculators began selling shares in mining companies to extract copper and lead ore from Martinsburg. The brief boom provided by these mining concerns did not result in long-term growth in Martinsburg (French 1860; Hough 1883:457-459).

The hamlet of Martinsburg reached its peak importance in the 1840s and early 1850s. By the late 1850s, the hamlet was showing signs of decline because of its location in the hills (away from the ca. 1848 Black River Canal and the ca. 1868 Black River and Utica Railroad); the 1854 failure of the First Lewis County Bank, which was located in Martinsburg; and a disastrous 1859 fire that destroyed many of the community's business establishments. In 1860 the population of the hamlet was 210, and Martinsburg contained the county offices, churches, and a newspaper office. After the removal of the county seat to Lowville in 1864, Martinsburg decreased in countywide importance but continued to serve as a hub for farmers in the area. In 1880, the hamlet's commercial interests included blacksmiths, a cooper, a butter tub and cheese box manufactory, a cabinetmaker, cigar maker, dress shop, drygoods store, hardware store, hotel, milliner, wagon maker, and a physician (Hough 1883:461).

Agriculture was the dominant economic pursuit in Lewis County in the nineteenth and twentieth centuries. The alluvial soils of the Black River valley were fertile and allowed for the cultivation of market crops. The thin soils of the Tug Hill Plateau, however, were better suited to pasturage. Initially the dairy industry served local markets, but in the late-nineteenth century, numerous small cheese factories flourished, and cheese was exported by railroad to farther markets. The number of cheese factories declined in the early-twentieth century as transportation and milk-handling technologies improved. These improvements allowed for the consolidation of cheese-making operations, as well as the sale of a greater portion of Lewis County's milk production as fluid milk in larger metropolitan markets (Bowen 1970:497; Hough 1883:327–328).

Timber remained an important local resource throughout the nineteenth century and generated numerous industrial concerns in Lewis County, including sawmills and furniture factories (Klein et al. 1985:2.19). During the mid-nineteenth century, tanning, paper, lumber, and excelsior mills and manufactories, as well as those for processing hemlock extract, were primarily located along the Black, Moose, Beaver, and Deer rivers in the eastern part of the county (French 1860), taking advantage of the available waterpower as well as the extensive forests found there:

The whole county was originally covered with a dense growth of timber, and much of the County, especially in the eastern and south-western parts, is still occupied by forests... Lumbering and tanning form branches in industry which are of no inconsiderable importance. Vast forests of timber still cast their somber shadows over the east and west borders of the County... These, however, are fast disappearing under the constant and increasing demand of the numerous saw mills, whose steel jaws tax the energies of the sturdy ax-men to supply them. Already the value of forest products in this County rank the eleventh in the State. There are about 130 saw mills in the County, some of immense capacity, which produce annually as many million feet of lumber (Child 1872:62-66).

The map of Lewis County in the 1829 Burr *Atlas of New York State* indicates that there were no mills, roads, or other documented settlement in southwest Martinsburg in the early-nineteenth century. The southwestern portion of Lewis County, including the Project Area, is identified as the Boylston Purchase (or Boylston Tract), with the lands in the western part of Martinsburg surveyed into one-mile-square lots (Burr 1829; Hough 1883:443). The Project Area remained undeveloped through the mid-nineteenth century; the 1857 Ligowski *Topographic Map of Lewis County* does not depict any structures, roads, or other improvements within the Project Area (Figure 5).

The 1875 Beers *Atlas of Lewis County* identifies the southwestern part of Martinsburg (including the Project Area) as the 5034-acre "Holden & Owens Tract"; the "Holden & Owens SM" (saw mill) is depicted within Lot 90, within the southern portion of the Project Area along the headwaters of the north branch of Fish Creek (Figure 6). Holden

and Owens are not included among the sawmills listed in the “Lewis Co. Classified Business Directory” within the Hamilton Child *Gazetteer and Directory of Lewis County, New York, for 1872-1873*. The listing for E.B. Holden, a grocer in Turin, identifies Holden as the owner of the tract that included the Project Area:

HOLDEN, EMERY B. (Turin) drugs, groceries, and provisions, farmer 25 [acres] and, in Martinsburgh, 5,000 acres wild land (Child 1872:271).

The description of Holden’s tract in Martinsburg as “wild land” in the 1872 directory suggests that the Project Area remained undeveloped and unsettled at that time. Charles N. Owen (general merchandise and clothier) is also identified as a prominent merchant in Turin (Child 1872:272, 284), and may have been the co-proprietor of the slightly later saw mill venture. The fact that Holden and Owens (together or separately) are not identified as operating a saw mill in the 1872 directory, but that their mill is depicted on the 1875 Beers atlas, indicates that the mill operations commenced during the period between 1872 and 1875. The Holden and Owens sawmill was in operation for only a short period:

By 1880, of the many sawmills and wood working plants that once took advantage of the splendid water power afforded by streams in [Martinsburg], the following were still in operation: Holden and Owens Mill on the north branch of Fish Creek, which had consumed most of the available soft wood on the Holden tract and ceased operations about 1885 (Bowen 1970:378-379).

In 1888-1889, notable local industrialist Lafayette Wetmore purchased portions of the Holden tract along with other parcels in the western part of Martinsburg, for the purpose of supplying the mill town he established at Wetmore. “The activity at this mill became such that three woods camps were set up to supply the quantity of logs required to keep the expanded mill in operation” (Bowen 1970:409). It is unclear whether any of these “woods camps” were located within the Project Area.

The 1875 atlas (Figure 6) also depicts a road through the Project Area that provided access to the Holden & Owens saw mill, the eastern portion of which is still in use as French Road. The 1895 *Bien Map of Lewis County* also depicts the French Road running through the Project Area, although this map does not depict any structures. The 1906 USGS *Highmarket, N.Y.* topographic quadrangle (Figure 7) depicts an unimproved road along the current route of French Road; no structures or other indications of the saw mill are shown where the road crosses the north branch of Fish Creek. The 1906 survey does depict an unidentified building at the end of an unimproved road located northeast of the former saw mill location (Figure 7). Based on the remote location of the Project Area, this structure likely represents a logging or hunting camp; it is possible that the structure represents one of the “woods camps” associated with the Wetmore sawmills (described above).

2.4 EXISTING CONDITIONS

JMA’s Principal Archeologist conducted a preliminary field reconnaissance of the Project Area on August 30, 2007. The Project Area entirely within re-growth forest and forested wetland areas (Figure 8); existing conditions within the Project Area are depicted in Photographs 1-6. There are no active or former agricultural fields within the Project Area. A network of logging roads provides access to most portions of the Project Area (Photographs 4-5). The current property owner maintains and improves these roads for access by logging trucks and recreational vehicles. The current property owner has also constructed a few hunting camps (A-frame structures) within the Project Area, overlooking the ponds located in the center part of the Project Area.

The field reconnaissance included an inspection of the approximate location of the “Holden & Owens” saw mill depicted on the 1875 Beers atlas. A logging road currently crosses the north branch of Fish Creek over a culvert at this location. Immediately north of the logging road, the creek is impounded within a roughly rectangular-area which appears artificial or constructed (Photograph 6); this impounded section of the creek may represent a former millpond. JMA’s Principal Archeologist conducted a preliminary pedestrian reconnaissance of the wooded areas immediately adjacent to this possible millpond feature to determine if other features associated with the mill were present. No foundation remains or other obvious features were observed, although the area is overgrown with dense shrub and re-growth vegetation.

3.0 ARCHEOLOGICAL SENSITIVITY ASSESSMENT

3.1 PREHISTORIC-PERIOD ARCHEOLOGICAL SENSITIVITY ASSESSMENT

Iroquois mythology and oral history held that Tug Hill was the place where the Iroquois first emerged into the world (Sylvester 1877:105-106). During the Late Woodland and Early Contact Periods, Central New York was the territory of the Iroquois Confederacy. Northern New York (including the Project Area) was within the traditional hunting grounds of the Oneida Nation, which extended north to the Saint Lawrence River and south to the Susquehanna River. The numerous Late Woodland Period sites located along the Black River Valley indicate that the surrounding region was extensively occupied during the late prehistoric period (Abel 2002; Abel and Furst 1999; Beauchamp 1900; Harrington 1920; Parker 1920). After about 1550 AD northern New York was largely unoccupied. The area was used as hunting grounds by the Oneida Iroquois and served as a buffer zone between the Iroquois Confederacy and the Huron and their allies (Klein et al. 1985:2.14; Trigger 1978:346). At the end of the eighteenth century, a narrow tract of land “a half mile wide on each side of Fish Creek” was (briefly) set aside as reservation lands for the Oneida “on account of the salmon fisheries” (Child 1872:71). It is unclear how far north along Fish Creek this reservation was intended to extend; regardless, the Oneida claim to any lands in Lewis County was settled and extinguished in an agreement executed in 1802 as a component of the Macomb Purchase (Child 1872:72).

The relative lack of previously recorded Native American archeological sites within the Study Area may not reflect the actual distribution of archeological sites in the region. Previous researchers have observed that relatively little archeological research has been undertaken in Lewis County (Klein et al. 1985; PAF 1989). The Buckingham site (NYSM 9098) is the location of a “finely grooved granite axe, 8 inches long” found within a marshy area along the headwaters of Sucker Brook (Einhorn 1968) in an environmental setting very similar to the Roaring Brook Project Area. The Kinsman Farm (NYSM 3614) and Boshart-Marks (NYSM 9117) sites are located at or near the confluence of Roaring Brook and the Black River. The proximity of these sites to a drainage whose headwaters rise within the Project Area suggests that it is possible that occupants of these sites may have forayed to the interior of the plateau along the stream, and therefore traversed through or hunted within the Project Area.

