



ORIGINAL REPORT:

**STAGE 1 ARCHAEOLOGICAL ASSESSMENT
PROPOSED DRAFT PLAN OF SUBDIVISION
613 HELENA STREET, PART OF LOT 1, CONCESSION 2
ON LAKE ERIE, TOWNSHIP OF BERTIE, TOWN OF FORT
ERIE, REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO**

**Submitted to:
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AND

THE ONTARIO MINISTRY OF TOURISM, CULTURE AND SPORT

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P.I.F. # P066-0283-2017
Amec Foster Wheeler Project # SWW171582
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EXECUTIVE SUMMARY

Amec Foster Wheeler Environment & Infrastructure (“Amec Foster Wheeler”) was retained by 1891187 Ontario Inc. (the CLIENT) to conduct a Stage 1 archaeological assessment for a proposed draft plan of subdivision. This archaeological assessment was triggered under the Planning Act and was conducted prior to development. The property is located at 613 Helena Street in the Town of Fort Erie, Regional Municipality of Niagara. Historically, the property was located on Part of Lot 1, Concession 2 on Lake Erie, in the Township of Bertie, County of Welland, Ontario (Appendix A: Figures 1 and 2). The study area is approximately 8.16 hectares (20.16 acres) in size.

The Stage 1 archaeological assessment was carried out in accordance with the Ontario Ministry of Tourism, Culture and Sport’s (“MTCS”) *Standards and Guidelines for Consultant Archaeologists* (2011), under an Ontario Professional Licence to Conduct Archaeological Fieldwork (P066) held by Kristy O’Neal, Senior Archaeologist at Amec Foster Wheeler. The project information was acknowledged by the MTCS on 20 December 2017 with the approval of PIF number P066-0283-2017 (Stage 1). Permission to conduct the property inspection was granted to Amec Foster Wheeler by 1891187 Ontario Inc. on 19 December 2017. Permission to conduct the property inspection extended to all required archaeological fieldwork activities, including the recovery and removal of artifacts.

The Stage 1 background study has indicated that undisturbed, relatively level and well drained portions of the subject property have archaeological potential and warrant Stage 2 property assessment for six principal reasons: 1) the presence of an historic farmstead as shown in the 1861 census and 1876 historic atlas map; 2) the presence of historic Helena Street within 100 m; 3) the study area is located just outside the historic limits of the Town of Fort Erie; 4) the presence of seven archaeological sites within a one-kilometre radius providing direct evidence that this general area had been exploited by pre-contact Aboriginal and historic Euro-Canadian peoples; 5) the presence of a natural water source, Kraft Drain, just over 300 m to the east; and 6) the presence of a marsh within the study area.

On the basis of the Stage 1 property inspection and a review of recent land use history, Amec Foster Wheeler has identified that: 1) 3% (0.24 hectares) of the study area does not require Stage 2 assessment because archaeological potential has been removed due to soil disturbance; 2) 1% (0.11 hectares) of the study area does not require Stage 2 assessment because it is permanently wet; 3) 96% (7.81 hectares) of the study area retains archaeological potential and warrants Stage 2 assessment (Appendix A: Figure 5).

Areas that retain archaeological potential include 4.23 hectares of grassed pasture lands where ploughing is viable and 3.58 hectares of landscaped lawn and woodlot where ploughing is not viable. The pasture lands should be assessed using pedestrian survey

at 5-m intervals. The non-ploughable portion of the study area should be assessed using test pit survey at 5-m intervals.

In light of these results, the following recommendations are made, subject to the advice on compliance with legislation contained in Section 6.0:

1. A Stage 2 archaeological assessment in the form of a test pit survey should be completed on the landscaped area around the existing house and woodlot (unploughable land) (3.58 ha in size) as shown in Appendix A: Figure 5. The test pits should be excavated by hand at regular five-metre intervals in a grid-pattern and to a depth of 5 cm into the subsoil. The stratigraphy of soils excavated during test pitting should be examined in order to detect cultural soil horizons. In addition, excavated soils are to be screened through ¼ inch (6 mm) mesh in order to facilitate the recovery of archaeologically significant artifacts. The pattern and intensity of test pit placement may be altered due to changes in archaeological potential in different parts of a study area and/or the presence of disturbed soils. Any areas of 'disturbance' should be evaluated and photo-documented.

