

**Stage 1 and 2 Archaeological
Assessment: Barlow Solar
Energy Centre**

Part of Lots 20 and 21,
Concession 4, and Road
Allowance Between Concessions
4 and 5, Lots 18-21, Geographic
Township of Cornwall, Township
of South Stormont, United
Counties of Stormont, Dundas,
and Glengarry, Ontario



Prepared for:
Barlow Energy Centre Limited
Partnership
53 Jarvis Street, Suite 300
Toronto, ON
M5C 2H2

Prepared by:
Stantec Consulting Ltd.
400 – 1331 Clyde Avenue
Ottawa ON K2C 3G4

Licensee: Patrick Hoskins, MA
Licence Number: P415
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ORIGINAL REPORT

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Project Personnel

Project Manager:	Tanya Turk
Archaeology Task Manager:	Colin Varley, MA, RPA (P002)
Licensed Archaeologist:	Patrick Hoskins, MA (P415)
Licensed Field Director:	Gemma Calgie, BA (R472), Patrick Hoskins, MA (P415)
Field Crew:	Joss Clifford BA, Chelsea Dickinson, BA, John Johnson, Bobbi Sheppard, BA
Report Writer:	Patrick Hoskins, MA (P415)
GIS:	Pat Worsell
Quality Review:	Colin Varley, MA, RPA (P002)
Independent Review:	Jim Wilson, MA (P001)

Acknowledgments

Ministry of Tourism, Culture and Sport:	Robert von Bitter
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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by Barlow Energy Centre Limited Partnership (BEC) to complete a Stage 1 and 2 archaeological assessment of their proposed solar energy centre located on part Lots 20 and 21, Concession 4, Geographic Township of Cornwall, Township of South Stormont, United Counties of Stormont, Dundas, and Glengarry, Ontario. The proposed project will consist of photovoltaic panels with a maximum nameplate capacity of 10 megawatts alternative current (MWac). The project will connect to the existing distribution lines 600 metres (m) to the east using the Cornwall Centre Road right of way (ROW). The project area is approximately 100 acres in size.

This assessment was undertaken by Stantec on behalf of BEC as part of BEC's Renewable Energy Approval under the Renewable Energy Approval regulation (Government of Ontario 2011a), as related to Ontario Regulation 359/09 sections 21 and 22 under Part V.0.1 of the *Environmental Protection Act* (Government of Ontario 1990a) and informed by the *Green Energy Act* (Government of Ontario 2009). This archaeological assessment is also subject to the *Ontario Heritage Act* (Government of Ontario 1990b) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b).

The Stage 1 archaeological assessment of the study area determined that archaeological potential was still present. A Stage 2 assessment using pedestrian and test pit survey methods was undertaken. No archaeological resources were identified.

The Stage 1-2 archaeological assessment of the proposed Barlow Solar Energy Centre did not identify any archaeological sites, and therefore **no further archaeological assessment is required.**

The Ministry of Tourism, Culture and Sport is asked to review and accept this report into the Ontario Public Register of Archaeological Reports.

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1.0 PROJECT CONTEXT

1.1 DEVELOPMENT CONTEXT

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1.1.1 Objectives

The objectives of the Stage 1 and 2 assessment were to compile available information about the known and potential archaeological heritage resources within the study area and to provide specific direction for the protection, management and/or recovery of these resources. In compliance with the provincial standards and guidelines set out in the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b), the objectives of the Stage 1 Archaeological Overview/Background Study are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork and current land conditions;
- To evaluate in detail the study area's archaeological potential which will support recommendations for Stage 2 survey for all or parts of the property; and
- To recommend appropriate strategies for Stage 2 survey.

To meet these objectives Stantec archaeologists employed the following research strategies:

- A review of relevant archaeological, historic and environmental literature pertaining to the study area;
- A review of the land use history, including pertinent historic maps;



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- An examination of the Ontario Archaeological Sites Database (ASDB) to determine the presence of known archaeological sites in and around the study area; and
- A site visit to document existing ground conditions and confirm the presence or absence of features of archaeological interest.

The objectives of the Stage 2 assessment were to document archaeological resources present within the study area, to determine whether any of the resources might be artifacts or archaeological sites with cultural heritage value or interest requiring further assessment, and to provide specific Stage 3 direction for the protection, management and/or recovery of the identified archaeological resources (Government of Ontario 2011b).

Permission for Stantec staff to enter the property to conduct archaeological field work was provided by Barlow Energy Centre Limited Partnership.

1.2 HISTORICAL CONTEXT

1.2.1 Post-Contact Aboriginal Resources

“Contact” is typically used as a chronological benchmark in discussing Aboriginal archaeology in Canada and describes the contact between Aboriginal and European cultures. The precise moment of *contact* is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

The nature of Aboriginal settlement size, population distribution, and material culture shifted as European settlers encroached upon Aboriginal territory. However, despite this shift, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to...systems of ideology and thought” (Ferris 2009:114). As a result, First Nations peoples have left behind archaeologically significant resources throughout Ontario which show continuity with past peoples, even if they have not been recorded in Euro-Canadian documentation.

The post-contact Aboriginal occupation of Eastern Ontario was heavily influenced by the aboriginal involvement and contributions to the fur trade. The growing fur trade and the designation of animal skins as money led to changes in economic and social organization patterns. After the initial excursion of Samuel de Champlain into the Algonquin territory in 1613 until 1615 the Algonquin played a major role as middlemen in the trade between the Huron and the French, and actively worked against Champlain making a trip to the Huron territory (Day and Trigger 1978). Increased trade along the Ottawa River also brought attention from other Iroquois groups from south of the St. Lawrence River. However, the alliance of Algonquin, Huron and French minimized Iroquois raiding, and various treaties were enacted between the Algonquin and the Mohawk during the 1620s and 1630s (Day and Trigger 1978). In the latter part of the 1630s, however, the Algonquin attempted to trade directly with the Dutch, who had been

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trading partners with the Mohawk, and this led to a new outbreak of hostilities between Mohawk and Algonquin (Day and Trigger 1978). After 1639 the Mohawk began accumulating English, and then Dutch, firearms that gave them considerable advantage over the Algonquin, whose French trade partners, who had initially determined to trade no firearms, would only provide firearms to those who had been baptized (Trigger 1985). Conflict continued to greater and lesser degrees throughout the 1640s, but by the early 1650s most of the Ottawa River Valley Algonquin had either sought refuge in Quebec, such as at Trois Rivieres, or had removed themselves to the upper parts of their territory, in present day Algonquin Park (Hessel 1987).

The most historically significant post-contact change to eastern Ontario was the disappearance of the St. Lawrence Iroquois. Jacques Cartier recorded interactions with the St. Lawrence Iroquois during his explorations in the early and mid-16th century, but when Champlain returned in the early 17th century there was no trace of them and the St. Lawrence area was a sparsely populated warzone. Popular theories of the disappearance blame the invasion of the Five Nations Iroquois or Huron and Algonkian aggression (Trigger 1985). Smallpox epidemics and the depletion of the beaver populations led to the dispersal of various Iroquoian-speaking communities from Southwestern Ontario by the New York State Iroquois and the subsequent arrival of Algonkian speaking groups from northern Ontario at the end of the 17th century and the beginning of the 18th century (Konrad 1981; Schmalz 1991). In 1649 The Huron-French fur trade collapsed and the Five Nations Iroquois raided and destroyed the French Mission at Ste. Marie and several Huron villages. Huronia was abandoned, with the surviving Huron destroying their own remaining villages and moved further inland, now within the province of Quebec. The Algonkian-speaking communities were briefly dispersed from the Ottawa Valley from 1650 to 1675, and were replaced as middlemen by the Odawa people, who were later in turn replaced by the French *coureur de bois*. Further colonization of Eastern Ontario and Quebec led to more changes in the fur trade. However, after the merger of the Northwest Company and Hudson's Bay Company in 1821, the fur trade routes were diverted north to Hudson's Bay (Kennedy 1961).