In general, the rocky landscape within the Project Area is relatively inhospitable. Any possible Native American activity in the vicinity would have been limited to short term hunting or foraging, resulting in small and ephemeral archeological sites. Soils within the Project Area are stony, relatively shallow soils formed in glacial till that overlay sandstone bedrock. There is no possibility for deeply buried archeological sites to be located within the Project Area.

3.2 HISTORIC-PERIOD ARCHEOLOGICAL SENSITIVITY

Throughout the nineteenth and twentieth centuries, the Project Area has been actively logged but otherwise remained undeveloped, and does not appear to have ever been cultivated. Historical sources document the operation of a saw mill within the Project Area between 1875 and 1885. Possible historic-period archeological sites that are depicted on historic maps (see Figure 9) within the Project Area include:

- The “Holden & Owens SM” (sawmill) depicted on the 1875 Beers *Atlas of Lewis County*, located approximately 680 feet (~205 m) east of proposed wind turbine #38 (Figures 6 and 9);
- An unidentified structure (likely a logging or hunting camp) depicted within the southeastern portion of the Project Area on the 1906 *Highmarket, N.Y.* USGS topographic survey, located approximately 545 feet (~166 m) southwest of proposed wind turbine #25 (Figures 7 and 9).

An apparently artificial (or constructed), impounded pond along the north branch of Fish Creek was observed in the vicinity of the map-documented saw mill (Photograph 6; see Section 2.4). This water body may represent a millpond constructed as a component of the saw mill. JMA's Principal Archeologist did not observe any foundation remains in the immediate vicinity of the possible pond feature during the preliminary field reconnaissance; however, it is possible that structural remains, foundations, other features, and/or artifact deposits associated with the saw mill may be located in the overgrown areas located in the immediate vicinity.

Structural remains, features, and/or artifact deposits associated with the ca. 1906 map-documented structure (assumed to represent a logging or hunting camp) may also be located within the Project Area. Because the Project Area has never been farmed or otherwise settled, it is relatively unlikely that any other structural remains or features (that are not related to the practice of logging) are located within the Project Area.

3.3 PRIOR GROUND DISTURBANCE

The entire Project Area is located within re-growth forest and forested wetland areas (Figure 8; Photographs 1-3). The area has been logged since at least the mid-nineteenth century. Most of the non-wetland portions of the Project Area have likely experienced some previous disturbance during the past two centuries associated with various lumbering practices, including timbering, blow-downs, stump removal, logging road construction/grading/maintenance, log landings, skidder trails, and related activities.

A network of logging roads provides access to most portions of the Project Area. Existing improvements to these roads include clearing, stripping, grading, and seeding of graded/banked road shoulders (Photographs 4-5). These improvements have been undertaken by the current property owner over the past few years.

4.0 GIS LANDSCAPE ANALYSIS AND PHASE 1B SURVEY RESEARCH DESIGN

4.1 GIS LANDSCAPE CLASSIFICATION METHODOLOGY

The SHPO *Guidelines* detail a specialized methodology for archeological surveys for wind projects in New York. The SHPO methodology consists of identifying environmental zones within the Project Area following the approach detailed in Robert Funk's 1993 study entitled *Archeological Investigations in the Upper Susquehanna Valley, New York State*. After identifying and defining these environmental zones within the Project Area, the SHPO *Guidelines* request that the cultural resources consultant devise a program of archeological sampling that provides for intensive sampling of each type of environmental zone represented within the Project Area. The most efficient means of identifying these environmental zones and designing an archeological sampling strategy is through the construction of a landscape classification model within a Geographic Information System (GIS) database.

JMA conducted a landscape classification analysis for the Roaring Brook Wind Farm Project Area to define the locations and limits of local habitat zones and determine their distribution relative to the proposed Project layout. JMA's landscape analysis is based on explicit landform definitions and the precision of digital raster data within a GIS. The environmental classification model presented in Funk (1993) divides the landscape into three environmental zones: Valley Floor, Valley Walls, and Interfluves (Uplands). The Project Area is located entirely within Funk's Interfluve/Upland environmental zone. Funk's (1993) classification further divides environmental zones into local habitats based on landform types, elements, and hydrologic conditions. Within the Interfluve/Upland environmental zone, Funk (1993:71) defines six local habitats:

1. Summit knolls and ridges (no associated streams)
2. Saddles between knolls and ridges (no associated streams)
3. Near stream headwaters on banks and benches
 - a. On saddles
 - b. On knolls
4. Near bogs, swamps, ponds at stream headwaters on saddles between knolls and ridges
5. "Rockshelters"
6. Near springs on saddles between knolls and ridges

The landscape classification model presented by Funk (1993:71) required some minor modification to be applicable to the Roaring Brook Wind Farm Project Area. Local habitat 6 proved to be particularly problematic. JMA was unable to identify digital data that provided specific locations for springs within the Project Area. Because springs are located near the headwaters of streams JMA determined that for the purpose of the Project GIS model, springs are considered to be included within local habitat 3 (i.e., near stream headwaters). When distinguishing the local habitats as defined by Funk (1993), JMA also determined that the Project Area included some habitat areas that were not accounted for within Funk's landscape model. These areas include:

- areas near stream headwaters on ridges
- areas near bogs, swamps, and ponds on knolls and ridges

Because of these discrepancies between Funk's (1993) local habitats and those defined in the Project GIS model, JMA decided that the overriding environmental factor (i.e., proximity to water in local habitats 3 and 4) would be the determinant for each specific local habitat. Thus, within local habitat 4 (i.e., near bogs, swamps, and ponds), "on knolls" and "on saddles" were added as sub-categories.

Local habitat 5 (“Rockshelters”) was defined as those portions of the Project Area where slopes exceed 12%. Slopes within the project area are controlled for the most part by the erosion and deposition of glacial landforms and to a lesser degree underlying bedrock formations. The glacial landforms in the Project Area include numerous northwest/southeast trending low knolls of glacial till. These are similar to drumlins. Areas with slopes greater than 12% within the Project Area possibly include rock or boulder outcrops or overhangs and therefore have the potential to include rockshelters.

These minor modifications to Funk’s landscape classification scheme allowed all of the specific local habitats identified within the Project Area to be fully accounted for in the Project GIS model. The revised landscape classification model used for the Project includes the following local habitats or landscape classifications (*modifications from Funk 1993:71 in italics*):

1. Summit knolls and ridges with no associated streams.
2. Saddles between knolls and ridges with no associated streams.
3. Near stream headwaters and/or springs on banks and benches:
 - a. On saddles
 - b. On knolls
4. Near bogs, swamps, ponds, and/or wetlands:
 - a. *On saddles*
 - b. *On knolls*
5. *Steep slopes (>12%; i.e., “rockshelters”)*

The base data for the landscape classification model are the *Page, N.Y.* and *Sears Pond, N.Y.* 7.5-minute quadrangle Digital Elevation Models (DEM). Produced by the United States Geologic Survey (USGS), a DEM is a raster representation of the elevation of the Earth’s surface at a regularly spaced interval. In this case, the horizontal resolution of the DEMs used is 10x10meters. After creating a single elevation model from the adjoining DEM’s using the “mosaic” function in ArcGIS, the landscape area above 1300 ft was extracted. This area, which includes the all of the Project Area, represents the interfluve (or upland) environmental zone as described by Funk (1993).

The first step in the landscape classification analysis was to isolate the landforms described by Funk (1993). As described above, the upland environmental zone is divided into six local habitats using four landscape contexts; ridge, knoll, saddle, and steep slope. Using the terminology of MacMillan, McNabb, and Jones (2000), these four contexts can be subdivide into two groups, “landscape types” including ridges and knolls and “landscape elements” including saddles and steep slopes. Within the scope of “landscape types”, ridges and knolls were the first to be identified.

Identifying ridges and knolls required finding high points of elevation relative to a local neighborhood of elevations. To achieve this, a new DEM was created that encodes the average elevation for a 300-meter neighborhood around each 10x10 meter cell. This neighborhood size was chosen with some subjectivity for its desirable results based on the size of the overall study area, grid cell resolution, and elevation variation within the upland environmental zone. Using the “focal mean” function of ArcGIS, the resulting raster is an averaged landscape that when subtracted from the original DEM creates a raster layer which encodes areas, based on a 300-meter rectangular neighborhood, of average elevation as the value 0, greater than average elevation as values >0, and less than average elevation as values <0. From this layer, ridges and knolls were further defined from areas that were greater than 2 meters above the average local elevation.