If archaeological resources are found their exact distribution should be documented and any diagnostic artifacts recovered and inventoried. Upon discovery of cultural materials, the survey grid should be continued to determine whether there are enough archaeological resources to meet the criteria for making a recommendation to carry out a Stage 3 assessment. In the event that insufficient archaeological resources are recovered, eight additional test pits are to be dug in a 2 to 2.5 metre radius around the positive test pit, followed by the excavation of a 1 x 1 m unit at the positive test pit. Cultural artifacts encountered are to be collected and bagged according to provenience.

2. A Stage 2 archaeological assessment in the form of a pedestrian survey should be completed on the fallow field (4.23 ha in size) as shown in Appendix A: Figure 5. The fields must be ploughed by means of mouldboard ploughing and, if necessary, disk harrowing. At least 80% of the ground surface must be visible in order to conduct the pedestrian survey. The fields should be allowed to weather through one heavy, or several light rainfalls, to improve surface visibility. Areas of archaeological potential are to be surveyed at regular five-meter intervals.

If archaeological resources are encountered, the 5 m transect should be decreased to 1 m intervals over a minimum 20 m radius around the archaeological find until the full extent of the scatter has been identified or the find is determined to be isolated. All formal artifact types and diagnostic categories are to be collected and enough artifacts should be left *in-situ* to relocate the site in the event that it is necessary to conduct further assessment. The exact location of archaeological resources should be documented using one or more of a combination of: the Global Positioning System, topographic survey or other precision measurements.

3. The remainder of the study area, including 0.11 hectares of permanently wet soil and 0.24 hectares of previously disturbed land does not require further archaeological assessment due to low archaeological potential.

The above recommendations are subject to Ministry of Tourism, Culture and Sport approval, and it is an offence to alter any of the study area without Ministry of Tourism, Culture, and Sport concurrence.

No grading or other activities that may result in the destruction or disturbance to the study area is permitted until notice of Ministry of Tourism, Culture, and Sport approval has been received.

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1.0 PROJECT CONTEXT

1.1 Development Context

Amec Foster Wheeler Environment & Infrastructure (“Amec Foster Wheeler”) was retained by 1891187 Ontario Inc. (the CLIENT) to conduct a Stage 1 archaeological assessment for a proposed draft plan of subdivision. This archaeological assessment was triggered under the Planning Act and was conducted prior to development. The property is located at 613 Helena Street in the Town of Fort Erie, Regional Municipality of Niagara. Historically, the property was located on Part of Lot 1, Concession 2 on Lake Erie, in the Township of Bertie, County of Welland, Ontario (Appendix A: Figures 1 and 2). The study area is approximately 8.16 hectares (20.16 acres) in size.

The Stage 1 archaeological assessment was carried out in accordance with the Ontario Ministry of Tourism, Culture and Sport’s (“MTCS”) *Standards and Guidelines for Consultant Archaeologists* (2011), under an Ontario Professional Licence to Conduct Archaeological Fieldwork (P066) held by Kristy O’Neal, Senior Archaeologist at Amec Foster Wheeler. The project information was acknowledged by the MTCS on 20 December 2017 with the approval of PIF number P066-0283-2017 (Stage 1). Permission to conduct the property inspection was granted to Amec Foster Wheeler by 1891187 Ontario Inc. on 19 December 2017. Permission to conduct the property inspection extended to all required archaeological fieldwork activities, including the recovery and removal of artifacts.

This report presents the results of the Stage 1 background research and property assessment and makes pertinent recommendations.

1.2 Scope of Work

This Stage 1 archaeological assessment was carried out in accordance with the Terms of Reference provided in Amec Foster Wheeler’s work agreement dated 23 November 2017.

A Stage 1 archaeological assessment is a systematic qualitative process executed in order to assess the archaeological potential of a property based on its historical use and its potential for early Euro-Canadian (early settler) and pre-contact Aboriginal occupation. The objectives of a Stage 1 background study are: 1) to provide information about the property’s geography, history, previous archaeological fieldwork and current land condition; 2) to evaluate in detail the property’s archaeological potential which will support recommendations for Stage 2 property assessment for all or parts of the property if warranted; and, 3) to recommend appropriate strategies for Stage 2 property assessment if warranted.

The Stage 1 background study was conducted in accordance with the *Standards and Guidelines for Consultant Archaeologists, 2011*, set out by the MTCS, and with the Ontario Heritage Act, R.S.O. 1990, c.0.18.

