The 2013 Stage 2 Archaeological Assessment of the Proposed Switchyard for the Grand Bend Wind Farm Lot 1, Concession 3SHR, Tuckersmith Geographic Township, Municipality of Huron East, FIT Contract # F-002178-WIN-130-601, Huron County, Ontario

D.R. Poulton & Associates Inc.

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Executive Summary

As stated on page 1 of this report, Grand Bend Wind Limited Partnership c/o Northland Power Inc. is proposing to construct a wind farm north of Grand Bend. It will involve the construction of 48 wind turbines and related access roads, construction areas, turbine pads, collector and transmission lines. The proposed development has been designated FIT Contract # F-002178-WIN-130-601.

As described on page 2 of the report, the proposed wind farm is spread out over a number of lots and concessions within the southern portion of the County of Huron. A short segment of the proposed 230 kV Transmission Line falls within the west edge of Perth County, in Hibbert Township. It forms part of the Municipalities of South Huron and Bluewater. The proposed Grand Bend Wind Farm is subject to the Renewable Energy Approval (REA) process (O. Reg. 359/09) and to the provisions of the Ontario Green Energy Act (Government of Ontario 2009).

Pages 1-3 of the report describe the events leading up to the May 2013 archaeological survey of the proposed switchyard for the Grand Bend Wind Farm. Briefly, as described therein, in 2011, Neegan Burnside Ltd. contracted D. R. Poulton & Associates Inc. (DPA) to conduct a Stage 1-2 assessment of the proposed Grand Bend Wind Farm. The Stage 1 background research and Stage 2 field survey were undertaken in the spring and summer of 2012 and a report on the archaeological assessment was submitted to the Ministry of Culture, Tourism and Sport on August 17, 2012 (PIF 316-145-2011). The report was reviewed and accepted into the Ontario Public Register of Archaeological Reports on September 12, 2012.

Subsequent to the acceptance of the report, minor changes and additions were made to the layout of the proposed Grand Wind Farm. Namely, two meteorological towers and a construction compound were added, and the proposed site of Turbine 21 was repositioned. The Stage 2 report on this additional survey was submitted to the Ministry of Culture, Tourism and Sport on December 14, 2012 (PIF 316-165-2012). It was reviewed and accepted into the Ontario Public Register of Archaeological Reports on January 25, 2013.

The proposed switchyard was not available for survey until 2013, and the recommendation detailed in the original Stage 1-2 report (DPA 2012a) that concerned the assessment of the 230 kV Transmission Line adjacent to the Hensall Union Cemetery also remained to be addressed. They are addressed in this report.

A cultural synthesis of the region within which the proposed wind farm and switchyard are located is presented in pages 3-9 of the report. Information on past archaeological investigations in the area of the proposed Grand Bend Wind Farm and the proposed switchyard are detailed in Sections 1.2 and 1.3 of the report (pages 3, 9-10). As it evolves, there were no past archaeological survey or documented sites within the proposed switchyard. However, five archaeological sites had been documented within the study area for the proposed wind farm prior to the 2011-2013 assessment (*c.f.* page 10).

Conditions within the proposed switchyard are described in pages 10-11 of the report, and in the description of the survey (*c.f.* page 16). As described therein, the proposed switchyard is situated

within an agricultural field. The location also has two existing overhead hydro transmission lines: a 115 kV line; and a 230 kV line.

As detailed in Section 2.0 of this report (pages 12-13), the Stage 2 assessment of the proposed switchyard was undertaken by a crew of two on May 28, 2013 under the direction of Sherri Pearce (Licence #P316). The Stage 2 assessment was conducted at a five-metre interval and involved a systematic pedestrian survey. The survey covered 100% of the lands that would be subject to impact from the proposed construction of the switchyard for the Grand Bend Wind Farm; it also included a larger buffer surrounding the proposed switchyard.

Section 3.0 of the report (page 14) details the Records of Finds for the assessment, and the results of the survey of the proposed switchyard are detailed in Section 4.0. As stated in the latter section, no sites were discovered during survey (*c.f.* page 15).

As stated on page 16 of the report, the main focus of this report is the May 2013 Stage 2 archaeological assessment of the proposed switchyard for the Grand Bend Wind Farm. However, it should be noted that the Stage 1-2 report of August 17, 2012 (DPA 2012a: 51-52) included a recommendation for a more detailed Stage 3 assessment of the segment of the proposed 230 kV Transmission Line that is to extend east-west just north of the Hensall Union Cemetery. The cemetery is located on the south side of Rodgerville Road, east of Highway 4.

At the time the August 2012 report was prepared, it remained to be determined if the transmission line would be a buried cable or would be constructed on above-ground poles. Either way, the plan was to construct the line within the southern portion of the road right-way. It has since been determined that the proposed 230 kV Transmission Line will be in the gravel shoulder along the north side of Rodgerville Road, opposite the cemetery, not adjacent to it. As the north shoulder of Rogerville Road has been disturbed by past road construction and is across the road from the cemetery, this alignment is not considered to have a potential for archaeological remains or for unmarked graves. Figure 6 shows the location of the proposed 230 kV Transmission Line in the vicinity of the Hensall Union Cemetery.

As stated on page 16 of the report, the 2013 archaeological assessment of the proposed Grand Bend Wind Farm resulted in two recommendations. The first recommendation is that in the absence of any archaeological remains, there are no outstanding archaeological planning concerns for the proposed switchyard for the Grand Bend Wind Farm. The second recommendation is that in the absence of any potential for unmarked graves, no further archaeological investigations or concerns are warranted for the segment of the proposed 230 kV Transmission Line to the north of the Hensall Union Cemetery.

1.0 PROJECT CONTEXT

The 2011 Standards and Guidelines for Consultant Archaeologists define up to four sequential stages in an archaeological assessment. Stage 1 consists of background research to identify any past archaeological investigations or known sites. The background study also identifies the potential for as-yet undiscovered sites. Stage 2 consists of a field survey to confirm the presence or absence of archaeological sites. Stage 3 consists of a more detailed assessment of any sites that are of demonstrable or potential significance as heritage resources and planning concerns. Finally, Stage 4 consists of the mitigation of significant sites either by avoidance and preservation or by the implementation of salvage excavations.

Standard 3 of Section 7.2 of the Standards and Guidelines (Ministry of Tourism and Culture 2011a: 115) states the following standard with respect to the reporting requirements for archaeological assessments: "*The final report must be filed in the form and manner as specified by the ministry in Section 7.5.*"

Standard 1 of Section 7.5 of the Standards and Guidelines (Ministry of Tourism and Culture 2011a: 121) further states the following standard with respect to the reporting requirements for archaeological assessments: "*All project reports must contain the sections listed in the first column of Table 7.1*." The present report is intended to conform in all respects to the reporting requirements of the 2011 Standards and Guidelines.

Section 7.5.5 of the Standards and Guidelines (Ibid: 124) requires that the Project Context section of each report include the context for the archaeological investigations and that it cover three basic topics: development context; historical context; and archaeological context. They are covered in the following three subsections presented below.

1.1 Development Context

The information contained in this section of the report is being presented to satisfy Standards 1, 2, and 3 that are set out in Section 7.5.6 of the Standards and Guidelines (Ibid: 124-125).