Knolls are defined by the USGS's *Geographic Names Information System (GNIS) Data User Guide: Appendix C* (Payne 1995) as “prominent elevation rising above the surrounding level of the Earth's surface; does not include pillars, ridges, or ranges”. As extracted from the raster layer of local average elevation, the “prominent elevation rise” of knolls required further definition to distinguish the knoll landform from its associated slopes and surrounding saddles. Two additional raster layers were created to aid in this definition. First, using a reclassification of the “slope_sa” function applied to the original DEM, a layer was created that represents steep slopes of the uplands where the slope is greater than or equal to 12%. Secondly, using the “focal mean” applied to the DEM, another layer is created that displays the variation in elevations within a 150-meter neighborhood around each 10x10 meter grid cell. This layer is utilized by observing the knickpoints within the histogram of slope variation and classifying the raster based on the knickpoint which represents the elevation change defining upland knolls, in this case 150x150 meter neighborhoods with ≥ 2 and ≤ 26 meters of elevation gain. Because the vast majority of the “knolls” in the Project Area are all similar glacial features, the analysis of slope change and local elevation can be applied with a relatively narrow definition. From these three raster layers a definition for knolls was created: areas > 2 meters above local elevation, based on 300 meter neighborhood, surrounded on two or more sides by steep slopes, based on slopes of $\geq 12\%$, and surrounded on one or more sides by consistently high elevation gain, based on 150 meter neighborhood. The resulting raster, representing knolls within the Project Area, was converted into an ESRI shapefile.

Ridges were isolated using a similar technique. According to the USGS GNIS (1995) definition, ridges are “elevation with a narrow, elongated crest which can be part of a hill or mountain.” Within the Project Area, ridges are created by large-scale geologic structures and form prominent features. The steep slope and average elevation gain over a 300-meter neighborhood raster layers were used to define the ridge. The definition for ridges is based on the high elevation elongated crests bordered by parallel areas of $\geq 12\%$ slope. After isolating these features, the resulting ridge raster layer was converted into an ESRI shapefile. While ridges exist within the extent of the *Page* and *Sears Pond* topographic quadrangles, none are defined within the Project Area.

Finally, saddle features are defined by the USGS GNIS (1995) as “low point or opening between hills or mountains or in a ridge or mountain range.” Given that Funk's (1993) classification incorporates only ridges, knolls, steep slopes, and saddles, all areas that fall between ridges and knolls which are not $\geq 12\%$ slope were concluded to be saddles. The ridges, knolls, and steep slopes shapefiles were simply outlined, using the “union” geoprocessing function, on top of the upland study area and encoded as such, with the remaining area coded as saddle. The “union” process was repeated with the hydrologic features described below to create the final classification.

The hydrologic features used in the landscape classification analysis are derived from the New York State Office of Cyber Security & Critical Infrastructure Coordination (CSCIC). In following Funk's (1993:70) definition of “near” and “back from” streams, all channelized water courses were buffered 100 meters from the centerline. The same process was run on non-flowing water bodies (marshes, bogs, swamps) to create the areas which are combined with the ridges, knolls, and saddles to create local habitats. The “union” geoprocessing function was run with the results from the landscape types and elements and both streams and wetlands to create the final landscape classification. The results of the GIS landscape classification analysis are summarized in Table 4 and depicted on Figure 10.

Table 4. GIS landscape classification analysis for the Roaring Brook Wind Farm.

Landscape Classification Code	Landscape Classification Description	Project Area (Acres)	Project Area (% of Total)
1	Knoll - no associated water	220	6%
2	Saddle - no associated water	759	19%
3a	Saddle - near stream	102	3%
3b	Knoll - near stream	3	<1%
4a	Saddle - near wetland	2773	70%
4b	Knoll - near wetland	111	3%
5	Steep slopes (>12%)	9	<1%
ALL	ALL	3977 acres	100%

4.2 PHASE 1B ARCHEOLOGICAL SURVEY RESEARCH DESIGN

The Phase 1B archeological survey methodology presented here follows the approach recommended in the SHPO *Guidelines* issued in January 2006 (OPRHP 2006). This approach entails determining the acreage of the Project's APE for archeological purposes, identifying the appropriate level of effort (LOE) to conduct an adequate archeological survey for an APE of that size, and then concentrating that effort within a selected sample of areas within the APE subdivided amongst the landscape classification zones identified in the GIS model. Table 5 provides the archeological APE for each of the types of Project components.

Table 5. Archeological area of potential effect (APE) for the Roaring Brook Wind Farm.

Project Component	Archeological Area of Potential Effect (APE)	Archeological Survey Acreage	Equivalent # of shovel tests (16 shovel tests/acre)
39 wind turbines	2 acres/wind turbine	78 acres	1244 shovel tests
4 miles of new access roads	36-foot wide corridor	17 acres	275 shovel tests
11 miles of existing logging roads to be improved	16-foot wide corridor	20 acres	315 shovel tests
16 miles interconnects (interconnect layout to be determined)	15-foot-wide corridor	TBD	TBD
	TOTAL	115 acres	1834 shovel tests

Wind Turbines. The Project includes 39 proposed wind turbines. Clearing, grading, excavation and installation of each wind turbine will require ground disturbance of up to approximately two (2) acres.

Access Roads. The Project includes approximately 15 miles of access roads. Each wind turbine will require a permanent 16-foot-wide access road to be constructed of crushed stone. During construction operations and installation of the wind turbines, portions of these roads could require a wider clearance (approximately 10 feet on either side of the permanent road) to accommodate the crane and/or turbine components. The maximum width of the area of disturbance for these roads is 36 feet. Approximately 4 miles of new roads are proposed for the Project (see Figures 8 and 10).

An existing network of unpaved logging/access roads already exists within the Project Area (see Photographs 4-5; Figure 8). These roads have been cleared, stripped, and graded and in some cases are already paved with crushed stone. Approximately 11 miles of this existing road network (see Figure 10) will be improved for use as access roads for the Project. Although the width and condition of these roads is variable, on average the existing roads are 20-25 feet wide. For the purposes of preparing the Phase 1B research design, JMA has utilized a conservative estimate of the existing road widths of 20 feet. Portions of these roads may be improved up to maximum total widths of 36 feet.

The archeological APE for the disturbance associated with these road improvements is therefore a 16-foot-wide corridor (see Table 5).

Interconnects. The Project will include approximately 16 miles of underground electrical interconnects. The approximate width of the necessary right-of-way (ROW) for operation of the machinery used to install these interconnects will not exceed 15 feet. The layout for the Project interconnection system has not yet been determined. It is anticipated that a significant portion of the ROWs associated with electrical interconnects will be subsumed within the ROWs for proposed and/or improved access roads. The interconnect layout will need to be incorporated into the Phase 1B research design prior to the conduct of the Phase 1B archeological survey fieldwork, and the level of effort (i.e., number of shovel tests) conducted within each landscape classification “local habitat” will need to be modified accordingly.

Table 6 presents the archeological APE associated with each type of Project component sub-divided amongst the various local habitats identified in the landscape classification analysis. The relationship of the proposed Project layout to these local habitats is depicted in Figure 10. The analysis presented in Table 6 and Figure 10 provides the research design for the Phase 1B Archeological Survey.

Table 6. Phase 1B archeological survey research design³.

Landscape Classification Code	Landscape Classification Description	Wind Turbines (Acres)	New Access Roads (Acres)	Existing Roads to be Improved (Acres)	Electrical Interconnects (Acres)	Total Archeological APE (Acres)	Equivalent # of Shovel Tests (16/acre)
1	Knoll - no associated water	20.36	5.27	2.85	TBD	28.48	456
2	Saddle - no associated water	30.39	8.12	5.63	TBD	44.14	706
3a	Saddle - near stream	0.25	0.00	0.37	TBD	0.62	10
3b	Knoll - near stream	0.87	0.22	0.05	TBD	1.14	18
4a	Saddle - near wetland	17.59	1.67	9.27	TBD	28.52	456
4b	Knoll - near wetland	7.06	1.68	1.52	TBD	10.26	164
5	Steep slopes (>12%)	1.23	0.24	0.01	TBD	1.48	24
ALL	ALL	77.74	17.20	19.69	TBD	114.63	1834

Locations for intensive archeological testing will be selected in the field at the discretion of the Principal Archeologist from among the local habitats and archeological APE areas identified in Figure 10. The Principal Archeologist will prioritize archeological testing in the vicinity of the map-documented structures located within the Project Area identified in Section 3.3 and depicted on Figure 9.

In the portions of the archeological APE selected for survey, shovel tests will be excavated in a pattern of close-interval testing (approximately 5-meter spacing) to provide for intensive survey of a sample of the APE. Soil excavated from shovel tests will be passed through one-quarter inch hardware cloth to ensure uniform recovery of artifacts. Notes and a soil profile for each shovel test will be recorded on pre-printed standardized forms. The location of all subsurface tests, and the locations of artifacts recovered from the surface will be recorded with a GPS point and plotted on a map of the Project Area. Recovered artifacts will be placed in bags marked with standard provenience information and returned to the laboratory for processing. Throughout the archeological testing, field activities will be photographed, and field notes will record the methods and results of all testing. The locations of any archeological sites identified during the Phase 1B survey will also be recorded with a GPS point.

³ Prior to the Phase 1B survey, the total archeological APE and corresponding level of effort (number of shovel tests) will be modified (as appropriate) to include the ROWs for the electrical interconnect system.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 ARCHEOLOGICAL RESOURCES

NYSM Site 7112 is the only previously identified Native American archeological site located within five miles of the Project Area. The site consists of “traces of occupation”, which implies a broad area from which Native American artifacts have been recovered or reported. NYSM Site 7112 includes an approximately two-mile-long area located approximately 3.5 miles east-northeast of the Project Area, along a hill side overlooking West Martinsburg. The relative lack of previously recorded Native American archeological sites within the Study Area may not reflect the actual distribution of archeological sites in the region. The Buckingham site (NYSM 9098) is the location of an isolated find (a ground-stone axe) found on Tug Hill in an environmental setting very similar to the Roaring Brook Wind Farm Project Area. Native American archeological sites are also recorded along the lower stretches of the drainages whose headwaters rise within the Project Area. In general, the rocky and wet landscape within the Project Area is relatively inhospitable. Any possible Native American activity in the vicinity would have been limited to short term hunting or foraging, resulting in small and ephemeral archeological sites.