The land within the current study area is governed by The Crawford Purchase, which was enacted on October 9th, 1783 (marked B and B1 on Figure 2). In October 1783, at Carleton Island, Captain William Redford Crawford of the King's Royal Regiment of New York met with the local Mississauga Indians led by the elderly Mynass. Crawford, acting for the British government, purchased from the Mississauga a large tract of land east of the Bay of Quinte. The land was subsequently settled by United Empire Loyalists and Britain's Aboriginal allies who had been forced to leave their homes in the new United States. According to Morris, the Crawford Purchase is described as "...reaching from Point Baudet on the north side of Lake St. Francis, up to the north of the Gananoque River" (Morris 1943:16-17).

1.2.2 Historic Euro-Canadian Resources

The study area is situated on parts of Lots 20 and 21, Concession 4, Geographic Township of Cornwall, now Township of South Stormont, United Counties of Stormont, Dundas and Glengarry, Ontario. This area is located within one of the original eight districts of Upper Canada, settled by British Loyalists starting in 1784. In 1788, what had been known as the District of Lancaster was

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divided into four small districts. The study area is positioned within the District of Lunenburg (Belden 1879: 5). Approximately four years later the districts were divided again into 19 counties including Stormont, Dundas, and Glengarry (Belden 1879: 5-6). In 1850, these three were combined to form the United Counties of Stormont, Dundas and Glengarry (Harkness 1946). In 1998, Cornwall Township was amalgamated with the former Township of Osnabrock to form the Township of South Stormont, a regional municipality (excluding the City of Cornwall).

Contained within the original District of Lancaster were eight townships aptly named Township Number One through Township Number Eight (Figure 3). These townships were renamed sometime before the District was sub-divided in 1788 and British law was introduced to the region (Harkness 1946). Township Number 2 became known as Cornwall Township. They were surveyed as part of the earliest Crown sponsored settlement initiatives in what would become the Province of Ontario.

Following the American War of Independence, thousands of loyalists and aboriginal allies were displaced from their lands in current upstate New York. Under the direction of General Frederick Haldimand, Governor of Quebec, survey parties were sent to the area along the St. Lawrence River west of Montreal and the region surrounding Fort Frontenac, later known as Kingston (Weaver, 1968: 8). Beginning in 1783 Haldimand had thirteen townships surveyed for United Empire Loyalist settlement, five along the Bay of Quinte, and the eight aforementioned townships located along the St. Lawrence River between modern day Brockville and the Quebec border (Fryer 1984).

In 1784 under the instruction of Deputy Surveyor General John Collins, Patrick McNiff began assembling a team of 25 men to survey the southern concessions of Townships Number 1 through 8. In 1786 he was appointed surveyor in charge of the eight townships, and prepared maps listing land grant recipients in order to summarize the survey and settlement that had taken place (Figure 3). Each township was surveyed according to the single front survey system popular between 1783 and 1816. Generally, the standard single front system divided the land into five lots containing 200 acre parcels surrounded by roads. What resulted were narrow lots with roads at both the front and rear. As settlement took place, the single front system often experienced a high degree of variation due to both topographic challenges, many of which were experienced in Cornwall Township, and the practicalities of settling such a large amount of land in the late 18th and early 19th centuries.

Crown sponsored Euro-Canadian settlement of the lands within the study area began following completion of the 1784 surveys and the disbanding of the Loyalist regiments. This settlement was supervised by Sir John Johnson, Superintendent General and Inspector General of the Six Nations Indians and those in the Province of Quebec. Soldiers were directed, along with their families, to New Johnstown (now Cornwall), immediately south of the current study area. They gathered at the government store and drew lots for land, with Captains receiving 2,000 acres at a minimum, lieutenants receiving 500 acres and privates receiving 200 acres. For the first three years the settlers were sent provisions from the Crown including; one cow for two families, an axe and other necessary tools. The first houses built were constructed on cleared land, and took the form

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of a log shack roofed with bark. The houses typically had one window and, initially, a blanket covering the door. These minimalist log structures stood until more permanent and comfortable houses could be erected. The initial settlement was done under the direction of Sir John Johnson of the King's Royal Rangers regiment. While these early settlements were initially localized along the St. Lawrence River, by the mid-19th century other settlements had been created further inland (Harkness 1946).

Cornwall Township represents the demarcation point along the St. Lawrence River where settlement shifted from largely Palatine (i.e. of Germanic descent) Loyalists to a mixture of Scottish Loyalists and others directly from England and Scotland. This shift can be seen in the plotted names of land grant recipients on McNiff's *Survey of Cornwall Township* (McNiff 1786, Figure 3). The Palatine Calvinists and Lutherans settled the west portion of the township as well as neighbouring Osnabruck Township while the English Anglicans, Scottish Presbyterians and many Catholic Scottish Highlanders settled primarily surrounding the Town of Cornwall and east (Bowering, 2005:5). Both groups originated primarily from the Mohawk Valley in New York.

In the 1770s, under the guidance of Father McKenna, a ship of Highlanders travelled to the Mohawk Valley during a phase in Scottish history known as the Highland Clearances. Shortly after the outbreak of war, and prior to the arrival of large numbers of Loyalists, some of these Scottish emigrants travelled to what would become Cornwall Township and settled adjacent to the Raisin River at St. Andrew's, located north of the current study area (Harkness 1946). Also present within Cornwall Township were places named for French Voyagers, Moulinette and Milles Roches, as well as a distinctly Quebecois wave of settlement in the Town of Cornwall during the late 19th century (Marin and Marin 1982).

The Chewett map of 1794 does not offer much detail regarding the study area (Figure 4). However, it does suggest that the land surrounding the Raisin River was generally adequately drained given that other parts of the township are indicated as swampy. There are also additions to the map that are not associated with Chewett's original, including the addition of some roads and, most tellingly, the route of the Grand Trunk Railroad (G.T.R.R.) which was not in operation until the 1850s.

The general road system present today in the study area is identifiable as early as the 1852 Maclear map of the Counties of Prescott and Russell, and Stormont, Dundas and Glengarry (Figure 5). Modern roads present on the map include Cornwall Centre Road and sections of Highway 138 north and south of Cornwall Centre Road.

In the late 1870s, nearly 100 years after the initiation of Loyalist settlement, property ownership appears more varied than at the time of settlement. The Town of Cornwall was the centre of trade and commerce for not only the township but the surrounding area. At the time of its incorporation in 1834 the town was the main commercial centre east of Prescott (Belden 1879:9). It was also the hub of industry with the presence of three large woolen and cotton mills (OAC 1881:548). The construction of the Grand Trunk Railway, and later the Cornwall Canal, largely facilitated the town's growth and development.

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Table 1 identifies land grant recipients within the study area as identified in the 1786 *Survey of Cornwall* (McNiff 1786). Figure 3 depicts a portion of the 1786 survey.

Table 1: Land Grant Recipients Depicted in the 1786 Survey of Cornwall Township

Lot	Concession	Grantee	Euro-Canadian Features
18 (east half)	4	John Milroy	n/a
18 (west half)	4	William Ferguson	n/a
19 (east half)	4	Efferan Putnam	n/a
19 (west half)	4	Daniel Robertson	n/a
20 (east half)	4	George Anderson	n/a
20 (west half)	4	Thomas Anderson	n/a
21 (east half)	4	Cyrus Anderson	n/a
21 (west half)	4	John Shauer	n/a

Table 2 identifies the occupants/owners of the properties and any structures within the study area as identified in the 1862 *Map of the Counties of Stormont, Dundas, Glengarry, Prescott & Russell* (Walling 1862). Figure 6 depicts a portion of the 1862 historic map.