Grand Bend Wind Limited Partnership, c/o Northland Power Inc., is proposing to develop, construct and operate a 100 MW wind facility located north of Grand Bend, Ontario. The proposed Grand Bend Wind Farm is subject to the Renewable Energy Approval (REA) process (O.Reg. 359/09) and to the provisions of the *Ontario Green Energy Act* (Government of Ontario 2009). An application for approval for the proposed development is being prepared under Ontario Regulation 359/09 of the *Environmental Protection Act* (Government of Ontario 2012). The project is classified as a Class 4 Wind facility under the Regulation. The proposed development has been designated FIT Contract # F-002178-WIN-130-601.

The Grand Bend Wind Farm is located in Huron County (Figure 1). It spans portions of the lower tier municipalities of Bluewater and Huron South. Portions of the proposed transmission line also traverse the Municipality of Huron East in Huron County and the Municipality of West Perth in Perth County. The proposed wind farm covers portions of three geographic townships. From south to north, they are Stephen, Hay, and Stanley Townships in Huron County. A short

segment of the proposed 230 kV Transmission Line falls within the west edge of Perth County, in Hibbert Township.

The basic project components of the proposed wind farm will include up to 48 turbines (Siemens SWT-2.3-113 direct drive wind turbine generators with a total name plate capacity of 100 MW), turbine access roads, a 36 kV electrical connection system, and a new transmission line within municipal road rights-of-way along Rodgerville Road and Road 183. It will connect to the provincial power grid at the 230 kV Transmission Line south of the Seaforth Transformer Station, in the Municipality of Huron East. A switchyard will be constructed at this terminus. During construction, temporary components will include access roads and work/storage areas at the turbine locations and transmission connections, and a construction compound.

The proposed switchyard, which is the subject of this report, is located north of Road 183, in Lot 1, Concession 3 South of Huron Road, Tuckersmith Township, in the Municipality of East Huron. The switchyard is required at the connection point with the existing 230kV transmission line. The dimensions surveyed for the switchyard are discussed on page 12 of the report.

The standard concerning permission for access that is specified in the Standards and Guidelines is as follows: "*Provide statements that the landowner or landowner's representative (e.g. planner, engineer, lawyer) gave permission for the licensee to access the property to conduct all required archaeological fieldwork activities, including the recovery of artifacts, and state any limits placed on access (e.g. time limits, refusal of access to portions of property)*" (Ministry of Tourism and Culture 2011a, Section 7.5.6 Standard 3, page 125). In the present case, permission for access to conduct the archaeological survey and to remove and curate any artifacts that might be discovered was secured from the landowner in advance of the fieldwork.

The Ontario Ministry of Tourism, Culture and Sport designated the Stage 2 assessment as PIF #316-182-2013. The assessment was implemented under Archaeological Consulting License #P316, issued by the Province of Ontario to Sherri H. Pearce of D.R. Poulton and Associates Inc.; it was carried out under the direction of Sherri Pearce.

The assessment was conducted in accordance with the provisions of the *Ontario Heritage Act* (Government of Ontario RSO 1990a) and the *Green Energy Act* (Government of Ontario 2009). Finally, the assessment conformed to the Standards and Guidelines for Consultant Archaeologists (Ontario Ministry of Culture and Tourism 2011a).

Further to the above, the assessment was also conducted in accordance with the 2005 Provincial Policy Statement 2.6.2, which has provisions for the conservation of archaeological resources, a definition of the same, and provisions for archaeological assessments. Finally, it was conducted in accordance with the Ontario Ministry of Culture's 2006 Heritage Tool Kit, most particularly with respect to Infosheet #3 and Infosheet #6; they detail provisions for the conservation of archaeological resources and provisions for heritage impact statements, respectively.

Records pertaining to this project are currently housed in the corporate offices of D.R. Poulton & Associates Inc. If the opportunity permits, however, the project archive will be transferred to a suitable long-term repository. Potential repositories include local or other museums and the storage facilities maintained by the London office of the Ontario Ministry of Tourism, Culture and Sport.

1.2 Historical Context

Under the 2011 Standards and Guidelines, a required standard for the Historical Context section of a report is that, in documenting the rationale for the choice of fieldwork strategy or the recommendations that are being made, the report must include references to all other reports containing relevant information, including the title, author and PIF number (Ministry of Tourism and Culture 2011a: Section 7.5.7 Standard 2, page 125).

In the present case, the purpose of the May 28th 2013 survey was to confirm the presence or absence of archaeological sites that could represent possible constraints to the construction of the proposed switchyard of the Grand Bend Wind Farm. This report follows two previous reports concerning archaeological assessments of the proposed Grand Bend Wind Farms. The first of these was the report on the 2012 spring and summer Stage 1 – 2 assessment of the Grand Bend Wind Farm (PIF #P316-145-2011). The results of that assessment are documented in the report entitled *The 2011-2012 Stage 1-2 Archaeological Assessment of the Proposed Grand Bend Wind Farm, FIT Contract # F-002178-WIN-130-601, Municipalities of Bluewater, South Huron, & East Huron, Huron County and the Municipality of West Perth, Perth County, Ontario*. It was prepared by Dana R. Poulton, Rob Danter, Sherri H. Pearce, and Lorelyn Giese. The Stage 1 assessment determined that the Grand Bend Wind Farm had a low to moderate potential for the recovery of cultural remains (DPA 2012a: 20).

The second report details the results of a Stage 2 assessment of minor revisions to the layout of the Grand Bend Wind Farm (PIF #316-165-2012). It was entitled *The 2012 Stage 2 Archaeological Assessment of Minor Modifications to the Proposed Grand Bend Wind Farm, FIT Contract # F-002178-WIN-130-601, Municipalities of Bluewater, South Huron, & East Huron, Huron County and the Municipality of West Perth, Perth County, Ontario*. That report was prepared by Christine Dodd and Dana Poulton. No significant archaeological sites that required a Stage 3 level of investigation were discovered during the course of either of these Stage 2 surveys.

This section of the report also provides the historic context for human settlement of the area of the proposed Grand Bend Wind Farm, as required by Standard 1 of Section 7.5.7 of the Standards and Guidelines (Ibid). In the interest of context, brief summaries are included on the major environmental changes through time, and on the characteristics of settlement and subsistence patterns for the relevant time periods and cultures represented in the history of the area. For reference purposes, a cultural chronology of the region is presented in Table 1.

The Paleo-Indian Period (9500-7000 B.C.)

The first known human occupation of the province took place ca. 9500 B.C., following the retreat of the Wisconsin glacier. During this period, the environment in southern Ontario was characterized by a cool climate. The vegetation, in transition from spruce to pine dominated forests, would have resembled the modern sub-arctic.