Historical maps and atlases identify the locations of a ca. 1870s saw mill and a ca. 1906 unidentified structure (likely a logging or hunting camp) within the Project Area. Archeological features or artifact deposits associated with these map-documented structures may be located within the Project Area. Because the Project Area has never been farmed or otherwise settled, it is relatively unlikely that any other structural remains or features (that are not related to the practice of logging) are located within the Project Area.

5.2 HISTORIC AND ARCHITECTURAL RESOURCES

There are four previously recorded historic properties within the five-mile Study Area that have been determined to be eligible for listing on the National and State Registers of Historic Places. There is one additional property listed in the OPRHP Building Structure Inventory which is located within the Study Area but has not been formally evaluated for S/NRHP eligibility. Only two of these properties are within the topographic and vegetative viewsheds for the Project (see Section 2.2.2; Table 3; Figures 2-3). These properties include St. Patrick’s Cemetery on Maple Ridge Road in the Town of Martinsburg (OPRHP 04911.000084) and an abandoned house at 2705 Rector Road in the Town of Montague (OPRHP 04912.000063). The other three previously identified historic properties are not located within the topographic viewshed for the Project; the Project will not be visible from these remaining three properties.

More specific conclusions regarding potential visual impacts to historic or architecturally significant properties within the Study Area will be provided in the *Historic-Architectural Resources Survey Report* which is currently being prepared for the Project.

5.3 RECOMMENDATIONS

In the opinion of JMA, a Phase 1B archeological survey will be necessary to determine with certainty whether any archeological sites are present within the Project’s archeological Area of Potential Effect. The Phase 1B survey should be conducted in accordance with the SHPO *Guidelines* and the research design presented in Section 4.2 of this report. Upon completion of the Phase 1B archeological fieldwork, a report summarizing all findings and recommendations should be prepared in accordance with the *New York State Historic Preservation Office (SHPO)*

Phase 1 Archaeological Report Format Requirements issued in April 2005. The report should describe the archeological testing strategy; provide a description of existing conditions and summarize relevant background information; discuss the methods used in the field and to process recovered artifacts; include maps depicting the locations of all shovel tested areas; describe what was found; and evaluate the significance (to the extent possible) of what was found. The report should be supplemented with an inventory of recovered artifacts. In accordance with the SHPO *Guidelines*, GPS points for any sites identified during the Phase 1B survey and GIS data locating the boundaries of all archeologically tested areas will also need to be provided to OPRHP.

In the opinion of JMA, a historic-architectural survey of the Project viewshed within the limits of the five-mile Study Area will be necessary to determine whether any historic or architecturally significant properties could be affected by the Project. The SHPO *Guidelines* request that the cultural resources consultant participate in a meeting with OPRHP following completion of the field survey and preliminary significance evaluation for structures located within one mile of the project. Following this meeting, the SHPO *Guidelines* request that the consultant complete the field survey and preliminary significance evaluation for all structures located within five miles of the Project. The SHPO *Guidelines* specify that OPRHP would like to receive the results of the historic-architecture survey in a standardized electronic format. Historic-architectural survey data should be provided to OPRHP in an approved database format with GPS coordinates for each inventoried structure.

JMA has undertaken a historic-architectural resources survey for the Project which was conducted in accordance with the SHPO *Guidelines*. The results and conclusions of the historic-architectural resources survey are presented in a separate report.

The proposed Project will also include the construction of a 34.5 kV electrical interconnection line and substation/point of interconnection facility. After the precise route of the interconnection line has been finalized, JMA recommends that additional Phase 1 survey work be conducted to address any cultural resources concerns associated with the proposed interconnection line and substation.

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FIGURES

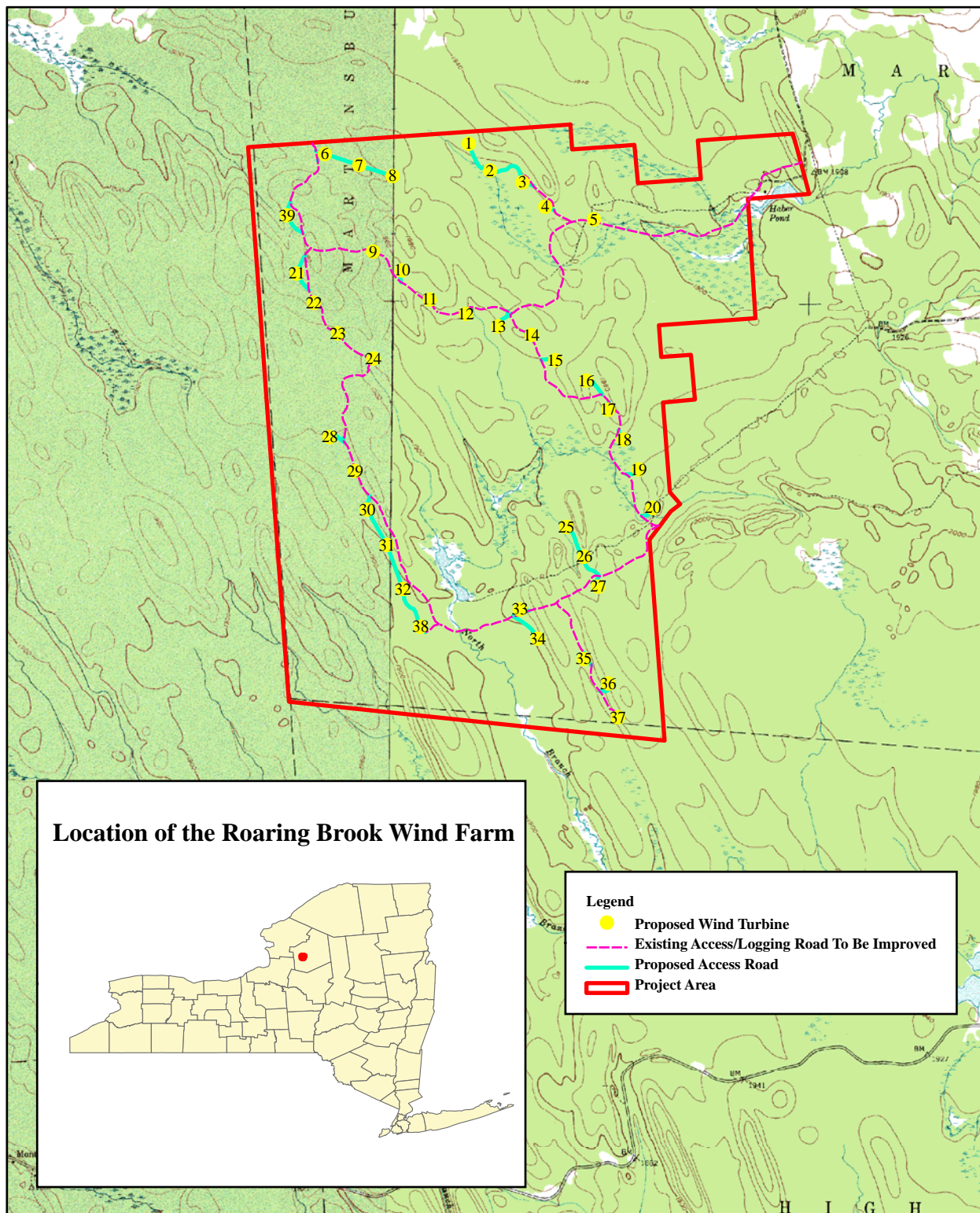


Figure 1. Project Area location and proposed wind-turbine generator layout for the Roaring Brook Wind Farm.