Table 2: Property Owners and Historical Features Depicted in the 1862 Historic Map of Cornwall Township

Lot	Concession	Owner/Resident	Euro-Canadian Features
21	4	N/A	No Landowner listed
20	4	R. Alguire	House shown at south end of property
19	4	Milroy	Tenant House ('T.H.') at south end of property
18	4	Illegible	Possible Tenant House ('T.H.') at south end of the property

Table 3 identifies the occupants/owners of the properties and any structures within the study area as identified in the 1879 *Illustrated Historic Atlas of Stormont, Dundas and Glengarry Counties* (Belden 1879). Figure 7 depicts a portion of the 1879 historic map.

Table 3: Property Owners and Historical Features Depicted in the 1879 Historic Map of Cornwall Township

Lot	Concession	Owner/Resident	Euro-Canadian Features
18	4	J. Alguire	House located in SE corner along Power Dam Drive
19	4	R. Milroy	House located at north end of property

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Lot	Concession	Owner/Resident	Euro-Canadian Features
20 (east quarter)	4	W. Alguire	No structures depicted
20 (central quarter)	4	R. Alguire	House located to the south of Raisin River
20 (west half)	4	J.H. Fickes	House located to the south of Raisin River
21 (southeast quarter)	4	M. Tait	No structures depicted

Historical county atlases were produced primarily to identify factories, offices, residences and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, all structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). However, the 1879 map of Cornwall Township is fairly detailed and seems to depict most residential and commercial structures and landowners from the late 19th century.

The majority of the region surrounding the study area has been subject to European-style agricultural practices for over 100 years, having been densely populated by Euro-Canadian farmers by the late 19th century. Much of the region today continues to be used for agricultural purposes.

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area is located in the Glengarry Till Plain physiographic region. The Glengarry Till Plain is an area of low relief located between the east end of the Ottawa River and the St. Lawrence River, and is characterized by the presence of a large number of small streams, many of which are slow-flowing for great distances from their headwaters. The major physiographic characteristic of the Glengarry Till Plain region is the stoniness of the till soil (Chapman and Putnam 1984). In general, the landscape is undulating to rolling, consisting of long morainic ridges and a few well-formed drumlins with clay flats and swamps (Chapman and Putnam 1984). The till itself is medium textured and contains a high proportion of limestone. Soils within the study area consist of North Bower clay loam, a poorly drained stone-free soil, and Eamer loam, well drained and moderately stony (Matthews and Richards 1954).

The closest potable water source to the study area is the South Raisin River, approximately 300 m to the north.

1.3.2 Pre-contact Aboriginal Resources

Overall, archaeological research in many parts of eastern Ontario has been fairly limited, at least compared to adjoining areas in Southern Ontario and northern New York State, resulting in

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only a limited understanding of the cultural processes that occurred in this part of the province. The following summary of the prehistoric occupation of Eastern Ontario (see Table 3 for chronological chart) is based on syntheses in Archaeologix (2008), Ellis and Ferris (1990), Jacques Whitford (2008), Pilon (1999), St-Pierre (2009) and Wright (1995).

Identifiable human occupation of Ontario begins just after the end of the Wisconsin Glacial period. The first human settlement can be traced back 11,000 years, when this area was settled by Native groups that had been living to the south of the emerging Great Lakes. This initial occupation is referred to as the "Palaeo-Indian" archaeological culture.

Table 4: Eastern Ontario Prehistoric Cultural Chronology, Years Before Present (BP)

ARCHAEOLOGICAL PERIOD	TIME	CHARACTERISTICS
Early Paleo-Indian	11,000–10,400 BP	caribou and extinct Pleistocene mammal hunters, small camps
Late Paleo-Indian	10,400–10,000 BP	smaller but more numerous sites
Early Archaic	10,000–8,000 BP	slow population growth, emergence of woodworking industry, development of specialized tools
Middle Archaic	8,000–4,500 BP	environment similar to present, fishing becomes important component of subsistence, wide trade networks for exotic goods
Late Archaic	4,500–3,100 BP	increasing site size, large chipped lithic tools, introduction of bow hunting
Terminal Archaic	3,100–2,950 BP	emergence of true cemeteries with inclusion of exotic trade goods
Early Woodland	2,950–2,400 BP	introduction of pottery, continuation of Terminal Archaic settlement and subsistence patterns
Middle Woodland	2,400–1,400 BP	increased sedentism, larger settlements in spring and summer, dispersed smaller settlement in fall and winter, some elaborate mortuary ceremonialism
Transitional Woodland	1,400–1,100 BP	incipient agriculture in some locations, seasonal hunting & gathering
Late Woodland (Early Iroquoian)	1,100–700 BP	limited agriculture, development of small village settlement, small communal longhouses
Late Woodland (Middle Iroquoian)	700–600 BP	shift to agriculture as major component of subsistence, larger villages with large longhouses, increasing political complexity
Late Woodland (Late Iroquoian)	600–350 BP	very large villages with smaller houses, politically allied regional populations, increasing trading network

Early Palaeo-Indian (EPI) (11,000–10,400 before present BP) settlement patterns suggest that small groups, or "bands", followed a pattern of seasonal mobility extending over large territories. Many (although by no means all) of the EPI sites were located on former beach ridges associated with Lake Algonquin, the post-glacial lake occupying the Lake Huron/Georgian Bay basin, and research/evidence indicates that the vegetative cover of these areas would have consisted of open spruce parkland, given the cool climatic conditions. Sites tend to be located on well-drained loamy soils, and on elevations in the landscape, such as knolls. The fact that assemblages of artifacts recovered from EPI sites are composed exclusively of stone skews our

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understanding of the general patterns of resource extraction and use. However, the taking of large game, such as caribou, mastodon and mammoth, appears to be of central importance to the sustenance of these early inhabitants. Moreover, EPI site location often appears to be located in areas which would have intersected with migratory caribou herds. In the Ottawa Valley it appears that the palaeo environment had not recovered sufficiently from the former glaciations to have allowed an EPI occupation. There is, however, some evidence of EPI incursion to the Rideau Lakes area.

The Late Palaeo-Indian (LPI) period (10,400-10,000 BP) is poorly understood compared to the EPI, the result of less research focus than the EPI. As the climate warmed the spruce parkland was gradually replaced and the vegetation of Southern Ontario began to be dominated by closed coniferous forests. As a result many of the large game species that had been hunted in the EPI period either moved north with the more open vegetation, or became locally extinct. Like the EPI, LPI peoples covered large territories as they moved around to exploit different resources. Environmental conditions in Eastern Ontario and the Ottawa Valley were sufficient to allow for a Late Palaeo-Indian occupation, although the evidence of such is still very limited. There is some evidence of LPI occupation on Thompson Island, in the St. Lawrence River near the junction of Ontario, Québec and New York State.

The transition from the Palaeo-Indian period to the Archaic archaeological culture of Ontario prehistory is evidenced in the archaeological record by the development of new tool technologies, the result of utilising an increasing number of resources as compared to peoples from earlier archaeological cultures, and developing a broader based series of tools to more intensively exploit those resources. During the Early Archaic period (10,000-8,000 BP), the jack and red pine forests that characterized the LPI environment were replaced by forests dominated by white pine with some associated deciduous elements. Early Archaic projectile points differ from Palaeo-Indian forms most notably by the presence of side and corner notching on their bases. A ground stone tool industry, including celts and axes, also emerges, indicating that woodworking was an important component of the technological development of Archaic peoples. Although there may have been some reduction in the degree of seasonal mobility, it is still likely that population density during the Early Archaic was low, and band territories large.

The development of more diversified tool technology continued into the Middle Archaic period (8,000-4,500 BP). The presence of grooved stone net-sinkers suggests an increase in the importance of fishing in subsistence activities. Another new tool, the bannerstone, also made its first appearance during this period. Bannerstones are ground stone weights that served as counterbalance for "atlatls" or spear-throwers, again indicating the emergence of a new technology. The increased reliance on local, often poor quality chert resources for chipped stone tools suggests that in the Middle Archaic groups inhabited smaller territories lacking high quality raw materials. In these instances lower quality materials which had been glacially deposited in local tills and river gravels were used.