Table 1 Cultural Chronology for Southwestern Ontario

PERIOD	GROUP	TIME RANGE	COMMENT
PALEO-INDIAN	Fluted Point Hi-Lo	9500 - 8500 B.C. 8300 - 7900 B.C.	Big game hunters; small nomadic groups
ARCHAIC			
Early	Side Notched	8050-7750 B.C.	Nomadic hunters and gatherers.
	Nettling	7900-6900 B.C.	
	Bifurcate Base	6800 - 6000 B.C.	
Middle	Laurentian	3500 - 2500 B.C.	Transition to territorial settlements.
Late	Lamoka	2500 - 1800 B.C.	Polished/ground stone tools
	Broad Point	1800 - 1400 B.C.	
	Crawford Knoll	1500 – 500 B.C.	
	Glacial Kame	*ca.* 1000 B.C.	Burial ceremonialism
WOODLAND			
Early	Meadowood Red Ochre	1000 - 400 B.C. 1000 – 500 B.C.	Introduction of pottery
Middle	Saugeen Princess Point	400 B.C. - 500 A.D. 500 – 800 A.D.	Long distance trade networks. Incipient horticulture
Middle: Western Basin	Couture	300 B.C. –500 A.D.	Long distance trade networks
	Rivière au Vase	500-900 A.D.	Incipient horticulture
Late: Iroquoian	Early Iroquoian	800 – 1280 A.D.	Transition to village life and agriculture
	Uren	1280 - 1330 A.D.	Large village sites
	Middleport	1330 - 1400 A.D.	Widespread stylistic horizon
	Neutral	1400 - 1650 A.D.	Tribal differentiation and warfare
Late: Western Basin	Yonge Phase	900 – 1300 A.D.	Transition to village life and agriculture
	Springwells Phase	1300 – 1400 A.D.	Large village sites
	Wolf Phase	1400 – 1550 A.D.	Tribal differentiation and warfare
HISTORIC			
Early	Odawa, Ojibwa, Potawatomi	1700 - 1875 A.D.	Social displacement
Late	Odawa, Ojibwa, Potawatomi, Six Nations, Euro-Canadian	1800 A.D. - present	European settlement

The initial occupation of southern Ontario by Paleo-Indian peoples took place toward the end of a period of high water levels in the Great Lakes, including Lake Algonquin in the Lake Huron Basin and early Lake Erie to the south. That ended when the North Bay outlet opened ca. 8500-8000 B.C., draining Lake Algonquin eastward. The result created Lake Stanley in the Lake Huron Basin, Lake Hough in the Georgian Bay Basin and what were in effect a series of large ponds in the Lake Erie Basin. During that period what are now Pelee Island and Middle Island were hills in the dry west end of the Lake Erie Basin.

Paleo-Indian sites in the Great Lakes region are presumed to relate to a focal adaptation based primarily upon the communal hunting of seasonally migrating herds of woodland caribou. In

general, favourite Paleo-Indian site locations include areas adjacent to glacial spillways and kettle lakes, often near present-day swamps on loam soils proximal to muck soils representing the margins of relic pro-glacial or post-glacial lakes. The most diagnostic Paleo-Indian artifacts consist of various types of Early Paleo-Indian fluted projectile points (ca. 9500 - 8500 B.C.) and of projectile points of the Late Paleo-Indian Holcombe type (ca. 8400 B.C.) and Hi-Lo type (ca. 8300 - 7000 B.C.).

The Archaic Period (7700-500 B.C.)

Archaeologists divide the Archaic period into three sequential sub-periods: the Early Archaic (ca. 7700 – 6000 B.C.), the Middle Archaic (ca. 6000 – 2500 B.C.) and the Late Archaic (ca. 2500 – 500 B.C.). The Archaic period was characterized by gradually warming temperatures and by the northward migration of modern flora and fauna that were established throughout their current range by around 4000 B.C. Water levels continued to rise throughout this period, but in the earlier millennia vast areas in the Lake Erie and Lake Huron basins were dry and habitable. Indeed, research suggests that these lake plains would have represented the richest environment for prehistoric hunters and gatherers in the entire Lower Great Lakes region, and that they probably contained a wealth of early camp sites and other archaeological resources that were later flooded.

In general, settlement and subsistence patterns of the Archaic Period are characterized by small camps and scattered finds related to a seasonal round of hunting, fishing and the gathering of wild plant foods. A significant development in settlement at the very end of the Late Archaic was the use of communal cemeteries by peoples of the Glacial Kame Culture. These cemeteries date to ca. 1000 B.C. and typically feature rich mortuary ceremonialism.

The Woodland Period (1000 B.C. – 1650 A.D.)

The Woodland Period that follows the Archaic in the lower Great Lakes region spans a series of important changes in culture and adaptation. This period is most commonly divided into three chronological sub-periods: Early, Middle and Late. For the Woodland period archaeologists have recognized a cultural divide between the sites of the central and eastern portions of southwestern Ontario and those of the westernmost portion of the region. Sites in the latter portion of the region pertain to what is termed the Algonquian Western Basin Tradition while sites in the central and eastern portions of the region are ancestral Iroquoian.

Early Woodland (ca. 900 to 400 B.C.)

The Woodland Period is marked by the introduction into Ontario of pottery, the earliest of which dates to the Early Woodland sub-period. Beyond this, there appear to have been no substantial changes in the hunting, fishing and gathering settlement and subsistence patterns followed during the Late Archaic. Burial ceremonialism, however, suggests an increased social or territorial identity with a particular resource area such as a drainage system.

Mortuary ceremonialism is characteristic of this period, as expressed by the inclusion of elaborate grave goods in burials, and it represents the fluorescence of a pattern recorded for the slightly earlier Glacial Kame Culture of the Terminal Archaic. The evidence for the Early Woodland period suggests that it represents an increased social or territorial identity with a particular resource area such as a drainage system.

Middle Woodland (ca. 300 B.C. to 500 A.D.)

The Couture Complex of the Western Basin Tradition, which occupied this region during the Middle Woodland period, is the poorest known of the Middle Woodland cultural complexes of southern Ontario. This complex occupied the area drained by rivers flowing into Lake St. Clair and the northwest shore of Lake Erie.

The Couture Complex subsistence included the hunting of deer as well as the gathering of black walnut, hickory and acorn. There are some indications that mortuary practices of this complex included the use of burial mounds, and burial mounds have certainly been recorded on Pelee Island and on the mainland north of Point Pelee. Another characteristic of this time period is the presence of large caches of exotic artifacts that provide evidence of long distance contacts with peoples of the Hopewellian Interaction Sphere. One example from the Bothwell Sand Plain of Kent County is a cache of over 200 bifaces of Flint Ridge Chalcedony; the source for that material is in central Ohio.

Late Woodland (ca. A.D. 800-1650)

The Late Woodland sub-period in the Western Basin Tradition has been divided into four sequential phases: the Rivière au Vase Phase (ca. 500-900 A.D.); the Younge Phase (ca. 900-1300 A.D.); the Springwells Phase (ca. 1300-1400 A.D.); and the Wolf Phase (ca. 1400-1550 A.D.).

The Rivière au Vase Phase is best known from sites on Point Pelee. Sites of this phase include small camps as well as longer term occupations by larger populations exploiting the rich marsh and lakeshore environment. These sites were occupied during the warm seasons. It is believed that in the winter the population dispersed into a number of small groups to hunt elsewhere within their territory.

Our knowledge of the Rivière au Vase Phase is limited, as sites of that phase are generally rare. In contrast, the succeeding Younge Phase is represented by numerous well documented sites. Subsistence during that phase represented a continuation of the Rivière au Vase Phase, with a seasonal round that included the exploitation of seasonally abundant resources. Corn was grown by Younge Phase peoples, but it only occurs in small quantities on sites of this phase and it is evident that it only represented a supplementary food source. That is in sharp contrast to contemporary Iroquoian sites, where cultigens represented an ever increasingly important part of the diet. It has been hypothesized that the larger number of Younge Phase sites reflects an increase in population during the period ca. 900-1300 A.D; it has further been hypothesized that the people of this region expanded into previously uninhabited areas during this period (Murphy and Ferris 1990:262). The Younge Phase settlements included villages on the Thames River east of Thamesville.