The scope of work for the Stage 1 background study consisted of the following tasks:

- Contacting the MTCS to determine if recorded archaeological sites exist in the vicinity (one-kilometre ["km"] radius) of the property, through a search of the Ontario Archaeological Sites Database maintained by that Ministry;
- Contacting the MTCS to determine if there are any known reports of previous archaeological field work within a radius of 50 metres ("m") around the study area;
- A desktop review of the study area's physical setting to determine its potential for both historic and pre-contact human occupation, including its topography, hydrology, soils, vegetation, and proximity to important resources and historic transportation routes;
- A review of the potential for historic occupation as documented in historical atlases and other archival sources;
- A visual inspection of the study area in order to gather first-hand and current evidence of the property's physical setting, and to aid in delineating areas where archaeological potential may have been impacted or removed by previous land-use practices;
- Mapping and other relevant graphics; and,
- Preparing a report of findings with recommendations regarding the need for any further archaeological assessment.

2.0 STAGE 1 BACKGROUND STUDY

2.1 Archaeological Context

2.1.1 Registered Archaeological Sites

Amec Foster Wheeler conducted the requisite Stage 1 background research. First, Amec Foster Wheeler searched the Ontario Archaeological Sites Database in order to ascertain if previously registered archaeological sites have been identified in close proximity to the study area.

In Ontario, information concerning archaeology sites is stored in the Ontario archaeological Sites Database (OASD) maintained by the MTCS. This database contains archaeological registered sites within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on longitude and latitude. A Borden block is approximately 13 km east to west, and approximately 18.5 km north to south. Each Borden block is referred to by a four-letter designation and sites located within the block are numbered sequentially as they are found. The subject property is located within the AfGr Borden Block.

Based on a search of the OASD through PastPortal, there are no registered archaeological sites located within the current study area, but there are seven registered archaeological sites within a 1-km radius: three pre-contact Aboriginal sites, one historic Euro-Canadian site, two multi-component sites; and one site with unknown temporal or cultural affiliations.

Table 1 provides a summary of these sites.

Table 1: Registered Archaeological Sites within a 1-km Radius						
Borden Number	Site Name	Cultural Affiliation	Site Type	Researcher	Distance to Study Area	Current Development Review Status
AfGr-5	Erie Beach	Euro-Canadian, Woodland	Battlesite, Homestead, Campsite	Mayer (1992/2000), Wilson (2003), Austin (2006), Woodley (2013)	995 m	Further CHVI*
AfGr-6	Snake Hill	Archaic, American	Campsite/ Cemetery	Williamson (1987)	1080 m	Unknown
AfGr-51		Aboriginal	Unknown	Hossack (2006)	930 m	Further CHVI*
AfGr-52		Aboriginal	Unknown	Hossack (2006)	905 m	No further CHVI*
AfGr-78	Erie Beach Park	Euro-Canadian	Unknown	Henry (2017)	895 m	Further CHVI*
AfGr-79		Aboriginal	Lithic Scatter	Henry (2017)	985 m	Further CHVI*
AfGr-81		Unknown	Unknown	Bhardwaj (2017)	1,260 m	Unknown

*CHVI – cultural heritage value or interest

2.1.2 *History of Archaeological Investigations*

Amec Foster Wheeler completed a search for reports directly on PastPortal on 20 December 2017. Based on this search (by address, lot and concession and above mentioned archaeological sites), no archaeological assessments have been conducted within 50 m of the subject lands.

2.1.3 *Environmental Context*

Fieldwork for this project was conducted on 21 December 2017. At that time, the study area was comprised of a farmstead with a house, barns and garage with a paved and gravel driveway and parking area. The farmstead is surrounded by pasture lands with a pond and a small marsh area. The westernmost section of the study area is wooded.

The study area (Appendix A: Figures 1 and 2) is situated within the Haldimand Clay Plain physiographic region (Chapman and Putnam 1984: 113). This area is made up of a series of parallel belts that were once submerged in Lake Warren. The highest ground adjoins the Niagara Escarpment. The main part of historic Welland County is characterized by level topography and poor drainage, with several square km being covered in peat bogs. The study area is in the southeastern part of the clay plain, where the land is made up of lacustrine beaches (Chapman and Putnam 1984:157).