This reduction in territory size appears to have been the result of gradual region-wide population growth, which forced a reorganization of subsistence patterns, as a larger population had to be

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supported from the resources of a smaller area. Stone tools designed specifically for the preparation of wild plant foods suggest that subsistence catchment was being widened and new resources being more intensively exploited. A major development of the later part of the Middle Archaic period was the initiation of long distance trade. In particular, native copper tools manufactured from sources near Lake Superior were being widely traded.

During the late part of the Middle Archaic (5,500-4,500 BP) a distinctive occupation, or tradition, known as the Laurentian Archaic, appears in south-eastern Ontario, western Quebec, northern New York and Vermont. Laurentian Archaic sites are found only within the transitional zone between the deciduous forests to the south and coniferous forests to the north known as the Canadian Biotic Province and are identifiable through the association of certain diagnostic tool types, including ground slate semi-lunar knives (or "ulus"), plummets for use in fishing, ground slate points and knives, and ground stone gouges, adzes and grooved axes. It is thought that there was less reliance on plant foods and a greater reliance on hunting and fishing in this region than for Archaic peoples in southern and south-western Ontario. Laurentian Archaic sites have been found in the middle Ottawa River valley, along the Petawawa River and Trent River watersheds and at Brockville.

The trend towards decreased territory size and a broadening subsistence base continued during the Late Archaic (4,500-2,900 BP). Late Archaic sites are far more numerous than either Early or Middle Archaic sites. It appears that the increase in numbers of sites at least partly represents an increase in population. However, around 4,500 BP water levels in the Great Lakes began to rise, taking their modern form. It is likely that the relative paucity of earlier Archaic sites is due to their being inundated under the rising lake levels.

The appearance of the first true cemeteries occurs during the Late Archaic. Prior to this period, individuals were interred close to the location where they died. However, with the advent of the Late Archaic and local cemeteries individuals who died at a distance from the cemetery would be returned for final burial at the group cemetery often resulting in disarticulated skeletons, occasionally missing minor bone elements (e.g. finger bones). The emergence of local group cemeteries has been interpreted as being a response to both increased population densities and competition between local groups for access to resources, in that cemeteries would have provided symbolic claims over a local territory and its resources.

Increased territoriality and more limited movement are also consistent with the development of distinct local styles of projectile points. The trade networks which began in the Middle Archaic expand during this period, and begin to include marine shell artifacts (such as beads and gorgets) from as far away as the Mid-Atlantic coast. These marine shell artifacts and native copper implements show up as grave goods, indicating the value of the items. Other artifacts such as polished stone pipes and slate gorgets also appear on Late Archaic sites. One of the more unusual of the Late Archaic artifacts is the "birdstone", small, bird-like effigies usually manufactured from green banded slate.

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Project Context

The Early Woodland period (2,900-2,200 BP) is distinguished from the Late Archaic period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples. The first pots were very crudely constructed, thick walled, and friable. It has been suggested that they were used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil. These vessels were not easily portable, and individual pots must not have enjoyed a long use life. There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that these poorly constructed, undecorated vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples.

Other than the introduction of this rather limited ceramic technology, the life-ways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic period. For instance, birdstones continue to be manufactured, although the Early Woodland varieties have "pop-eyes" which protrude from the sides of their heads. Likewise, the thin, well-made projectile points which were produced during the terminal part of the Archaic period continue in use. However, the Early Woodland variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance. The trade networks which were established in the Middle and Late Archaic also continued to function, although there does not appear to have been as much traffic in marine shells during the Early Woodland period. These trade items were included in increasingly sophisticated burial ceremonies, some of which involved construction of burial mounds.

In terms of settlement and subsistence patterns, the Middle Woodland (2,200 B.C.-1,100 B.P.) provides a major point of departure from the Archaic and Early Woodland periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish were becoming an even more important part of the diet. Middle Woodland vessels are often heavily decorated with hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. Consequently, even very small fragments of Middle Woodland vessels are easily identifiable.

It is also at the beginning of the Middle Woodland period that rich, densely occupied sites appear along the margins of major rivers and lakes. While these areas had been utilized by earlier peoples, Middle Woodland sites are significantly different in that the same location was occupied off and on for as long as several hundred years. Because this is the case, rich deposits of artifacts often accumulated. Unlike earlier seasonally utilized locations, these Middle Woodland sites appear to have functioned as base camps, occupied off and on throughout the course of the year. There are also numerous small upland Middle Woodland sites, many of which can be interpreted as special purpose camps from which localized resource patches were exploited. This shift towards a greater degree of sedentism continues the trend witnessed from the Middle Archaic, and provides a prelude to the developments that follow during the Late Woodland period.

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Project Context

There are three complexes of Middle Woodland culture in Ontario. The complex specific to eastern Ontario is known as “Point Peninsula” most notably represented by ceramics decorated with a stamped zigzag pattern applied at various angles to the exterior of the vessel, known as “pseudo scallop shell”. Another common decorative style is the dentate stamp, a comb-like tool creating square impressions. Middle Woodland components have been identified at the confluence of the Ottawa and Gatineau Rivers at Lac Leamy Park in Gatineau, Quebec.

The relatively brief period of the Transitional Woodland period is marked by the acquisition of cultivar plant species, such as maize and squash, from communities living south of the Great Lakes. The appearance of these plants began a transition to food production, which consequently led to a much reduced need to acquire naturally occurring food resources. Sites were thus occupied for longer periods and by larger populations. Transitional Woodland sites have not been discovered in eastern Ontario.

The Late Woodland period in southern Ontario is associated with societies referred to as the Ontario Iroquois Tradition. This period is often divided into three temporal components; Early, Middle and Late Iroquoian (see Table 1). In eastern Ontario, especially in the Ottawa River Valley, there is considerable overlap of people continuing to practice a hunting and gathering economy and those using limited horticulture as a supplement to gathered plants. For the most part, however, classic Late Woodland sites in eastern Ontario are limited to an area at the east end of Lake Ontario and along the St. Lawrence River valley. Early Iroquoian components have been identified near Pembroke on the Muskrat River; however, there is evidence of only limited use of cultivated plants. Middle Iroquoian sites have not been identified east of the Kingston area.

During the Late Iroquoian period a distinctive material culture emerges at the east end of Lake Ontario and along the St. Lawrence River up to Québec City, known as the St. Lawrence Iroquois (SLI). East of the city of Montreal SLI sites are characterised by two types of settlements; large semi-permanent villages, often surrounded by a palisade or earthworks, and associated satellite settlements. The inhabitants of these villages and satellites practiced horticulture of staple crops which made up the bulk of their diet. Other food resources were hunted, fished and gathered. SLI village sites can be extensive, up to 10 acres or more in size and composed of a number of longhouse structures. Special purpose satellite settlements, such as hunting and fishing camps, are smaller in area and in the number and size of structures within the settlement.

Our current knowledge suggests that there were six regional clusters of SLI sites along the St. Lawrence River, and possibly a seventh around Lake Champlain. The study area is part of the regional cluster that extends west from Lake St. Francis in the east to just past Cornwall in the west and includes sites on both the Ontario and New York side of the river (Figure 12.1 in Jamieson 1990).

1.3.3 Previously Identified Archaeological Sites and Surveys

In order to compile an inventory of archaeological resources, the registered archaeological site records kept by the MTCs were consulted. In Ontario, information concerning archaeological



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sites stored in the ASDB is maintained by the MTCS. This database contains archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden Block is approximately 13 kilometers east to west and approximately 18.5 kilometers north to south. Each Borden Block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found. The study areas under review are located within Borden Block BgFq.

Information concerning specific site locations is protected by provincial policy, and is not fully subject to the *Freedom of Information and Protection of Privacy Act*. The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MTCS will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

An examination of the ASDB has shown that no archaeological sites have been registered within a 1 km radius of the study area and no assessments have taken place within 50 m of the study area (Government of Ontario 2016a, 2016b).