Settlement and subsistence during the succeeding Springwells Phase represented a continuation of earlier patterns, but with an increased emphasis on warm season village sites located in areas with a diversity of natural resources. That pattern evidently reflects an increased reliance of agriculture to supplement the diet of Springwells Phase peoples. Winter camps occur on the Thames River during this period, but not village sites. At the same time, Springwells Phase peoples expanded into the East Dover Plain on the east side of Lake St. Clair. These moves may have been in response to a westward expansion of contemporary Iroquoian peoples into the Western Basin Tradition territory of the Bothwell Sand Plain during the 13th century.

The transition between the Springwells and Wolf Phases and the Wolf Phase itself are both marked by the use of village sites surrounded by protective earthworks. Contemporary villages of the pre-contact Neutral Iroquoians are also protected by earthworks with palisades, providing evidence of continued warfare and tension between the Iroquoians and Western Basin peoples of southwestern Ontario.

Although the study area fell within the limits of the Western Basin Tradition throughout most of the Late Woodland period, it was in reality part of the frontier that separated Western Basin peoples in extreme southwestern Ontario from the contemporary Iroquoian peoples of the Neutral tribal confederacy in the central and eastern parts of southwestern Ontario. In the late 15th century, during the Wolf Phase of the Western Basin Tradition, there was a westward expansion of Neutral (or Attawandaron) peoples into the Bothwell sand plain and a small number of Iroquoian villages were established in what is now Kent County, as far west as Chatham. This westward expansion reflects warfare between the Iroquoian Neutral peoples and their Algonquian-speaking Western Basin contemporaries. It was a conflict that extended back into the 15th century and that eventually led to the withdrawal of the Neutral to east of the Grand River by the late 16th century. By the time of the European fur trade in the first half of the 17th century, the conflict between the Neutral and the Algonquian Fire Nation who lived around the west end of Lake Erie was still ongoing.

As originally formulated by J.V. Wright (1966), the full sequence of the Ontario Iroquoian Tradition involves three main stages, termed Early, Middle, and Late Ontario Iroquoian. The Iroquoian peoples of southwestern Ontario consisted of the Neutral tribal confederacy and their prehistoric ancestors.

The Early Iroquoian stage in this region spans the period ca. 800-1280 A.D. and comprises the evolution of various communities. They were typically oriented to drainage systems on sand plains in the area of the Thames River and Sydenham River drainages, and on the stream courses that flowed south into Lake Erie and east into Lake Ontario. J.V. Wright (1966) distinguished between the Early Iroquoian peoples of southwestern Ontario and of south-central and southeastern Ontario as the Glen Meyer and Pickering Branches, respectively. However, those terms have fallen out of favour with more recent researchers, who don't accept the construct that two distinct branches existed during the Early Iroquoian stage.

The succeeding Middle Iroquoian stage subsumes the Uren sub-stage (ca. 1280-1330 A.D.) and the Middleport sub-stage (ca. 1330-1400 A.D.). This period was characterized by an increase in village size and, around the beginning of the Middleport substage, by the abandonment of sand plains and a shift into areas with heavier, more drought-resistant soils.

Archaeologists typically divide the Late Iroquoian stage in southwestern Ontario into three successive periods: the prehistoric (or pre-contact) Neutral (ca. 1400-1550 A.D.); the proto-historic Neutral (ca. 1550-1580 A.D.); and the historic Neutral (ca. 1580-1651 A.D.). Of these, the proto-historic Neutral marks the period of indirect contact with European fur traders and missionaries, while the historic Neutral marks the period of direct contact with Europeans.

Each of the Iroquoian villages in the Bothwell sand plain had a population of up to several hundred individuals and was protected by earthworks. The Iroquoian way of life was largely based on a subsistence pattern that involved the cultivation of corn, beans and squash, supplemented by hunting, fishing and the gathering of wild plant foods. Iroquoian villages were typically occupied year-round for some 12-20 years. They moved when the local supply of firewood had been exhausted and the soils in the surrounding agricultural fields were no longer fertile. Villages may cover from one to several hectares in size and included numerous dwellings known as longhouses. In addition to villages, satellite settlements consisting of smaller, more temporary habitations such as agricultural cabin sites and fishing and hunting camps may occur in the area surrounding the village.

The prehistoric Neutral were widely distributed throughout the southern part of southwestern Ontario, from Lake Ontario and the Niagara Peninsula westward to west of London. In the mid 16th century, however, the communities in the western part of the region moved east of the Grand River. The Neutral and the other Ontario Iroquoian tribal confederacies all met the same fate in the mid 17th century: first devastated by a series of plagues accidentally introduced by the Europeans; and finally dispersed and driven from their homelands by raids from the Iroquois of New York State in 1649-1651 A.D.

The Historic Period (A.D. 1700 to Present)

The history of the First Nations peoples during the second half of the 17th century and the succeeding 18th century was one of wide-scale cultural displacement. The displacement of the Iroquoians from southern Ontario in 1649-51 and the Algonquian-speaking peoples from adjacent Michigan and Ohio resulted in a re-organization of the cultural landscape of southwestern Ontario towards the end of the 17th century. It was during this period that the Ojibwa established themselves in the region. The available natural resources also made the area attractive for hunting, fishing and foraging for plant foods. Maple sugar was also an important product during this period.

The loss of the Thirteen Colonies in the American Revolution provided the British Crown with an incentive to expand settlement into what became Upper Canada in 1791. To that end, the Crown negotiated a series of treaties with the resident First Nations peoples.

The early efforts to settle the Huron Tract are inextricably linked to John Galt and the Canada Company. Galt, a Scottish-born author of some fame in England, had been involved in Canadian affairs since his advocacy for war reparations claimants in the aftermath of the War of 1812. He was instrumental in the formation of the Canada Company in 1824, for the purposes of purchasing Crown and Church land en masse, and then selling it for settlement. As part of the complicated negotiations with Church and Crown involving these lands, the Company received

one million acres of land in the Huron Tract, which had been recently acquired from the Ojibwa (Scott 1966: 13-14).

The first Euro-Canadian settlers in what would become Huron County arrived in the second half of the 1820s. However, by 1837, there were still less than 400 inhabitants in the county. The building of a major settlement road (the Huron Road) to Goderich in 1827 gradually changed this, and the London Road, another major settlement road, was opened in the fall of 1832 (Scott 1966:53). By 1842 the population of the Huron Tract had exploded to 7,190. Much of this settlement was centred on Goderich and along the London and Huron Roads, but settlement also began to expand to points north (Scott 1966: 52-57). In 1850 Huron County was created out of the District of Huron.

Figure 4 is a facsimile of the 1879 Historic Atlas map of Tuckersmith Township. It shows the location of the proposed switchyard in relation to the extent of the settlement as of the third quarter of the 19th century. Tuckersmith Township, named after one of the directors of the Canada Company, was one of the earliest townships in the county to be settled, beginning as early as 1828 on a small scale. However, settlement did no begin in earnest until 1836 (Belden 1879: xix).