The *Soils of The Regional Municipality of Niagara* (Kingston and Presant 1989) indicates that dominant surface soil type is Malton silty clay, which is characterized by few stones, poor drainage and fairly level topography.

It is crucial to consider the proximity of water sources in any evaluation of archaeological potential because the availability of water is arguably the single most important determinant of human land use, past and present. The *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011) lists proximity to water as one of the prime indicators of potential for the presence of archaeological sites. Water, both potable and non-potable, facilitated the transportation of people and goods and served to focus animal and vegetable resources. According to the 2011 *Standards and Guidelines for Consultant Archaeologists*, lands within 300 m of an extant or formerly mapped river or creek have potential for the presence of early Aboriginal and Euro-Canadian archaeological sites. The nearest water sources to the current study area are a pond and a marsh located within the subject lands. The nearest water source outside the study area is the Kraft Drain, which runs 325 m to the northwest (Appendix A: Figures 1 and 2). Lake Erie is located 1.06 km to the south.

In summary, a review of the archaeological context supports a conclusion of overall archaeological potential and the need for a Stage 2 assessment. There are seven archaeological sites located on nearby lands and there is a pond and a marsh within the study area.

2.2 Historical Context

2.2.1 *A Cultural History for Southwestern Ontario*

The majority of interpretations of pre-contact Aboriginal adaptations in Ontario derive from the analysis and interpretation of stone tools. Stone tools are made from specific types of rocks that fracture in ways that can be controlled, so that they are easily shaped into useful forms. These rocks include chert, chalcedony, quartzite, petrified wood, and volcanic glass, known as obsidian. Most stone tools found in southern Ontario are formed from types of chert that outcrop in local limestone formations, such as: Onondaga and Haldimand cherts, found near the north shore of Lake Erie; Kettle Point chert, which outcrops near Lake Huron; and Collingwood chert, which outcrops along the Niagara Escarpment near Georgian Bay.

Stone tools used as spear tips and arrowheads are the most commonly studied tool type. These are referred to as projectile points. As projectile point technology changed over time, styles and shapes of points changed also. Studying these changing point types has resulted in the development of a chronological framework for pre-contact times prior to 3,000 years ago, when First Nations groups began to make clay pottery. Later periods are defined both by point types and pottery characteristics. Radiocarbon dating of archaeological sites can only be done when organic materials are collected from those sites, so the dating of most sites is done by comparing the artifacts from dated sites to those from undated sites. The following is an overview of the pre-contact history of southern Ontario as understood by archaeologists.

The cultural history of southern Ontario began approximately 11,000 years ago when the glaciers had melted and the land was re-exposed. The land was quickly settled by bands of hunters and gatherers who are thought to have been large game hunters. These people used large spear points that are distinctively shaped with long central grooves, called “flutes”. Archaeologists have defined a number of point types that date to this time, including Gainey, Barnes, Crowfield, and Hi-Lo types. This period is referred to as the Paleo-Indian Period and it is thought to have lasted until approximately 9,000 years ago.

After 9,500 years ago, there was a long period when the climate was variable and the bare lands left by the glaciers were becoming re-forested, resulting in patchier, more diverse ecozones. During this time, which lasted until 3,000 years ago, people were adapting to diverse environmental settings. There appears to have been more reliance on local stone for making tools and more variable tool manufacturing technologies. The adoption of a spear-throwing board, known as an atlatl, was an important innovation, resulting in the ability to throw smaller darts with more force. Projectile points from this period, called the Archaic Period, are commonly side or corner-notched and are smaller than those of the preceding period. The Archaic adaptation is generally thought to have centred on localized resources, often forest resources, and groups of people are thought to have been less mobile, an adaptation that continued to develop until the arrival of Europeans.

In southern Ontario, the Archaic Period is divided into the Early, Middle and Late Archaic. Early point types include serrated Nettling and Bifurcate Base points. Middle types include Brewerton Corner Notched and Otter Creek, and Late types include Lamoka, Genesee, Crawford Knoll, and Innes. Most of these are named after sites where they were first identified.

The Archaic Period is followed by the Woodland Period. The major technological change in the Early Woodland Period is the introduction of pottery. During this time, people are thought to have developed more community organization and the manufacture of clay pottery is thought to indicate less residential mobility. Burial sites dating to this time often display evidence of ceremonial activities. Projectile points made at this time include much smaller types, probably used as arrow tips. Point types include Meadowood and Kramer and early ceramics were crudely-made vessels with conoidal (pointed) bases. The Early Woodland Period transitioned into the Middle Woodland Period approximately 2,400 years ago.