1.3.4 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Stantec applied archaeological potential criteria commonly used by the Ontario Ministry of Tourism, Culture and Sport (Government of Ontario 2011b) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography and the general topographic variability of the area.

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. Finally, extensive land disturbance can eradicate archaeological potential (Wilson and Horne, 1995).

Distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect sites locations and types to varying degrees. The MTCS (Government of Ontario 2011b) categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, creeks;
- Secondary water sources: intermittent streams and creeks, springs, marshes and swamps;
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, shorelines of drained lakes or marshes; and

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT: BARLOW SOLAR ENERGY CENTRE

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- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, sandbars stretching into marsh.

The project area is located approximately 300 m south of the Raisin River.

Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. The property is located in the Glengarry Till Plain physiographic region, which is characterized by the presence of a large number of small streams, many of which are slow-flowing for great distances from their headwaters (Chapman and Putnam, 1984). Soils within the study area consist of North Bower clay loam, a poorly drained stone-free soil, and Eamer loam, well drained and moderately stony (Matthews and Richards 1954). These soils would have been suitable for Aboriginal and Euro-Canadian settlement and/or agricultural practices.

For Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; properties listed on the municipal register or designated under the *Ontario Heritage Act*; and properties that local histories or informants have identified with possible historical events, activities or occupations. The study area has been part of actively cultivated agricultural fields for over 100 years and beyond soil disturbances from agricultural activities there have been no intensive or extensive ground disturbances.

When the above listed criteria are applied to the study area, the archaeological potential for Aboriginal and historic Euro-Canadian sites is deemed to be moderate to high.

1.3.5 Existing Conditions

The project property is composed of 100 acres of cleared agricultural field in parts of Lots 20 and 21, Concession 4 of the Geographic Township of Cornwall, Township of South Stormont, United Counties of Stormont, Dundas, and Glengarry. The property is an irregularly shaped parcel bordered by Cornwall Centre Road to the south and wooded areas to the north, east, and west. The project also occurs along the road allowance between Concessions 4 and 5, Lots 18-21, of the Geographic Township of Cornwall, Township of South Stormont, United Counties of Stormont, Dundas, and Glengarry.

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Field Methods

2.0 FIELD METHODS

The Stage 1 and 2 assessment of the property of the Barlow study area was conducted on May 3 and August 29, 2016 under archaeological licence P415 issued to Patrick Hoskins, MA, of Stantec by the Ministry of Tourism, Culture, and Sport (MTCS).

During the Stage 1 and 2 assessment conditions were excellent and at no time were the field, the weather or the lighting conditions detrimental to the recovery of archaeological material. Photos 1 to 10 in Section 8.1 of this report confirm that field conditions met the requirements for a Stage 2 archaeological assessment, as per the MTCS's 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6 Standard 1a; Government of Ontario 2011b). Figure 8 provides an illustration of the Stage 1 and 2 assessment methods, as well as photograph locations and directions.

Table 5: Field and Weather Conditions

Date	Activity	Weather	Field Conditions
May 3, 2016	Stage 2 Pedestrian Survey	Sunny, hot	85-95% visibility
August 29, 2016	Stage 2 Test Pit Survey	Sunny, hot	Soils friable and dry

Approximately 90% of the study area consists of recently ploughed and well weathered fallow field. As such, it was determined that these portions would be assessed by pedestrian survey at a five-metre interval (Photos 1 to 5). The pedestrian survey was conducted in accordance with Section 2.1.1 of the MTCS's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b).

Approximately 3% of the study area was assessed using the test pit survey method in accordance with Section 2.1.2 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b) (Photos 6 to 7). The test pit survey was conducted at 5 metre intervals until test pits provided evidence of disturbance. Where disturbed test pits were encountered further test pits were excavated throughout the study area according to professional judgment, and where physically viable, to confirm the area was completely disturbed, as per Section 2.1.8 of the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011b). Each test pit was approximately 30 centimetres in diameter and excavated, where possible, five centimetres into sterile subsoil. The soils were examined for stratigraphy, cultural features, and evidence of fill. All soil was screened through six millimetre mesh hardware cloth to facilitate the recovery of small artifacts and then used to backfill the pit. No further archaeological methods were employed since no artifacts were recovered during the test pit survey.

Approximately 7% was documented as being previously disturbed due to recent road construction, specifically the excavation of ditches along either side of Cornwall Centre Road. This area, incorporating the north and south sides of Cornwall Centre Road from the southeast

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT: BARLOW SOLAR ENERGY CENTRE

Field Methods

corner of the study area to Power Dam Drive, was not surveyed, but was photo documented. This corridor consists of the existing RoW and ditches along Cornwall Centre Road (Photos 8 to 10).

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Record of Finds

3.0 RECORD OF FINDS

The Stage 1 and 2 archaeological assessment was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 3 below.

Table 6: Documentary Records

Document Type	Current Location of Document Type	Additional Comments
5 Pages of Field Notes	Stantec office in Ottawa	In original field book and photocopied in project file
2 Hand Drawn Maps	Stantec office in Ottawa	In original field book and photocopied in project file
1 Map Provided by Client	Stantec office in Ottawa	Hard and digital copies in project file
126 Digital Photographs	Stantec office in Ottawa	Stored digitally in project file

No archaeological resources were identified during the Stage 2 assessment of the project area.

4.0 ANALYSIS AND CONCLUSIONS

Stantec Consulting Ltd. was retained by Barlow Energy Centre Limited Partnership to complete a Stage 1 and 2 archaeological assessment of their proposed solar energy centre located on part Lots 20 and 21, Concession 4, Geographic Township of Cornwall, Township of South Stormont, United Counties of Stormont, Dundas, and Glengarry, Ontario. The Stage 1 archaeological assessment of the study area determined that archaeological potential was still present. A Stage 2 assessment using pedestrian and test pit survey methods was undertaken. No archaeological resources were identified.

Recommendations

5.0 RECOMMENDATIONS

The Stage 1-2 archaeological assessment of the proposed Barlow Solar Energy Centre did not identify any archaeological sites, and therefore **no further archaeological assessment is required.**

The Ministry of Tourism, Culture and Sport is asked to review and accept this report into the Ontario Public Register of Archaeological Reports.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ontario Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18 (Government of Ontario 1990c). 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, Culture and Sport, 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.

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 completed 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 Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

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*.

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 Ontario Ministry of Consumer Services.

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Images

8.0 IMAGES

8.1 PHOTOGRAPHS

Photo 1: View of Study Area, facing northwest



Photo 2: View of Study Area, facing southeast



STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT: BARLOW SOLAR ENERGY CENTRE

Images

Photo 3: View of Ground Conditions, facing southeast



Photo 4: Crew Performing Pedestrian Survey at 5 m Intervals, facing southeast



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Images

Photo 5: Crew Performing Pedestrian Survey at 5 m Intervals, facing northwest



Photo 6: Test Pit Survey at 5 m Intervals, facing southwest



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Images

Photo 7: Test Pit Survey at 5 m Intervals, facing southwest



Photo 8: View of Disturbed Ditch, facing southwest



STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT: BARLOW SOLAR ENERGY CENTRE