The closest settlements to the proposed switchyard are Egmondville and Seaforth, which are located roughly 4.1 km and 4.7 km, respectively, to the northwest. Egmondville was the site of a mill constructed by the Canada Company in 1833 (Belden 1879: xix). Seaforth was settled relatively late due in part to the low lying terrain (Belden 1879: viii). The plan of the town of Seaforth was laid out in the 1850s and it was incorporated in 186 (Ibid).

As can be seen from the Historic Atlas map reproduced as Figure 4, the switchyard is located on land owned by James Kehoe in the late 1870s. The mapped structures associated with Kehoe are situated northeast of the proposed switchyard.

1.3 Archaeological Context

This section of the report consists of several distinct elements as defined in Section 7.5.8 of the Standards and Guidelines (Ministry of Tourism and Culture 2011a: 125-126). They are described below.

Previous Archaeological Fieldwork

The only previous archaeological fieldwork that the authors of this report are aware of was carried by staff of D. R. Poulton & Associates in 2012 (DPA 2012a and 2012b). These surveys covered the almost all of the lands that will be involved in the construction and maintenance of the proposed Grand Bend Wind Farm. The previous surveys of the proposed wind turbines, access roads and related facilities resulted in the discovery of nine archaeological sites. Six of the sites consist of isolated pre-contact First Nations find spots of unknown age and cultural affiliation. The remaining three sites consist of diffuse scatters of Euro-Canadian refuse. None of these sites was considered to have any heritage value or interest (DPA 2012a: 49-50).

Known and Registered Archaeological Sites

Data on registered sites within the study area were provided by Robert von Bitter, Archaeological Data Coordinator of the Ministry on November 15, 2011. Consultation with the Ministry of Tourism, Culture and Sport determined that five sites have been registered within the one-kilometre study area for the proposed development; none of the sites is located within or near any of the lands to be impacted. The previously registered sites are AhHk-117 (the M.T. Johnston site), AhHk-118, AhHk-119 (the Simmons Drain site), AiHj-2, and AiHj-3. Summary data on the registered archaeological sites are presented in Table 2. All five sites are First Nations components. None is of known age and cultural affiliation.

Table 2 Summary Data on Registered Archaeological Sites in the Study Area

Borden #	Site Name	Site Type	Cultural Affiliation
AhHk-117	M.T. Johnston	Lithic Scatter	First Nations, indeterminate age & cultural affiliation
AhHk-118	N/A	Lithic Scatter	First Nations, indeterminate age & cultural affiliation
AhHk-119	Simmons Drain	Lithic Scatter	First Nations, indeterminate age & cultural affiliation
AiHj-2	-	Isolated find spot	First Nations, indeterminate age & cultural affiliation
AiHj-3	-	Isolated find spot	First Nations, indeterminate age & cultural affiliation

Two of the sites are isolated find spots; each consists of one or a few chipped lithic artifacts. The other three registered sites are lithic scatters. The term "*lithic scatter*" is used by archaeologists to refer to ploughed-disturbed sites where most or all of the artifacts consist of chipped stone tools and debitage, the waste product of chipped stone tool manufacture and maintenance. In most cases, lithic scatters represent temporary occupations by small groups of people; these are characteristic of sites such as hunting camps.

Conditions in the Subject Lands

Figures 3 and 5 shows the location of the proposed switchyard for the Grand Bend Wind Farm. It is situated in an agricultural field that was in no-till soya bean. The field was ploughed and allowed to weather prior to the Stage 2 survey. The field was ploughed and disced on May 15, 2013. It also contains hydro towers for two existing hydro transmission lines: a 115 kV line; and a 230 kV line.

The switchyard is located on Perth clay loam. This soil is part of the Grey Brown Podzolic Group (Hoffman et al. 1952, South Sheet). The matrix of this soil consist of fine-textured till and the soil profile consists of 6" (15 cm) of dark grey clay loam, or silty clay loam; the drainage is imperfect (Ibid). The proposed switchyard is part of the Stratford Till Plain, a clay plain

characterized by mostly level gravel moraines (Chapman and Putnam 1984: 133). The closest water course to the proposed switchyard is the Bayfield River (Figure 3), which is located more than 200 metres east of the proposed switchyard.

Dates of the 2013 Archaeological Fieldwork

Survey of the proposed switchyard was conducted on May 28, 2013. This information is being included herein to satisfy Standard 3 of Section 7.5.8 of the Standards and Guidelines (Ministry of Tourism and Culture 2011a: 125).

2.0 STAGE 2 FIELD METHODS

Standard 2a of Section 7.8.1 of the Standards and Guidelines (Ministry of Tourism and Culture 2011a: 137) requires that this section of Stage 1-2 or Stage 2 reports provide detailed and explicit descriptions of how each standard was addressed for the property survey generally. The following information is intended to satisfy this standard.

The survey of the proposed switchyard for the Grand Bend Wind Farm was conducted on May 28, 2013. As stated in Section 1.1 of this report, the Stage 2 archaeological assessment was conducted by Sherri Pearce (Licence #P316) and a crew of two. The weather was mild and overcast and the lighting conditions were excellent.

Prior to the survey the switchyard the area was staked by Colin Mackenzie of Neegan Burnside Ltd. In doing so, he used a GPS unit. It was a Trimble R8 rover used in conjunction with Cansels CANNET System, which is a series of GPS base stations spread throughout Canada and calibrated to survey monuments taken from the MNR Cosine website. Unfortunately, the stakes were dislocated when the field was ploughed on May 15, 2013. A stake lying on the ground can be seen in Plate 1. In order to ensure that the area of the switchyard was properly covered, the ploughing and the subsequent survey covered a larger area than will be required for the switchyard. Altogether, an area measuring roughly 235 metres by 65 metres was ploughed and surveyed for the proposed switchyard. The lands so covered had a surface area of 1.53 hectares (3.8 acres).

Standard 1 of Section 2.1 of the Standards and Guidelines (Ibid: 28) requires that the entire property be included in the survey. In the present case, as stated above, the survey covered a larger that will be subject to potential impact from the construction of the proposed switchyard. As such, the 2013 survey satisfied Standard 1 of Section 2.1 of the Standards and Guidelines.

The field containing the proposed switchyard was well ploughed. In addition, several rains had occurred in the 13 days since the ploughing had occurred, and the field surface was well weather. The ground visibility was excellent at 95%. The survey was conducted at a 5 metre interval by a crew of two under the direction of Sherri Pearce of D.R. Poulton & Associates Inc.

Figure 5 depicts the survey methods and coverage that relate to the 2013 survey of the proposed switchyard property. It also illustrates conditions within the property as well as the location and direction of the three photographic plates that are illustrated in the report and are referenced below.

Section 2.1 Standard 6 of the Standards and Guidelines (Ministry of Tourism and Culture 2011a: 30) requires photo-documentation of examples of all field conditions encountered (e.g. ploughed field, pasture or woodlot, disturbances). The photographs that are included in this report satisfy this standard.

Plate 1 is a view looking northeast of the subject lands. Plate 2 is a view looking west southwest. Plate 3 is a close-up view of the field conditions as they existed on the day of the Stage 2 survey.