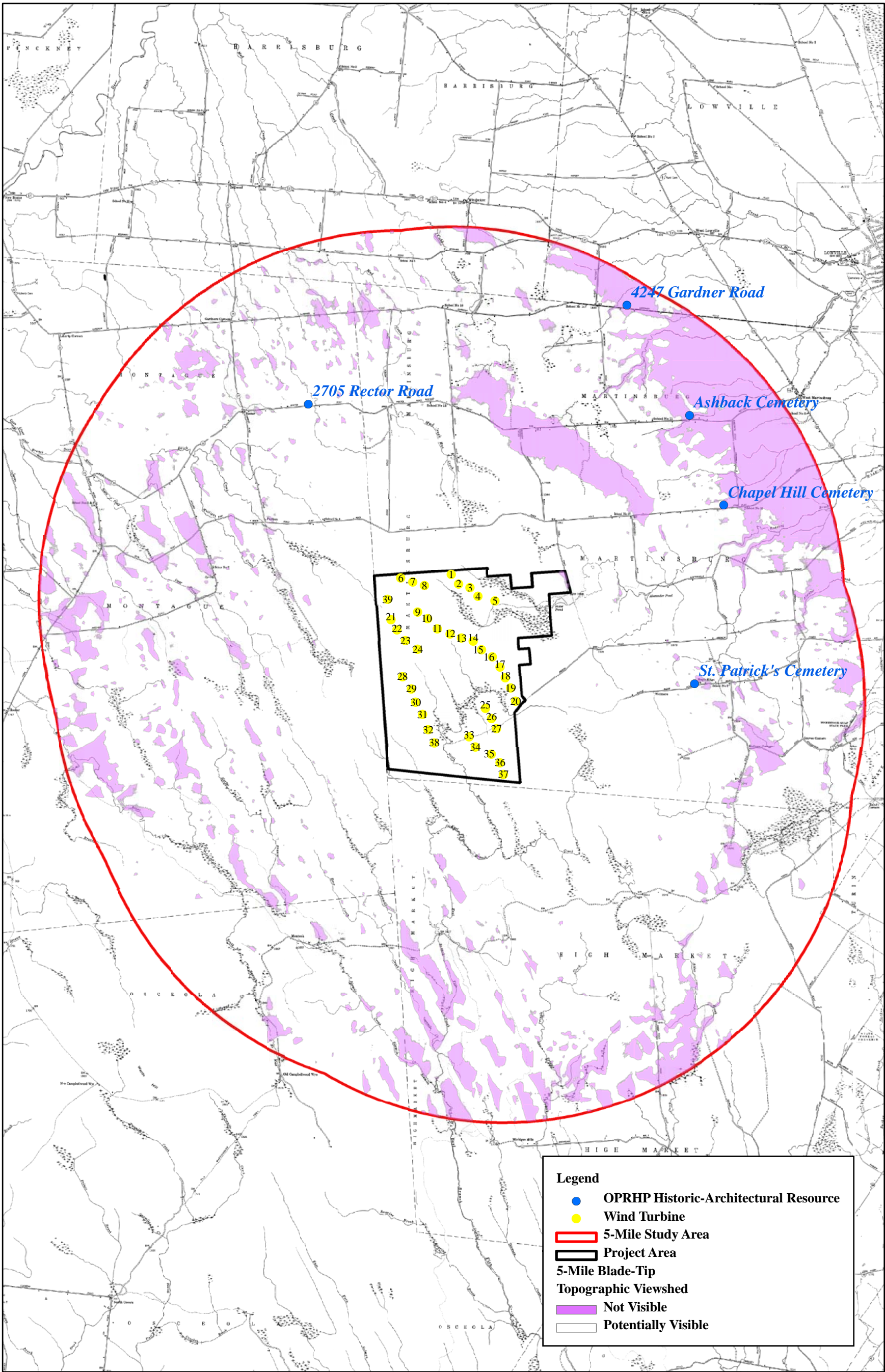
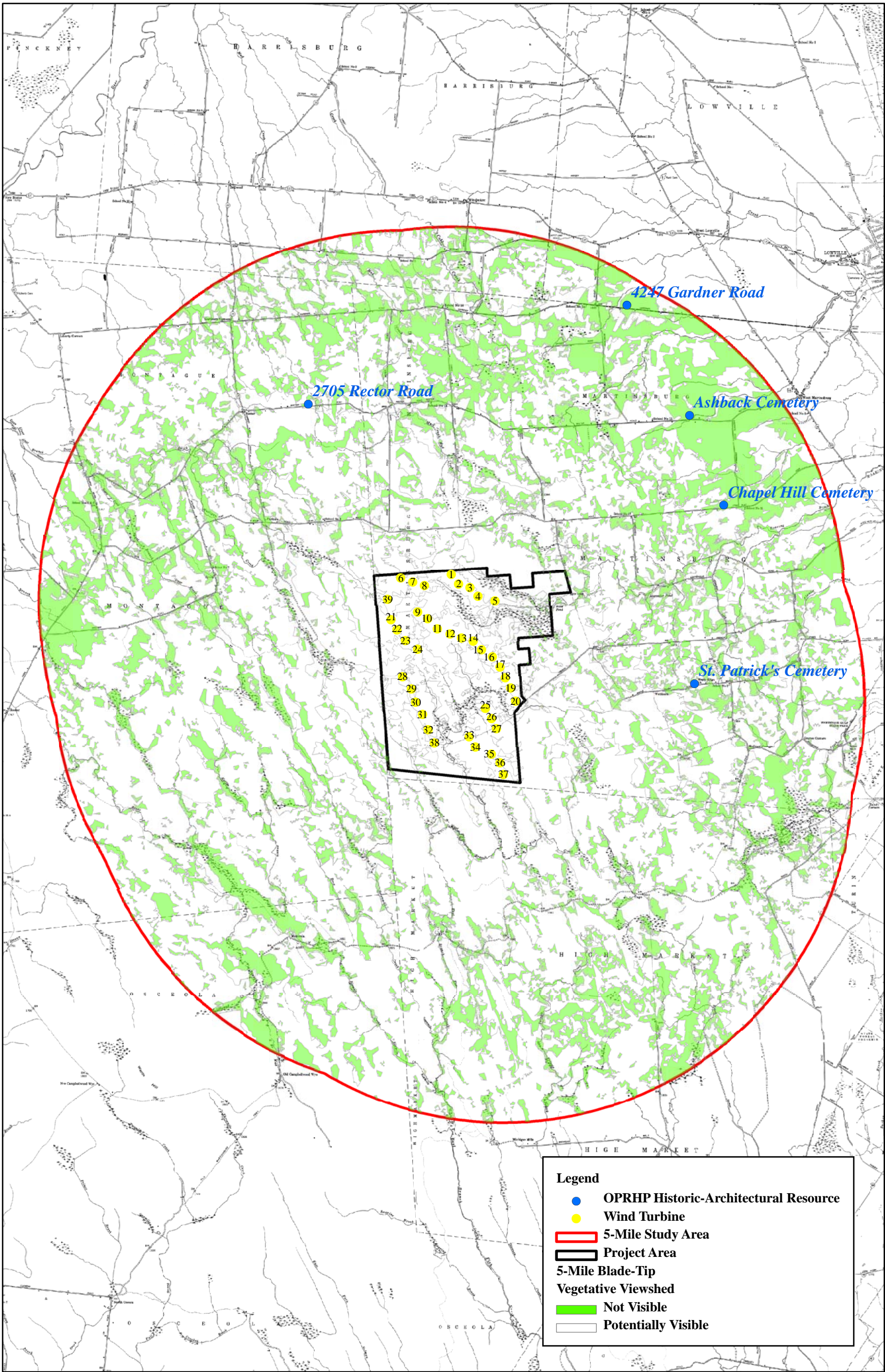


Figure 2. NYSDOT quadrangles showing the location of the Roaring Brook Wind Farm, topographic viewshed, 5-mile Study Area, and previously identified historic-architectural resources.



JMA architects
archeologists
planners
John Miner Associates, Inc.

0 0.5 1 2 Miles
0 1.25 2.5 5 Kilometers

Figure 3. NYSDOT quadrangles showing the location of the Roaring Brook Wind Farm, topographic and vegetative viewshed, 5-mile Study Area, and previously identified historic-architectural resources.

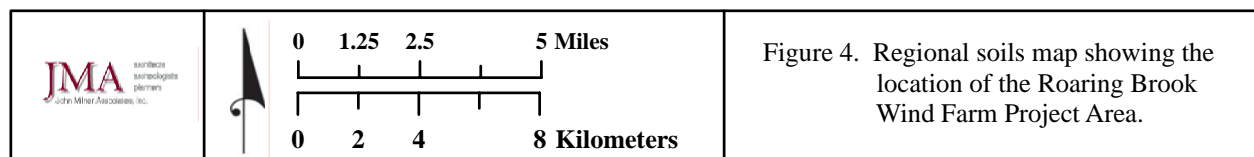
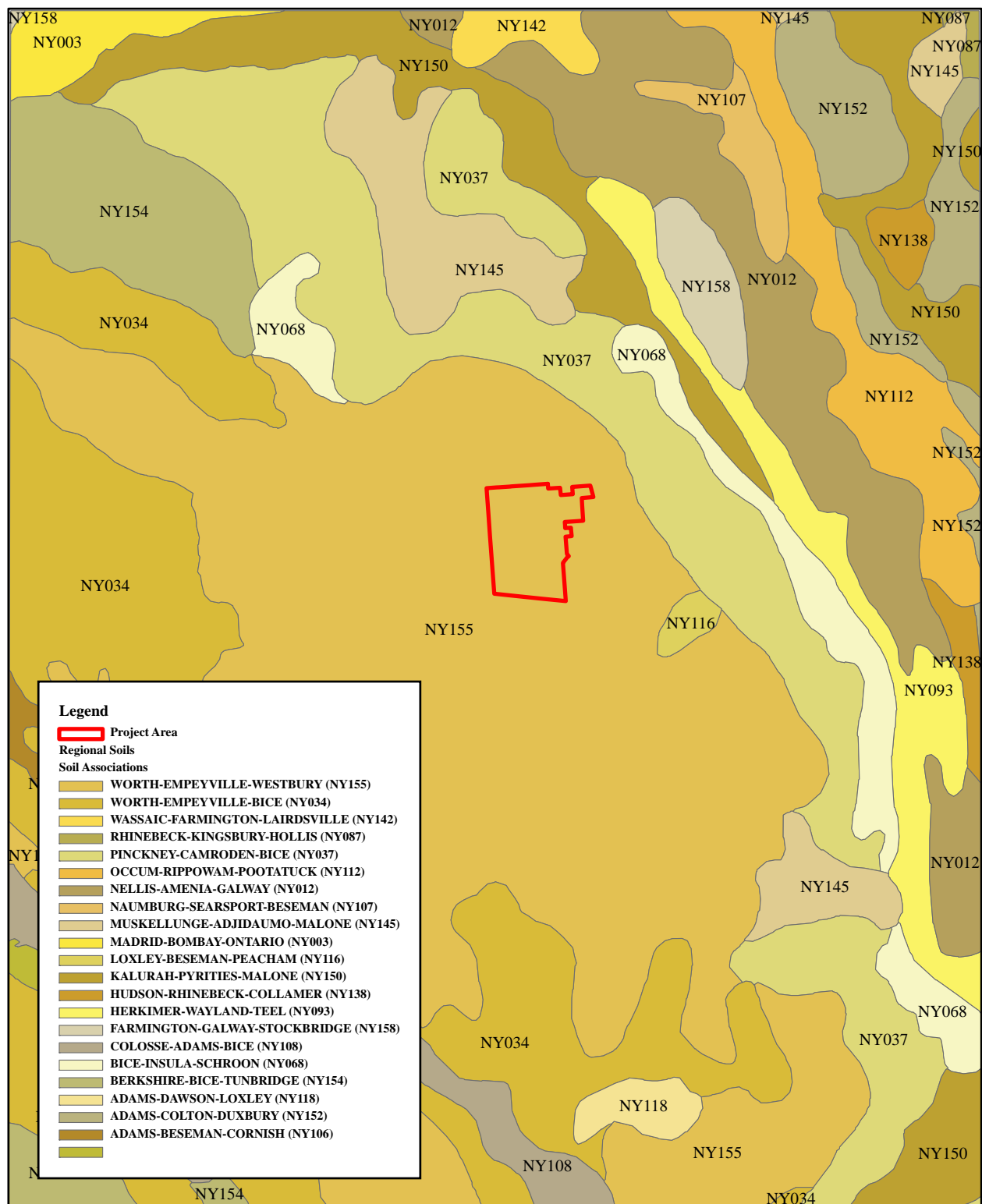