Images

Photo 9: View of Disturbed Ditch and RoW, facing northeast



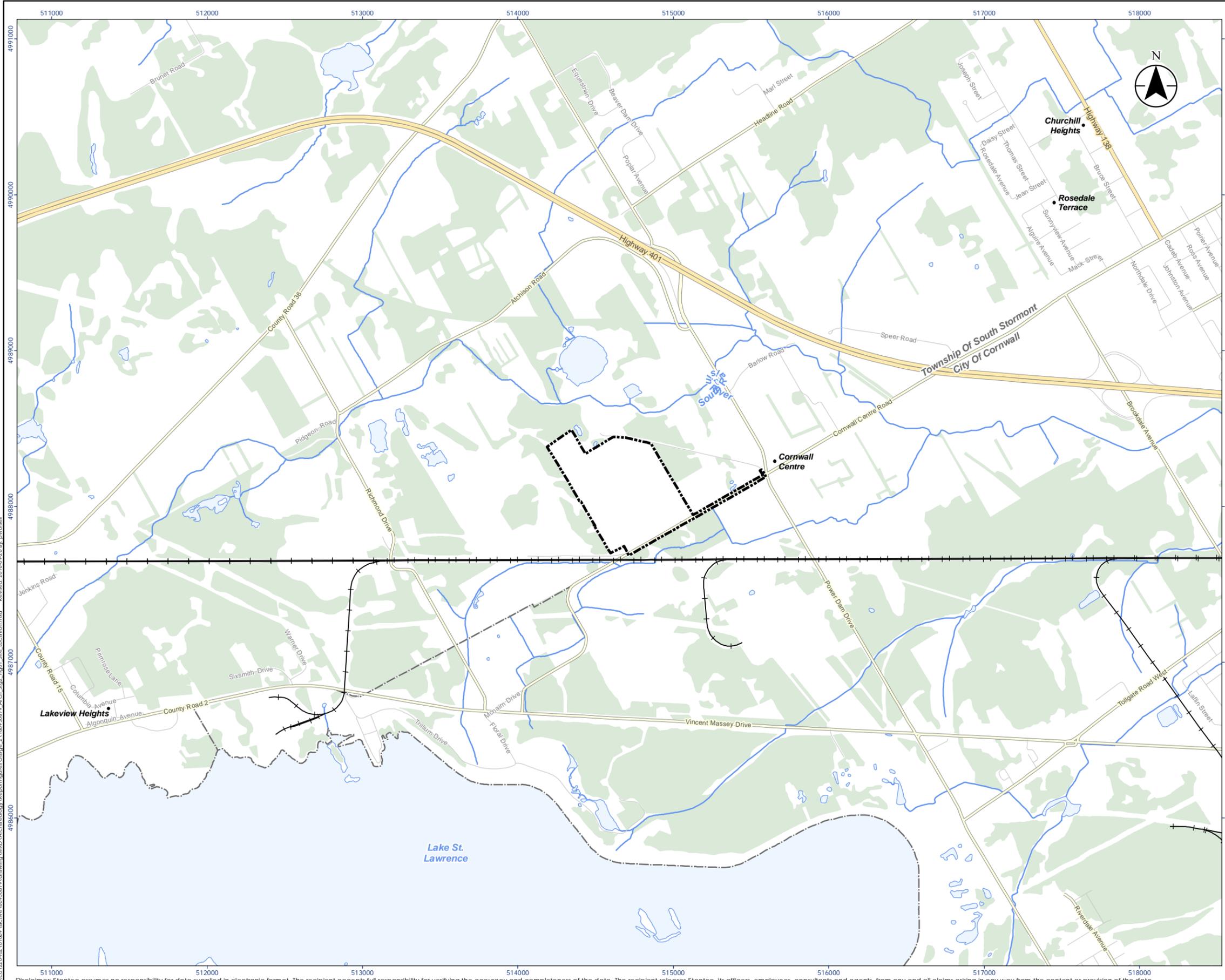
Photo 10: View of Disturbed Ditch and RoW, facing northeast



Maps

9.0 MAPS

All maps will follow on succeeding pages.



- Legend**
- Site Location
 - Expressway / Highway
 - Major Road
 - Minor Road
 - Railway - Operational
 - Watercourse
 - Waterbody
 - Municipal Boundary - Lower Tier
 - Wooded Area



- Notes**
1. Coordinate System: NAD 1983 UTM Zone 18N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.



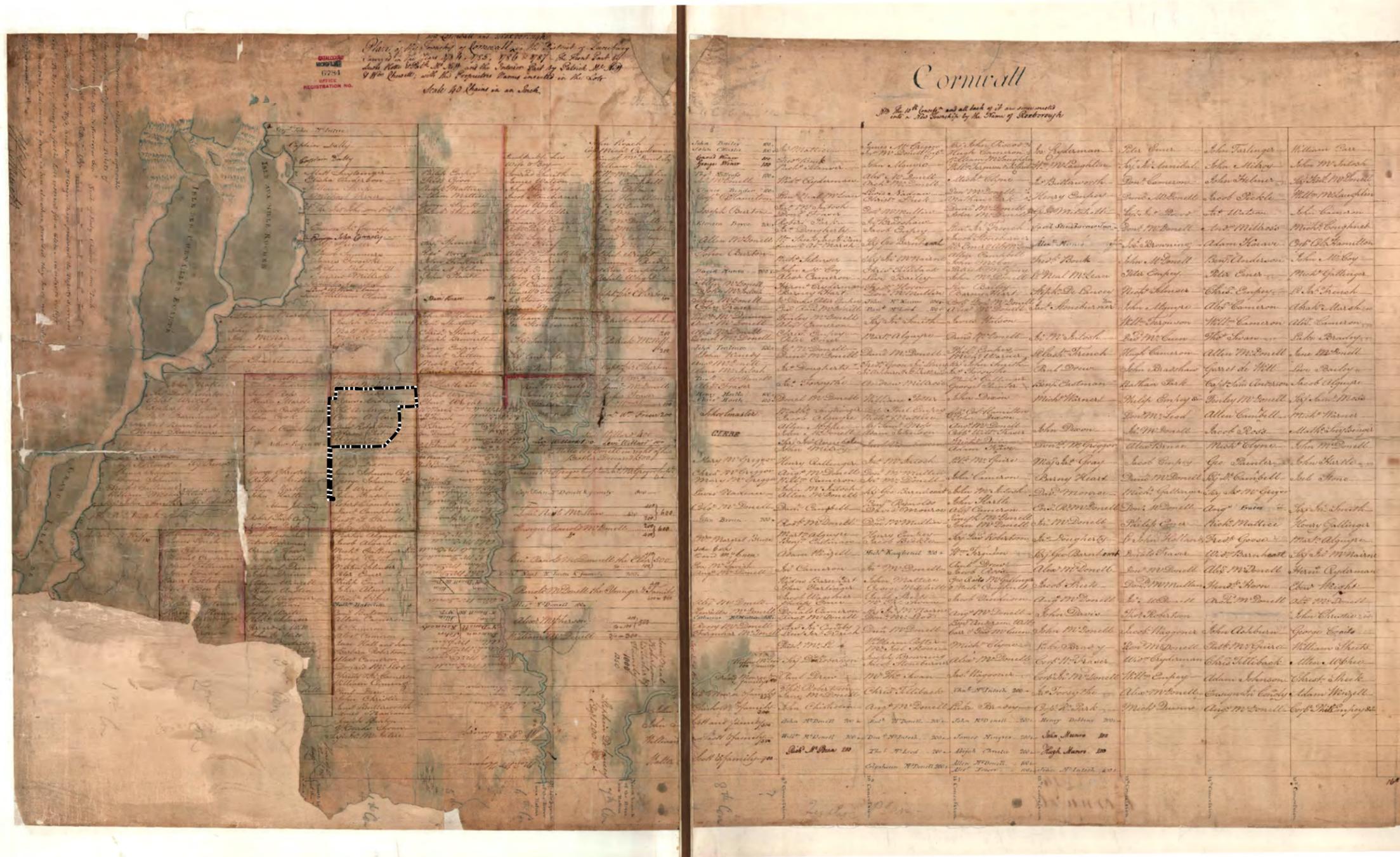
Project Location: United Counties of Stormont, Dundas and Glengary
 160950879 REVA
 Prepared by PW on 2016-09-20

Client/Project: BARLOW ENERGY CENTRE LIMITED PARTNERSHIP
 BARLOW SOLAR ENERGY CENTRE

Figure No.: 1
 Title: Site Location

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Notes
 1. Map is not to scale.
 2. Historic base map: McNiff, P. 1786b. Survey of Cornwall. Peterborough: Ministry of Natural Resources, Office of the Surveyor General.