Standard 5 of Section 2.1 of the Standards and Guidelines (Ibid: 29) requires that assessment reports map all field activities (e.g. extent and location of field methods, survey intervals) in reference to fixed landmarks, survey stakes and development markers. The standard also requires that mapping must be accurate to five metres or to the best scale available. The mapping in this report satisfies this standard.

3.0 RECORDS OF FINDS

According to Standard 2 of Section 7.8.2 of the Standards and Guidelines (Ministry of Tourism and Culture 2011a: 138), the Record of Finds section of the document requires that archaeological assessment reports include an inventory of the documentary record that was generated by the fieldwork. The documentary record that has been generated by the fieldwork documented in this report includes hand-made notations on printouts of digital aerial photographs of the proposed wind farm. It also includes field notes in a bound fieldnote book. Finally, it includes digital photographs of the fieldwork.

Section 7.8.2 of the Standards and Guidelines (Ibid: 137-138), which concerns the Record of Finds section of the document, requires that Stage 2 assessment reports provide specific types of information on all archaeological discoveries. The Stage 2 survey of the proposed switchyard for the Grand Bend Wind Farm did not discover any archaeological sites or archaeological remains.

4.0 STAGE 2 ANALYSIS AND CONCLUSIONS

Standard 1 of Section 7.8.3 of the Standards and Guidelines (Ministry of Tourism and Culture 2011a: 138) requires that the Analysis and Conclusions section of reports on Stage 2 fieldwork addresses the following statement: "*Summarize all findings from the Stage 2 survey, or state that no archaeological sites were identified*." In the present case, no archaeological remains were discovered by the 2013 survey of the proposed switchyard for the Grand Bend Wind Farm.

5.0 RECOMMENDATIONS

The main focus of this report is the May 2013 Stage 2 archaeological assessment of the proposed switchyard for the Grand Bend Wind Farm. However, it should be noted that the Stage 1-2 report of August 17, 2012 (DPA 2012b: 51-52) included a recommendation for a more detailed Stage 3 assessment of the segment of the proposed 230 kV Transmission Line that is to extend east-west just north of the Hensall Union Cemetery. The cemetery is located on the south side of Rodgerville Road, east of Highway 4.

At the time the August 2012 report was prepared, it remained to be determined if the transmission line would be a buried cable or would be constructed on above-ground poles. Either way, the plan was to construct the line within the southern portion of the road right-way. It has since been determined that the proposed 230 kV Transmission Line will be in the gravel shoulder along the north side of Rodgerville Road, opposite the cemetery, not adjacent to it. As the north shoulder of Rogerville Road has been disturbed by past road construction and is across the road from the cemetery, this alignment is not considered to have a potential for archaeological remains or for unmarked graves. Figure 6 shows the location of the proposed 230 kV Transmission Line in the vicinity of the Hensall Union Cemetery.

The 2013 archaeological assessment of the proposed Grand Bend Wind Farm resulted in two recommendations. The first recommendation is that in the absence of any archaeological remains, there are no outstanding archaeological planning concerns for the proposed switchyard for the Grand Bend Wind Farm. The second recommendation is that in the absence of any potential for unmarked graves, no further archaeological investigations or concerns are warranted for the segment of the proposed 230 kV Transmission Line to the north of the Hensall Union Cemetery.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

The Standards and Guidelines (Ministry of Tourism and Culture 2011a) have requirements that archaeological assessment reports must include statements that concern compliance with pertinent legislation. The pertinent standards in the Standards and Guidelines are as follows:

1. Advice on compliance with legislation is not part of the archaeological record. However, for the benefit of the proponent and approval authority in the land use planning and development process, the report must include the following standard statements.

a. This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the Standards and Guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

b. It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has complete archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

c. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

d. The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

2. Reports recommending further archaeological fieldwork or protection for one or more archaeological sites must include the following statement: "Archaeological sites recommended for further archaeological fieldwork or protection remain subject to

> Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence."

The above standards are quoted verbatim from Section 7.5.9 of the Standards and Guidelines. All of them apply to the present report. However, it should be noted that effective July 1, 2012 matters relating to cemeteries and to the discovery of human remains are subject to the provisions of the *Funeral, Burials and Cremations Act* alone; the aforementioned *Cemeteries Act* (cited in Section 1d above) is no longer in effect.

Standard 1d of Section 7.5.9 of the Standards and Guidelines does not provide any specific names, telephone numbers or e-mail addresses for the agencies that must be contacted in the event that someone should discover human remains in a proposed development. In the present case, however, in the event that any human remains should be discovered during future earthmoving or construction related to the proposed switchyard, the discovery should be reported immediately to Michael D'Mello. Mr. D'Mello is the Registrar of the Cemeteries Regulation Unit of the Ontario Ministry of Consumer Services. His telephone number is 416 326-8404 and his e-mail address is Michael.D'Mello@ontario.ca. The Registrar will then provide the party who reported the discovery with the contact information for the police force responsible for the area, and for the local coroner, and inform the party of any further responsibilities it may have in the matter.

As with the above, Standard 1c of Section 7.5.9 of the Standards and Guidelines does not provide any specific names, telephone numbers or e-mail addresses for the agency that must be contacted in the event that someone should discover archaeological remains in a proposed development. In this case, in the event that any previously unknown archaeological sites should be discovered during future earthmoving or construction related to the proposed switchyard, the discovery should be reported immediately to the archaeological staff of the Ministry of Tourism, Culture and Sport by telephone (416 212-8886), or by e-mail (Archaeology.ontario.ca.). The Ministry will then allocate an Archaeological Review Officer to respond to the reported discovery, and will then inform the party who reported the discovery of any further responsibilities it may have in the matter.