During the Middle Woodland Period in southern Ontario community and kin identity became more deeply entrenched, and more sedentary communities developed. Point types made at this time include Saugeen, Vanport, and Snyders. Ceramic vessels were conoidal in shape, but were decorated with stamped designs in the soft clay. The Middle Woodland Period transitioned into the Late Woodland Period A.D. 500–900 with the earliest direct evidence for agriculture.

The Late Woodland Period saw the development of recognizable Iroquoian and Algonkian cultures in southern Ontario, characterized by the intensification of agriculture and the increased utilization of corn. Greater sedentism led to increasing settlement populations and greater complexity of settlement organization. Sites dating to this time are often found on terraces overlooking the floodplains of large rivers. Iroquoian villages tended to be small, palisaded compounds with longhouses occupied by families. As the Late Woodland Period progressed, more intercommunity communication and integration became necessary to maintain the sedentary agricultural way of life. Later Iroquoian villages were larger and more heavily palisaded and longhouses were larger also.

When European explorers and missionaries arrived in southern Ontario in the early seventeenth century, they described the local Iroquoian social organization as being under the direction of elected chiefs. Tribal confederacies and allegiances resulted in intertribal warfare, which was only made worse by the European presence. Three Ontario Iroquoian confederacies, the Huron, Petun, and Neutral, were driven from their traditional territories before the middle of the seventeenth century.

Archaeologists tend to describe a period of transition from Late Woodland to Historic times as “proto-historic”. The dating of this period is variable and may be different from site to site within a region as it describes a time when local First Nations were acquiring European trade goods indirectly through other Aboriginal middlemen rather than directly from European traders. This period was generally very short and is often difficult to differentiate

archaeologically from later historic times, when trade goods were widely available, but it usually is identified by evidence of an intact traditional cultural adaptation with occasional European items used in traditional ways.

Table 2: Simplified Cultural Chronology of Southern and Eastern Ontario	
Period	Complexes/Cultures, Some Diagnostic Artifacts
Early Paleo-Indian (9000–8500 B.C.)	Small nomadic hunter-gatherer bands. EPI rarely found in Eastern Ontario. Gainey, Barnes, Crowfield fluted points.
Late Paleo-Indian (8500–7500 B.C.)	Small nomadic hunter-gatherer bands. Hi-Lo, Holcombe points, Lanceolate Bifaces.
Early Archaic (7500–6000/4500 B.C.)	Small nomadic hunter-gatherer bands. Nettling, Stanley/Neville points.
Middle Archaic (6000/4500–2500 B.C.)	Transition to territorial settlements. Seasonal round of subsistence introduced. Thebes (6000–5000 B.C.), Otter Creek points (4500–3000 B.C.). Brewerton Complex (3000–2500 B.C.) . Brewerton points. Laurentian Complex (6000 B.C.–2500 B.C.) (Eastern Ontario)
Late Archaic (2500–1000 B.C.)	More numerous territorial hunter-gatherer bands, increasing use of exotic materials and artistic items for grave offerings, regional trade networks. Narrowpoint Complex (2500–1850 B.C.) . Lamoka points. Broadpoint Complex (1850–1650 B.C.) . Adder Orchard, Genesee points. Smallpoint Complex (1650–1000 B.C.) . Crawford Knoll, Innes points. Terminal Archaic (1100–1000 B.C.) Glacial Kame Complex . Hind points.
Early Woodland (1000–400 B.C.)	Pottery introduced. Meadowood Notched points, Meadowood Cache Blades, Kramer, Adena points. Meadowood Complex (1000–400 B.C.) . Middlesex Complex (650–400 B.C.) . Introduction of true cemeteries.
Middle Woodland (400 B.C.–A.D. 500/900)	Saugeen, Snyders, Vanport, Port Maitland points. Point Peninsula Complex (Southcentral and Eastern Ontario) Saugeen Complex (southeast of Lake Huron and the Bruce Peninsula, London area, and possibly as far east as the Grand River) Couture Complex (Lake St. Clair and the western end of Lake Erie). Burial ceremonialism.
Transitional Woodland (A.D. 500–900)	Agriculture introduced. Levanna, Jacks Reef points. Princess Point Complex (Eastern end of Lake Erie and the western end of Lake Ontario). Sandbanks Complex (Kingston area).
Late Woodland (A.D. 900–1650)	Tribal differentiation. Transition to settled village life. Dewaele, Glen Meyer Tanged, Triangular Naticoke, Notched Naticoke, Triangular Daniels/Madison points. Ontario Iroquoian and St. Lawrence Iroquoian Traditions (Southcentral and Eastern Ontario, respectively). Algonkian Western Basin Tradition (Lake St. Clair and the western end of Lake Erie).