Project Location
 United Counties of Stormont,
 Dundas and Glengary
 160950879 REVA
 Prepared by PW on 2016-09-21

Client/Project
 BARLOW ENERGY CENTRE LIMITED PARTNERSHIP
 BARLOW SOLAR ENERGY CENTRE

Figure No.
 3
 Title
 Portion of the 1786 McNiff Survey of
 Cornwall

\\Cd1220-102\01\609\active\60950879\drawing\NKD\Archaeology\ReportFigures\Stage_2\160950879_Arch_Sig2_Fig04_1794_Chewett_Plan_Twp_Cornwall.mxd Revised: 2016-09-21 By: mcrossell



Legend
 Site Location

Notes
1. Map is not to scale.
2. Historic base map: Chewett, W. 1794. No. 15.C. Plan of the Township of Cornwall [with notes]. Library and Archives Canada, National Map Collection 007095, M/430/Cornwall/1794.



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Client/Project
BARLOW ENERGY CENTRE LIMITED PARTNERSHIP
BARLOW SOLAR ENERGY CENTRE

Figure No.
4

Title
Portion of the 1794 Chewett Plan of the Township of Cornwall

Legend
 Site Location

Notes
 1. Map is not to scale.
 2. Historic base map: Maclear, Thomas. 1852. Counties of Prescott and Russell, and Stormont, Dundas and Glengarry, Library and Archives Canada, National Map Collection 002894, H3/420/Prescott/(1852)/1.

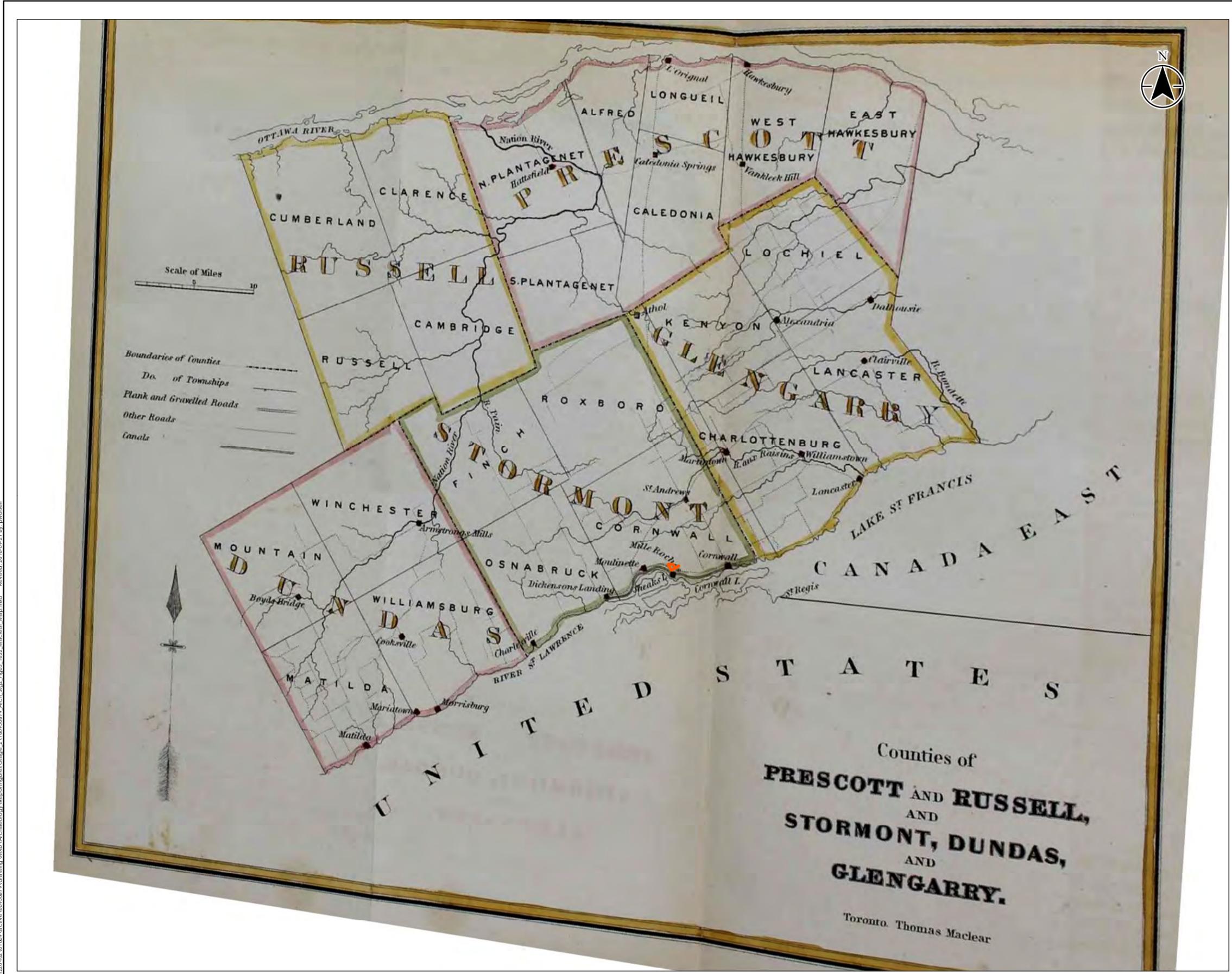


Project Location: United Counties of Stormont, Dundas and Glengarry
 160950879 REVA
 Prepared by PW on 2016-09-21

Client/Project: BARLOW ENERGY CENTRE LIMITED PARTNERSHIP
 BARLOW SOLAR ENERGY CENTRE

Figure No.
 5

Title
 Portion of the 1852 Maclear Map of the Counties of Prescott and Russell, and Stormont, Dundas and Glengarry



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 Revised: 2016-09-21 By: pwoosell

Legend
 Site Location



Notes
 1. Map is not to scale.
 2. Historic base map: Walling, Henry F. 1862. Map of the Counties of Stormont, Dundas, Glengarry, Prescott & Russell, Canada West. Library and Archives Canada, National Map Collection 0021998, H2/420/Stormont/1862.