Figure 4. Regional soils map showing the location of the Roaring Brook Wind Farm Project Area.

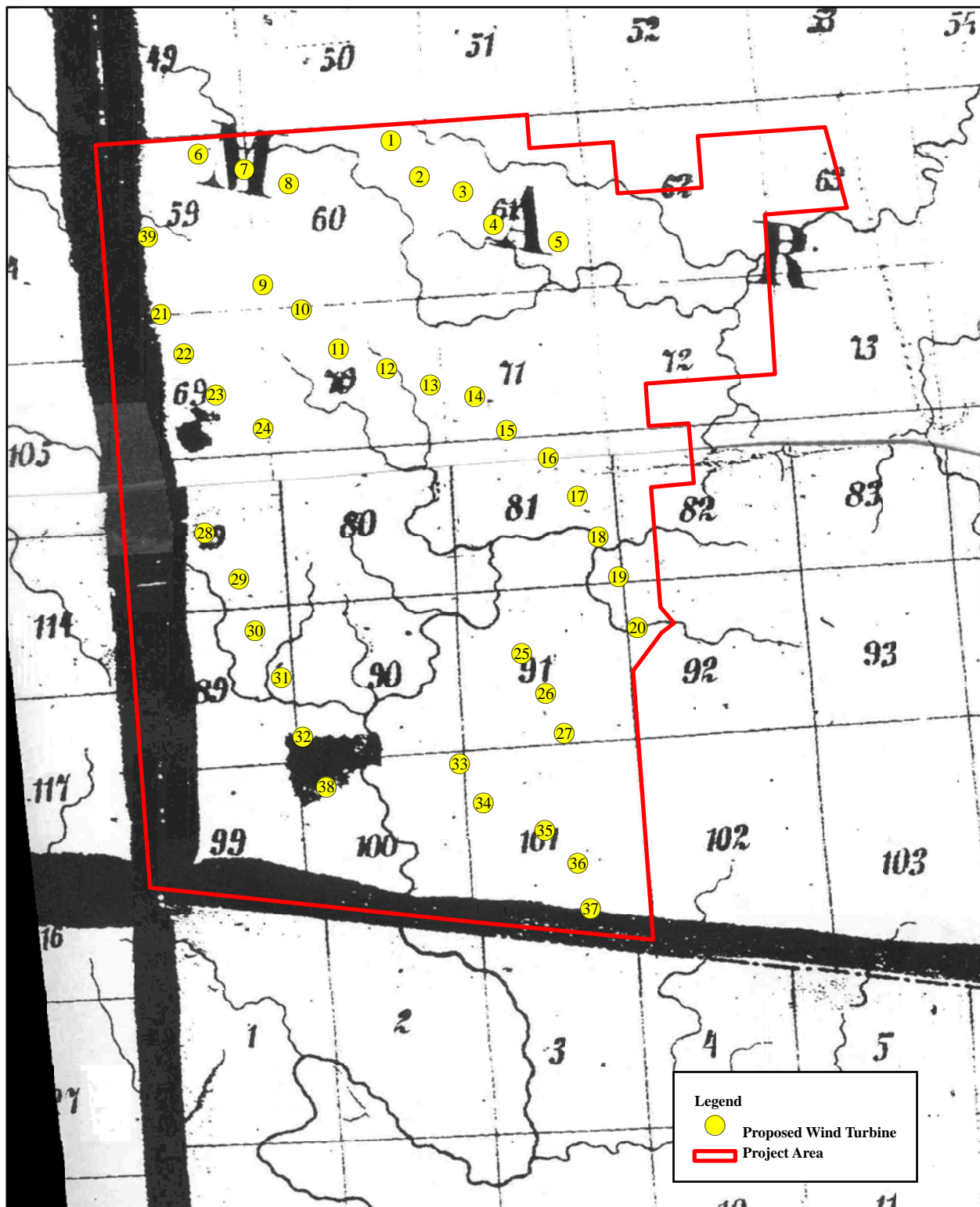
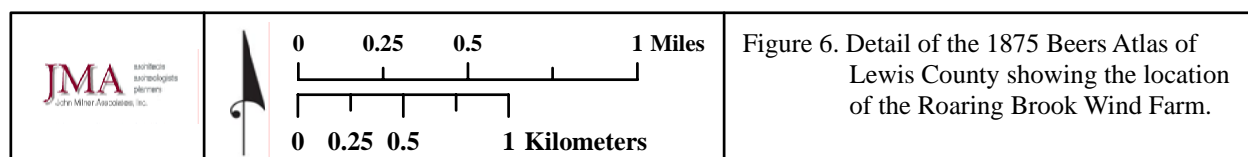
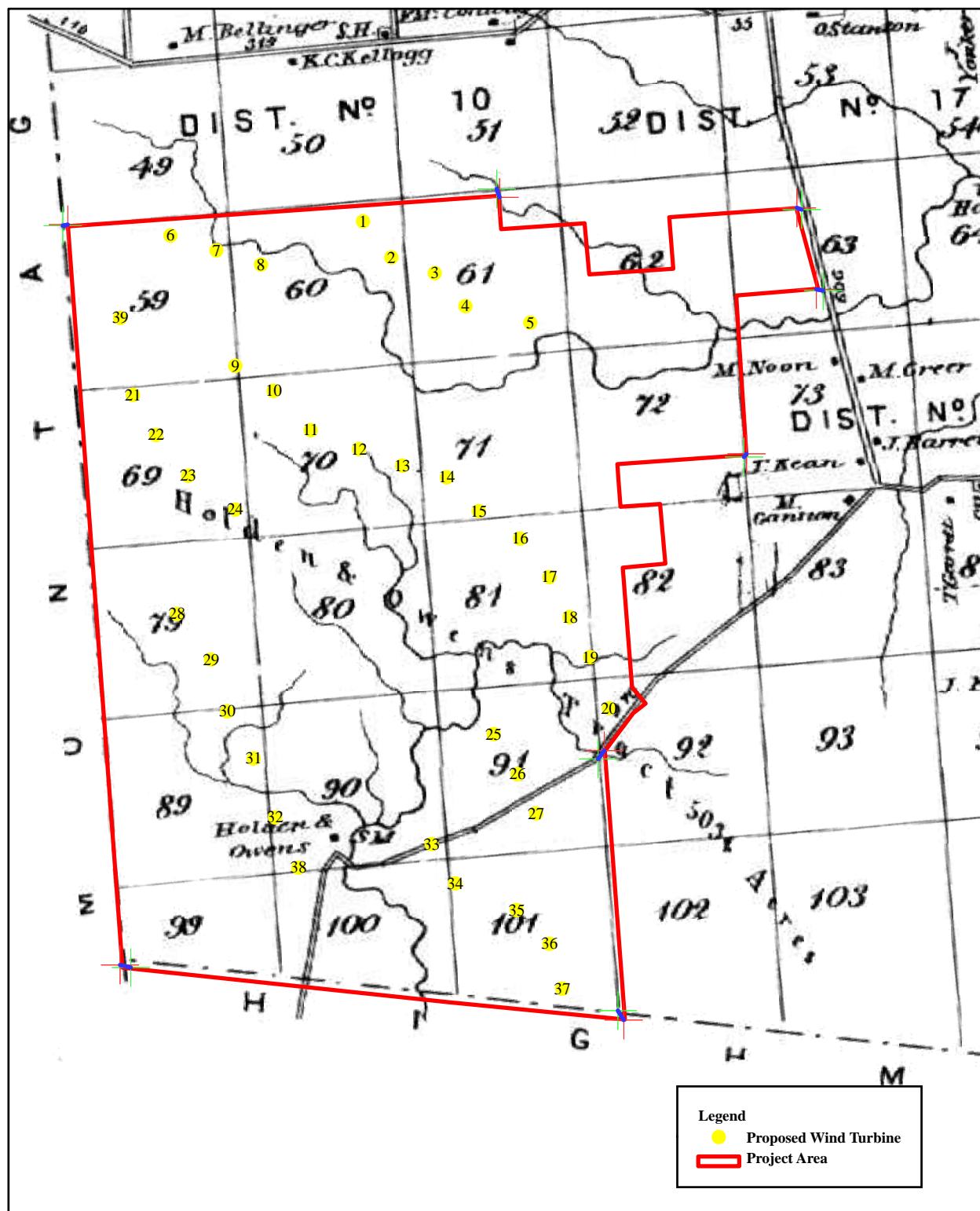
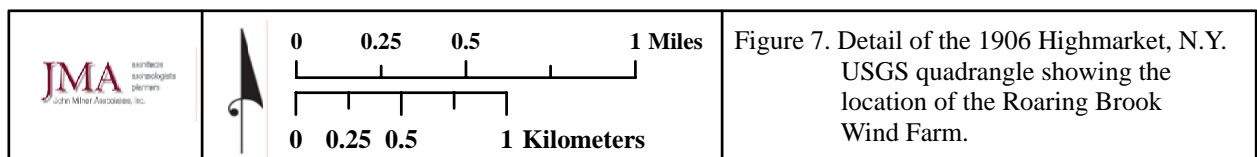
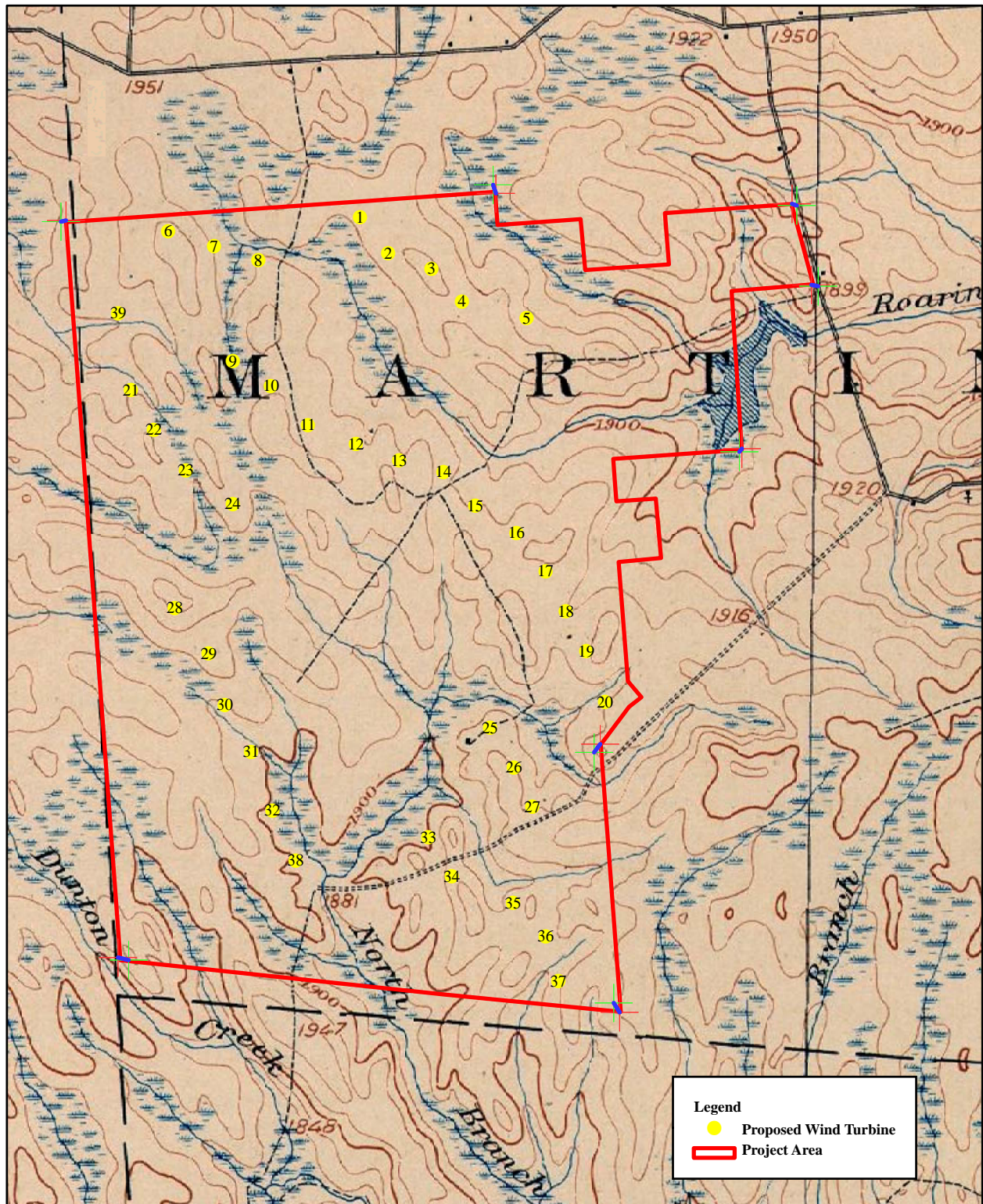