Table 2: Simplified Cultural Chronology of Southern and Eastern Ontario

Period	Complexes/Cultures, Some Diagnostic Artifacts
Early Post-Contact (A.D. 1650–1763)	Iroquoian, Algonkian migrations and resettlement. French exploration and colonization
Late Post-Contact (A.D. 1763–1867)	Iroquoian, Algonkian migrations and resettlement. British and other European immigration increases.

Archaeologically, the years since the arrival of Europeans are referred to as the Historic Period. In southern Ontario, significant Historic sites are those that have an affiliation with an important historic event, figure, or family, but can also be anything dating to the original European settlement of a region. Often, these sites date to before A.D. 1830.

2.2.2 Review of Historical Records

During pre-contact and early contact times, the vicinity of the study area would have comprised a mixture of deciduous trees, coniferous trees and open areas. In the early nineteenth century, Euro-Canadian settlers arrived and began to clear the forests for agricultural purposes. In the nineteenth and early twentieth centuries the study area and surrounding arable land were primarily used for agricultural purposes.

The study area was historically located within the Township of Bertie, Welland County. Welland County was formed in 1851, when land was broken away from the southern section of Lincoln County (Mika & Mika, 1983). The county was named after the Welland River, which, in turn, was named by John Graves Simcoe after a stream in Lincolnshire, England (Middleton & Landon, 1927). The townships in this county were among the earliest settlements in Upper Canada, and were first populated by United Empire Loyalists who came to the area after the American Revolutionary war (Carter, 1984b). The building of the first Welland Canal in the 1820's also helped stimulate the growth of settlement in the area (Mika & Mika, 1983). The earliest recorded European visitor to the county is Father Louis Hennepin, who explored the area as a missionary in 1678. He is best known for publishing an account of his travels, which includes the first written description of Niagara Falls, published in 1689 (Page, 1876).

The French had established a missionary post in the what is now Bertie Township around 1750. This post was destroyed during the Seven Year War and replaced by a British fort near the site of what is now Fort Erie (Mika & Mika 1977). Bertie Township was first settled in 1784 by United Empire Loyalists and was named in honour of Sir Peregrine Bertie, third Duke of Ancaster (Page 1876). By 1812, the township had several mills, schools and churches. The largest community was Stevensville (Mika & Mika 1977). The township was quite prosperous early on because of the early railway construction and the building of an international bridge across the Niagara River in 1873 (Cruikshank 1886). Bertie Township had a population of 2,737 in 1852 (Carter 1984a: 96).

Historically, the community nearest to the study area was the Town of Fort Erie, then located directly to the east. Fort Erie was first established as a British trading post and

garrison in the 1760's (Mika & Mika 1981). The garrison at Fort Erie saw considerable action during the War of 1812. After the war, there was an influx of settlement, largely due to the town's key location on the Niagara River and Lake Erie, making it a prime location for shipping (Mika & Mika 1981). The construction of the Erie and Welland Canals in the early nineteenth century led to a decline in prosperity as new water routes bypassed the town. The opening of the International Railway Bridge across the Niagara River in 1873 returned the town to economic success with new industries and stores being established. Fort Erie also encompassed a hamlet called Little Africa, an early settlement of runaway slaves who were primarily employed cutting wood fuel for the local railways (Carter 1984a: 666). Fort Erie had a population of 706 in 1861 (Carter 1984a:411).

Historical records and mapping were examined for evidence of early Euro-Canadian use of the study area. Historically, the study area was located on Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie.

The 1862 *Tremaines' Map of the Counties of Lincoln and Welland, Canada West* was examined first. At that time, Lot 1 was under the ownership of Frederick Rose (Appendix A: Figure 3). Historical features are not illustrated within the study area; however, the lot is shown fronting historic Helena Street, and the Buffalo & Lake Huron Railway was located within 250 m.