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FIGURES

Figure 1 Overview of Project Changes for the Grand Wind Farm

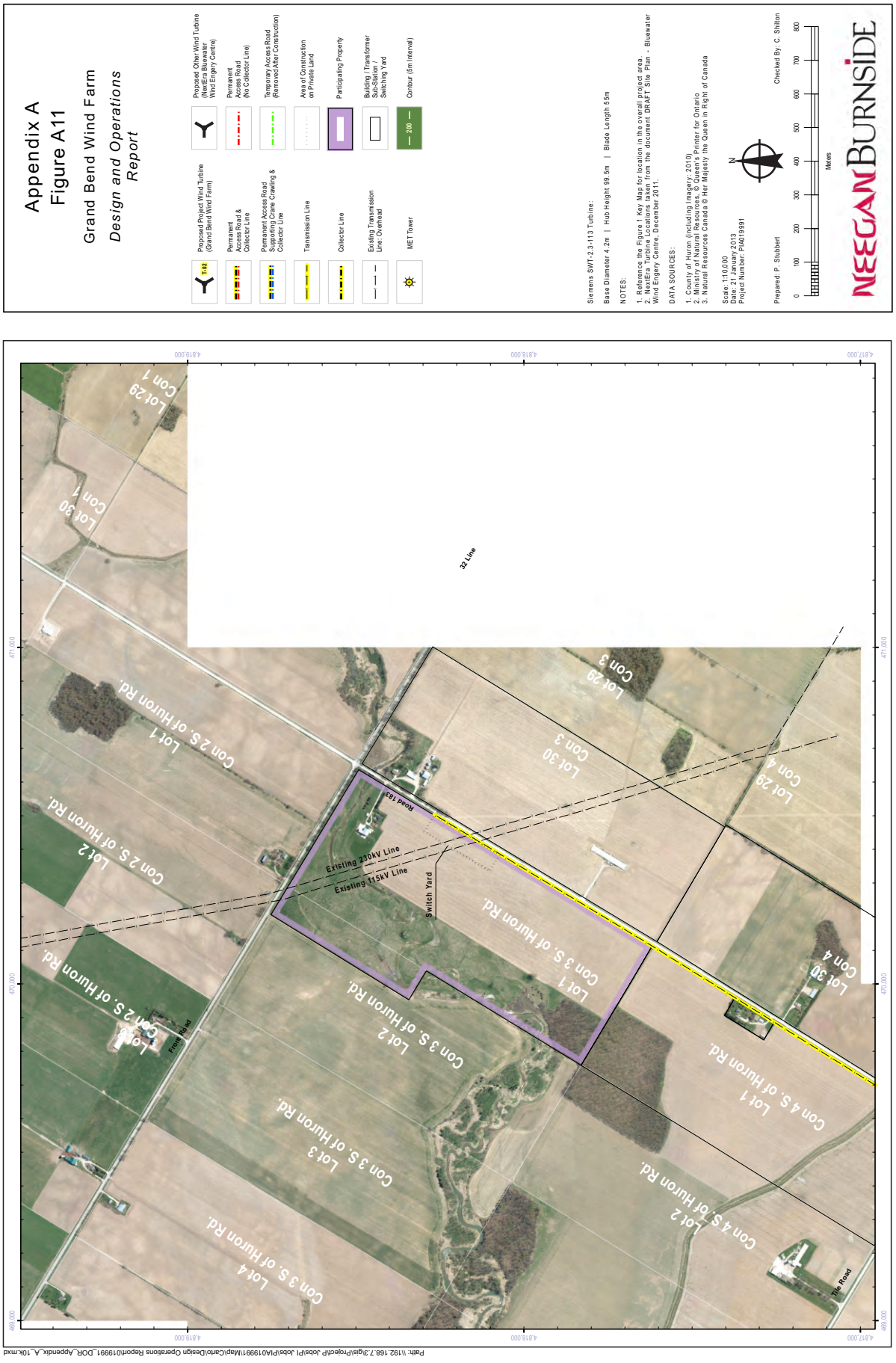

Figure 2 Layout of the Switchyard

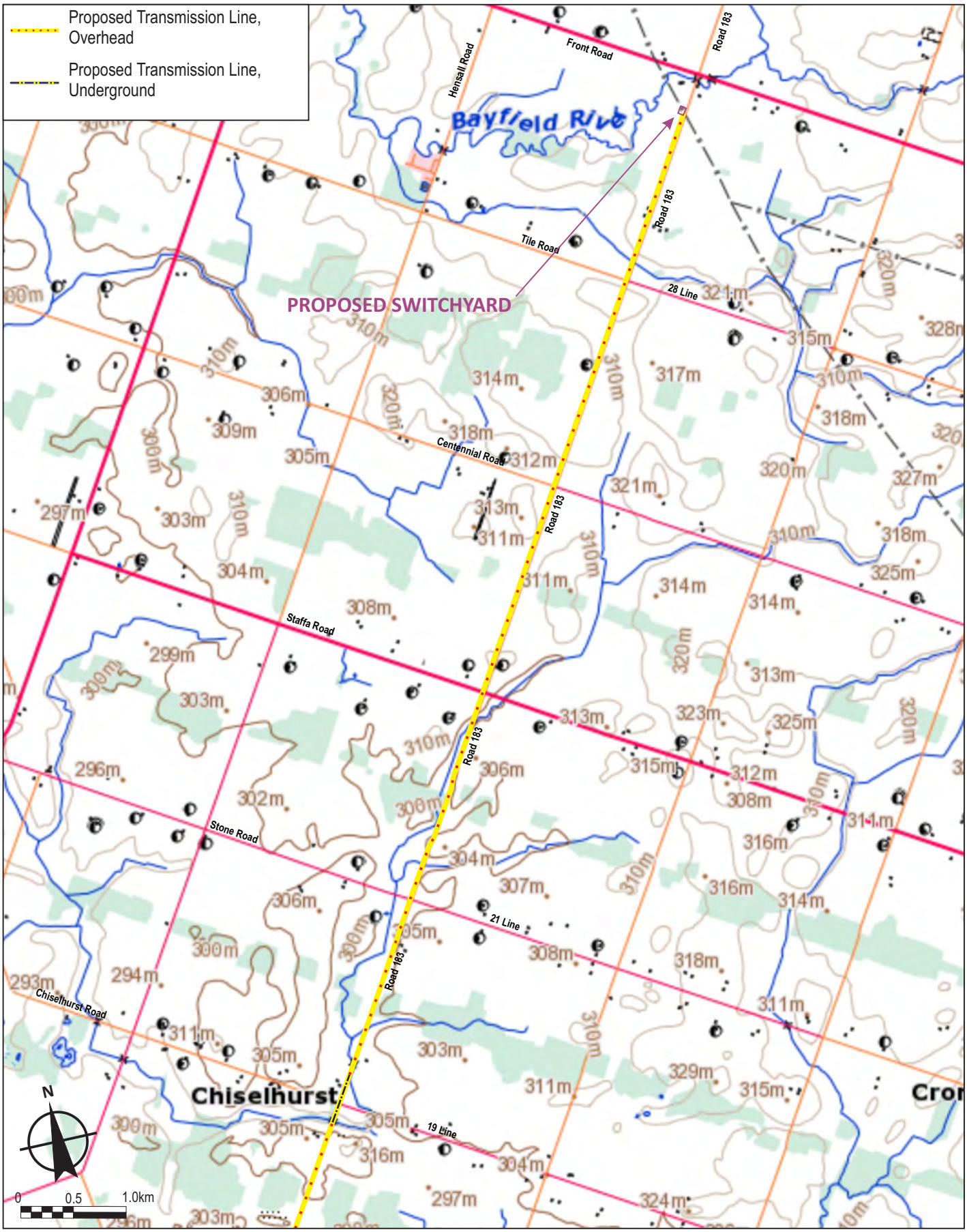

Figure 3 Location of the Proposed Switchyard

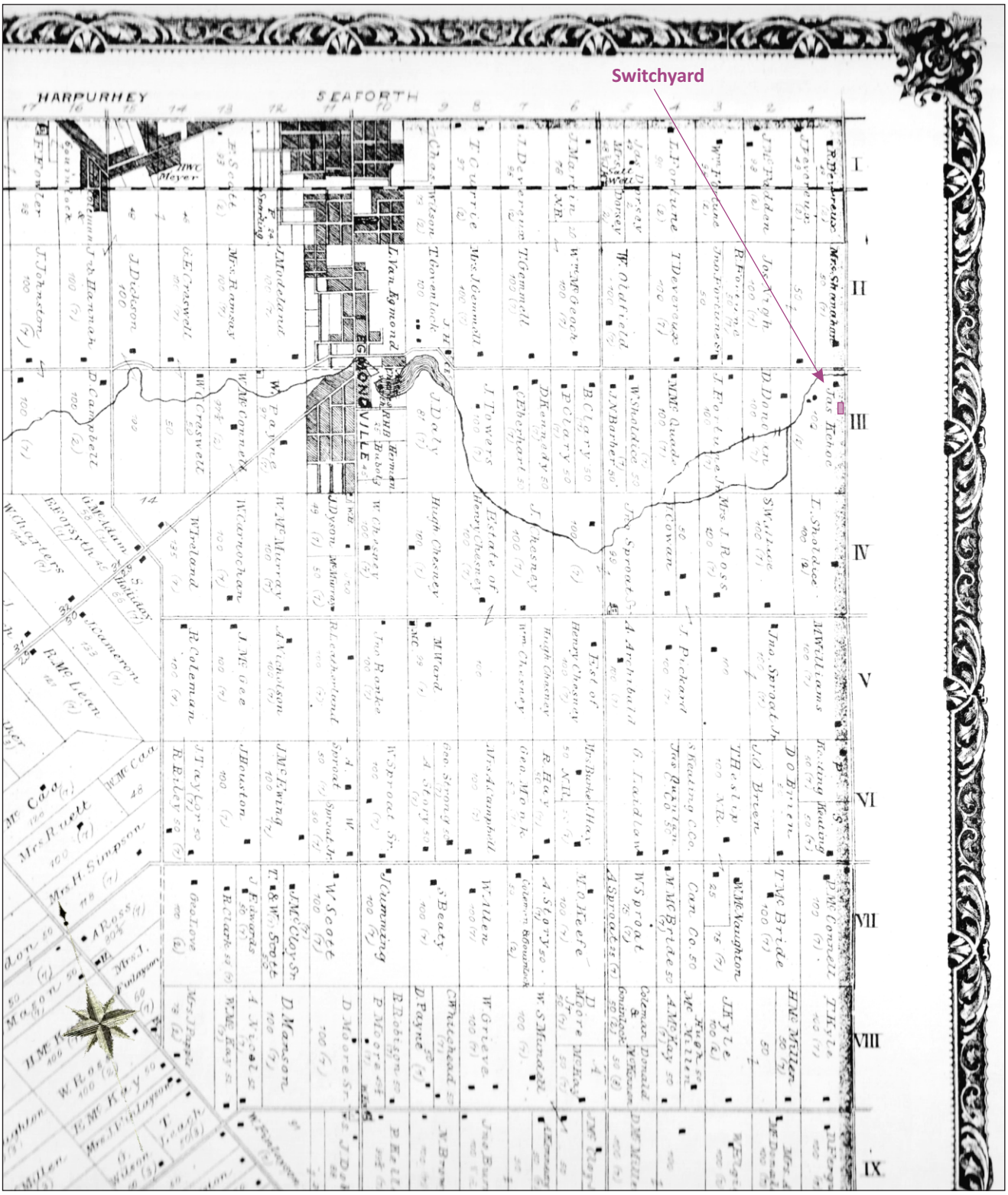