Figure 5. Detail of the 1857 Ligowski Topographical Map of Lewis County showing the location of the Roaring Brook Wind Farm.





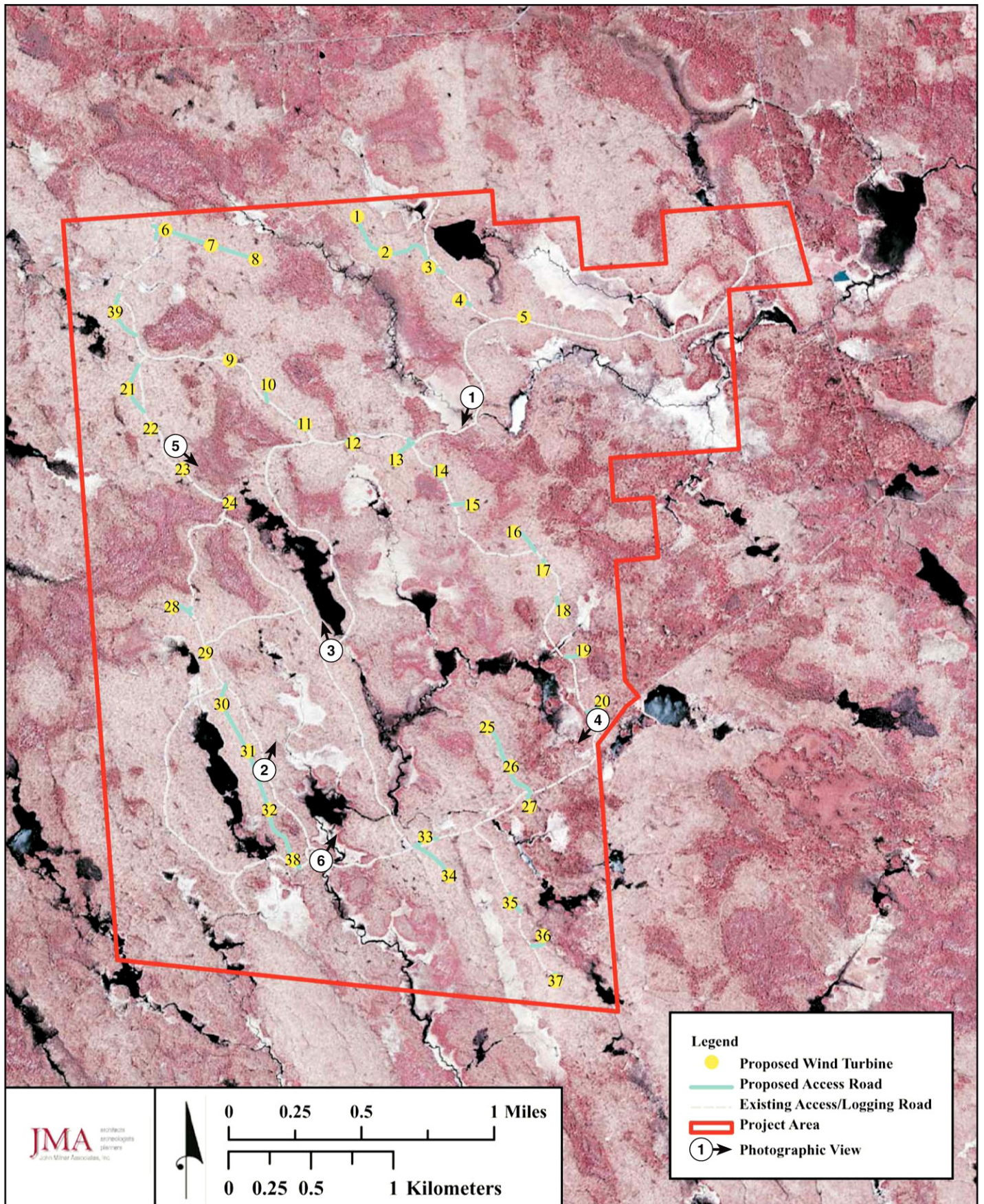


Figure 8. 2003 infra-red orthophotography showing existing conditions within the Roaring Brook Wind Farm Project Area, with the locations and orientations of photographic views referenced in the report.