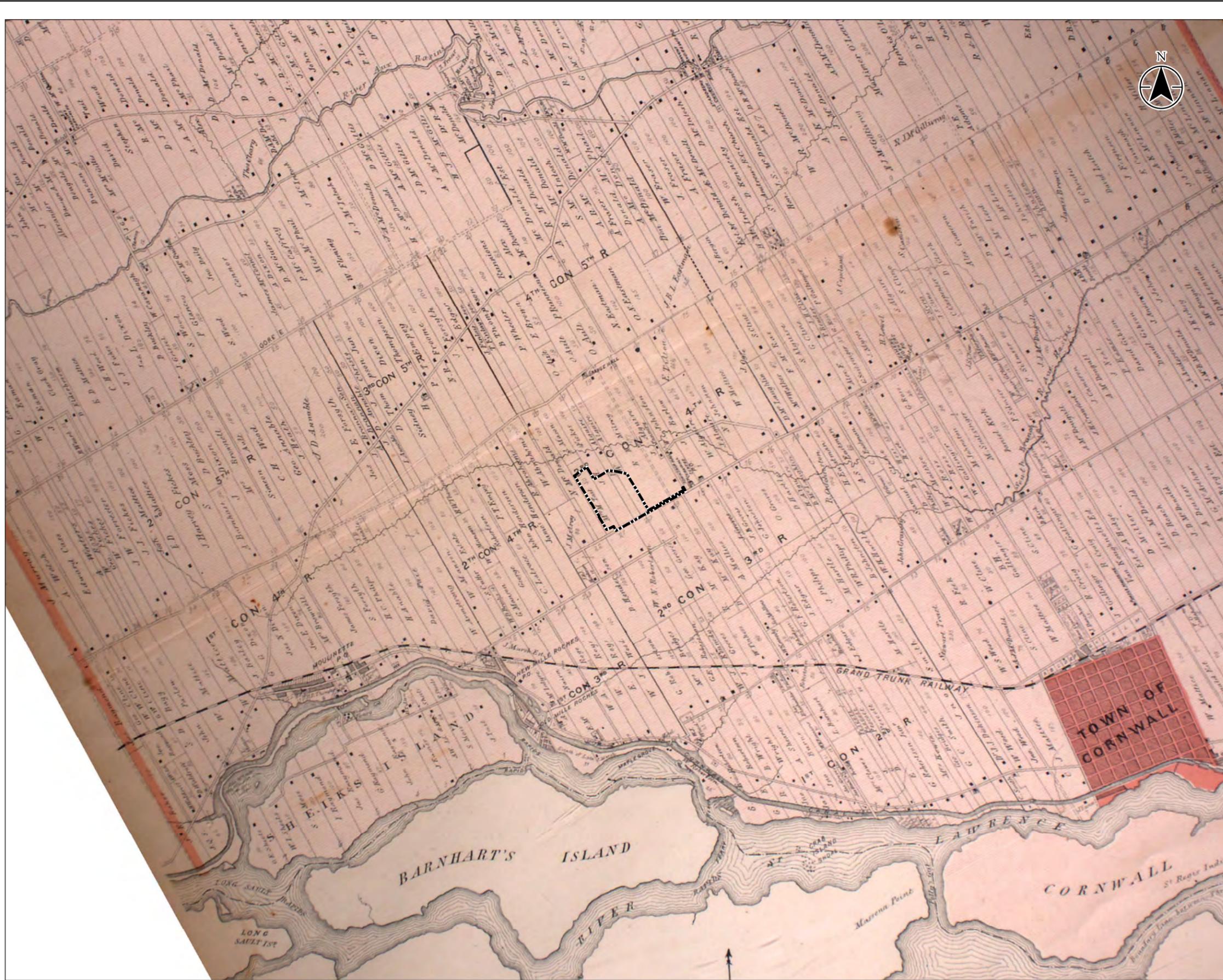


Project Location
 United Counties of Stormont,
 Dundas and Glengarry
 160950879 REVA
 Prepared by PW on 2016-09-21

Client/Project
 BARLOW ENERGY CENTRE LIMITED PARTNERSHIP
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Figure No.
 6

Title
 Portion of the 1862 Walling Map of the
 Counties of Stormont, Dundas, Glengarry,
 Prescott and Russell Counties



Legend
 Site Location

Notes
 1. Map is not to scale.
 2. Historic base map: Belden, H., 1881. Prescott and Russell Supplement in Illustrated atlas of the Dominion of Canada Toronto: H. Belden & Co.

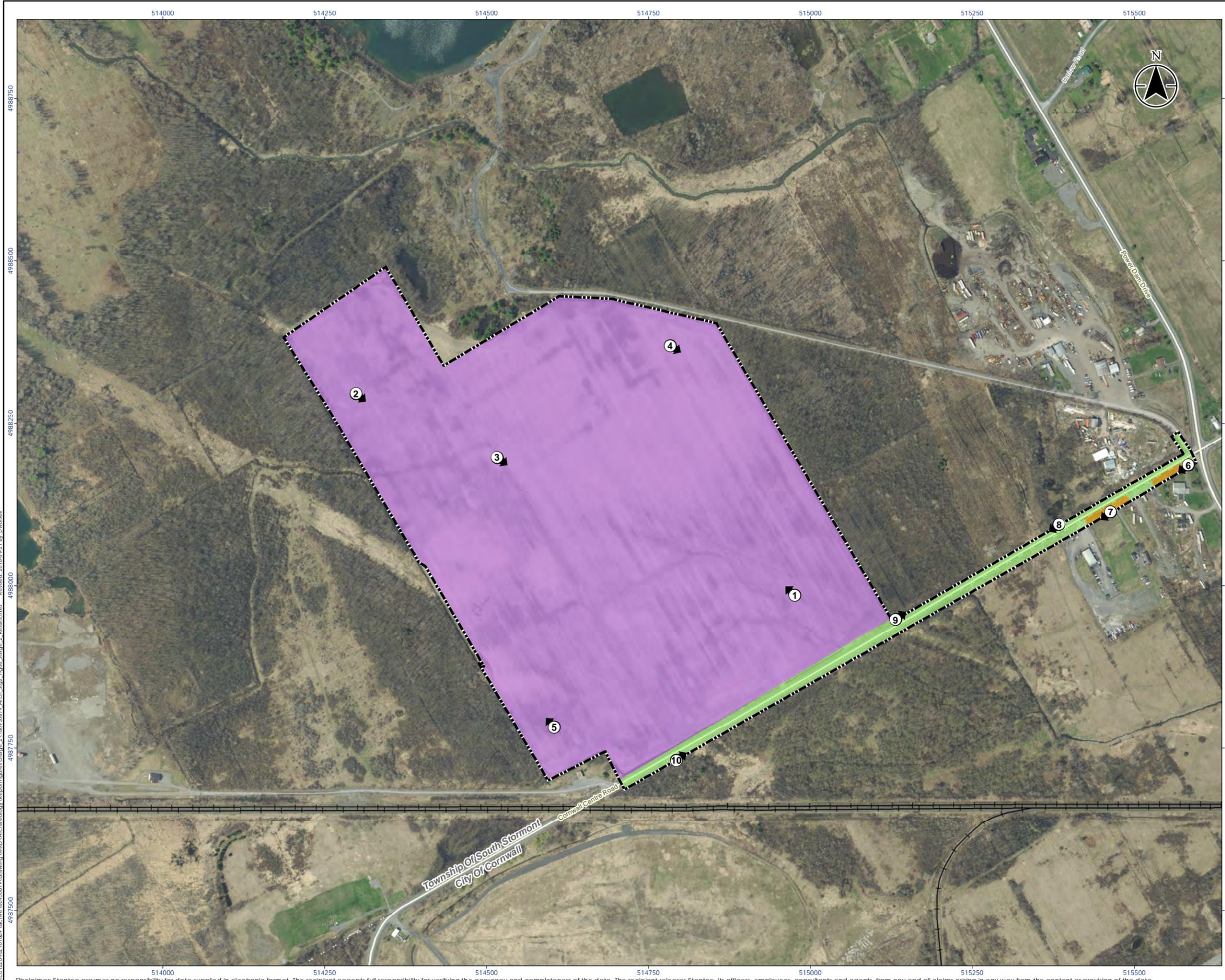


Project Location
 United Counties of Stormont,
 Dundas and Glengary
 160950879 REVA
 Prepared by PW on 2016-09-22

Client/Project
 BARLOW ENERGY CENTRE LIMITED PARTNERSHIP
 BARLOW SOLAR ENERGY CENTRE

Figure No.
 7
 Title
 Portion of the 1879 Belden & Co. Illustrated
 Historical Atlas of the Counties of
 Stormont, Dundas, and Glengary

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 Revised: 2016-09-22 By: dworesell



Legend

- Site Location
- Major Road
- Minor Road
- Railway - Operational
- Municipal Boundary - Lower Tier
- Photo Location

Stage 2 Results

- Pedestrian Surveyed at 5 m Intervals
- Previously Disturbed, Not Surveyed
- Test Pitted to Confirm Disturbance



Notes

1. Coordinate System: NAD 1983 UTM zone 18N
2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2016.
3. Orthoimagery: © First Base Solutions, 2016. Imagery taken in 2014.



Project Location: United Counties of Stormont, Dundas and Glengary
 160950879 REVA
 Prepared by PW on 2016-09-21

Client/Project: BARLOW ENERGY CENTRE LIMITED PARTNERSHIP
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Figure No.: 8

Title: Stage 2 Results

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 Revised: 2016-09-21 By: davisell
 4988000
 4987500

Closure

10.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report. We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this report.

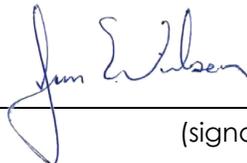
Quality Review



(signature)

Colin Varley, MA, RPA (P002)

Independent Review



(signature)

Jim Wilson, MA (P001)