Figure 4 Facsimile of the 1879 Historic Atlas Map of the Tuckersmith Township

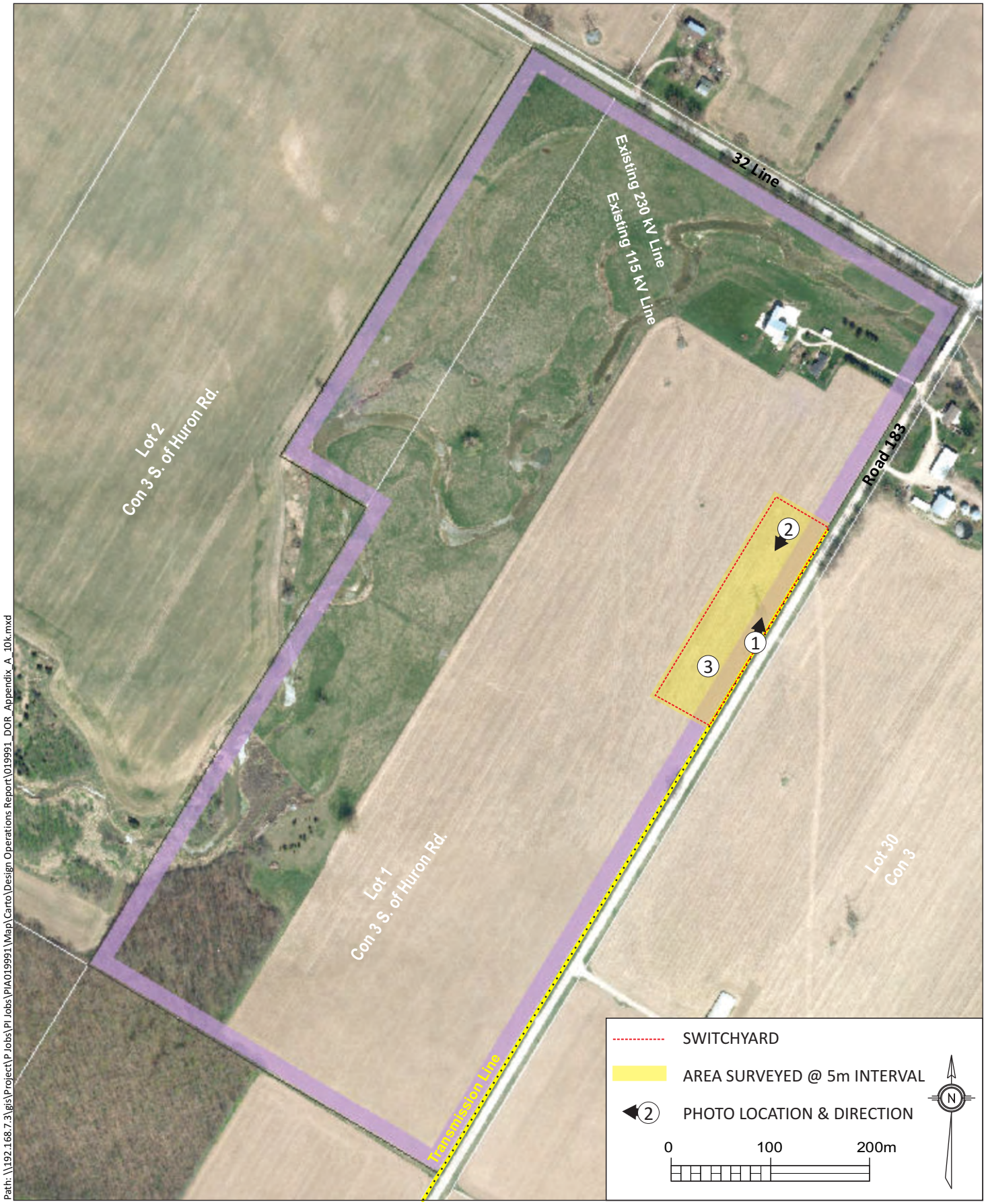

Figure 5 Archaeological Survey Coverage and Key to Photographic Plates

Figure 6 Proposed 230 kV Transmission Line in the Vicinity of the Hensall Union Cemetery

PLATES

Plate 1

Survey Area
View Northeast

Plate 2

Survey Area, View Southwest

Plate 3

Close-up of Field Conditions