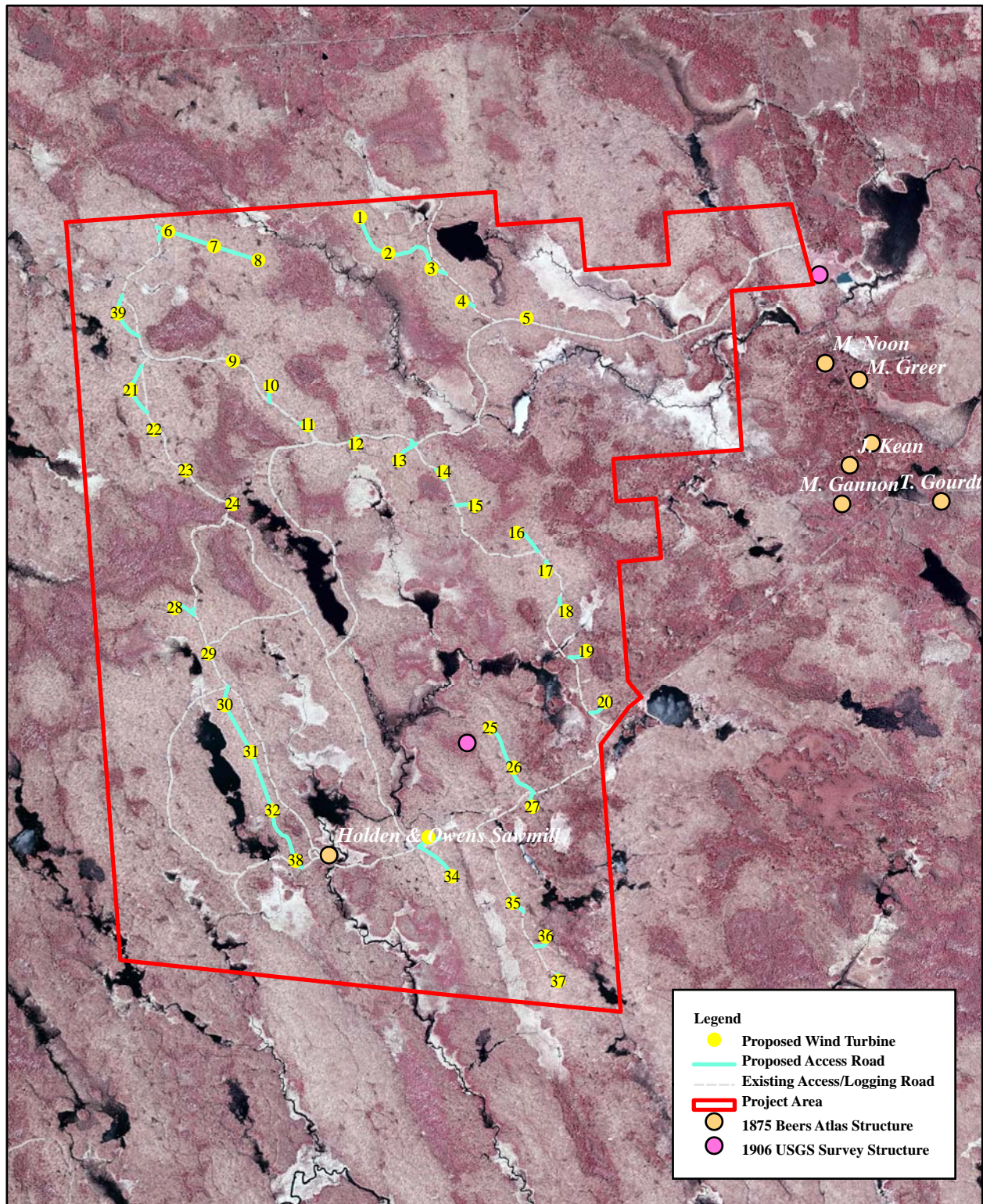


Figure 9. Locations of structures depicted on the 1875 Beers Atlas and 1906 USGS quadrangle within the Roaring Brook Wind Farm Project Area.

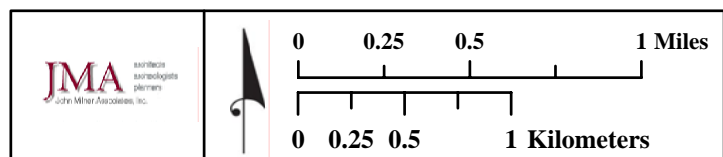
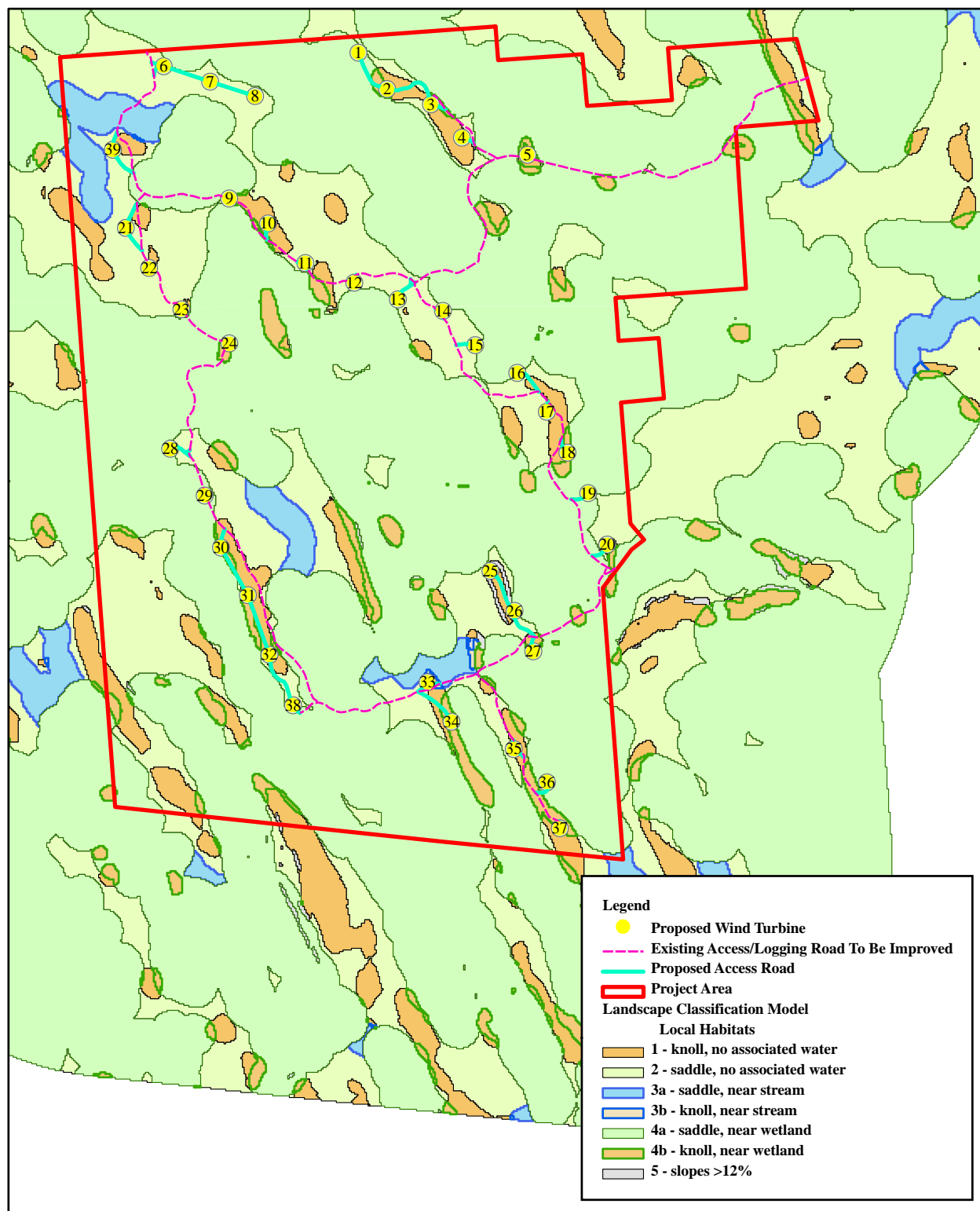


Figure 10. GIS landscape classification analysis for the Roaring Brook Wind Farm Project Area.

PHOTOGRAPHS



Photograph 1. Representative landscape within the northeastern part of the Project Area; view south.



Photograph 2. Representative landscape within the southwestern part of the Project Area; view northeast.



Photograph 3. Representative landscape within the central part of the Project Area; view north.



Photograph 4. Existing logging road within the southeastern part of the Project Area; view southwest.



Photograph 5. Existing logging road within the northwestern part of the Project Area; view southeast.



Photograph 6. Possible remnant millpond along the headwaters of Fish Creek in the southern part of the Project Area; view north-northeast.