The 1876 *Illustrated Atlas of Lincoln & Welland Counties* (Page 1876; Appendix A: Figure 4) was examined next. In 1876, the portion of Lot 1 within the current study area was owned by Charles L. Rose. There is a farmstead shown within the current study area, in the approximate location of the existing house and outbuildings. The property is bounded by historic Helena Street to the east. The historic limits of the Town of Fort Erie are just east of Helena Street. The Buffalo & Lake Huron Railway, now named the Grand Trunk Railway, is located within the town limits, 250 m east of the study area.

Historical census records were reviewed to obtain additional information (Library and Archives Canada 2017). Frederick Rose, the landowner shown on Appendix A: Figure 4 is first recorded in the 1861 Canada census records. In 1861 the census documented that Mr. Rose was 62 years old, a Presbyterian born in the United States. His occupation was listed as farmer. Rose was married to Nancy, aged 44, who was also born in the United States. They had seven children: Catharine, William, Charles, George, Bradford, Elgin, and Eliza, ranging in ages from 24 to 7 years old. William, Charles and George's occupations were listed as labourers. Charles Rose is also almost certainly the landowner listed in Appendix A: Figure 5. At the time of the 1861 census he was 19 years old. One structure, a 1 ½ storey brick house, was listed as being on the lot in 1861.

In summary, a review of the historical context supports a conclusion of overall archaeological potential and the need for Stage 2 assessment since there is reference to an historic farmstead within the study area in Census records and on the Historic Atlas map. In addition, the study area is located just outside the historic limits of the Town of Fort Erie, and is adjacent to historical roadways as illustrated in the 1862 and 1876

historical maps. As per the MTCS's *Standards and Guidelines for Consultant Archaeologists*, any areas within 100 m of early historic transportation routes and 300 m of early Euro-Canadian settlement warrant the need for Stage 2 property assessment.

3.0 STAGE 1 PROPERTY INSPECTION

3.1 Methodology

The Stage 1 property inspection was conducted by Kristy O'Neal (P066) of Amec Foster Wheeler on 21 December 2017 to confirm archaeological site potential and to determine the degree to which development and landscape alteration have affected that potential. The weather was partly cloudy and cool (ca. 1 degree Celsius) and did not impede the inspection in any way.

The Stage 1 property inspection included a 30-m interval walk-through of the entire property, which measures approximately 8.16 hectares. The property inspection was thoroughly photo-documented. Field observations were recorded on aerial maps and field forms. Areas identified as disturbed, including an existing paved and gravel driveway and the footprints of six structures, have had the integrity of the topsoil compromised by earth moving activities to the point where archaeological potential has been removed. Landscaped sections of the study area, along with the pasture and wooded areas were assumed to have retained archaeological potential. All land conditions were recorded as shown in Appendix A: Figure 5 and Appendix B: Photographs 1 to 14.

3.2 Record of Finds

Table 3: Inventory of Documentary Record		
Study Area	Maps and Photos	Field Notes
613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie, Town of Fort Erie, Regional Municipality of Niagara, Ontario	Photocopies of 2 historical maps, 2 aerial photographs and 14 Stage 1 photographs	Stage 1 photo logs and field notes

Documentation related to the archaeological assessment of this project will be curated by Amec Foster Wheeler until such time that arrangements for their ultimate transfer to Her Majesty the Queen in right of Ontario, or other public institution, can be made to the satisfaction of the project owner, the MTCS and any other legitimate interest groups.

3.3 Results

The study area consists of woodlot and pasture, with two permanently wet areas (marsh and pond), and a landscaped lawn area containing six structures (house, garage, horse shelter, and barns) and a paved and gravel parking lot and driveway (Appendix B: Photographs 1 to 14).

Archaeological potential has been removed within 0.24 hectares of the study area. Visible evidence of disturbance caused by the construction of a paved parking area, a gravel

driveway, and six structures on the landscaped area at the east end of the property were noted.

Approximately 0.11 hectares of the study area is low-lying and perennially wet. These areas include a small marsh on the north edge of the property and a pond on the south end of the property.

The remainder of the study area has archaeological potential and warrants Stage 2 assessment (Appendix A: Figure 5). Areas with archaeological potential consist of the 4.23 hectares of ploughable pasture lands and 3.58 hectares of unploughable landscaped lawn and woodlot.

4.0 STAGE 1 ANALYSIS AND CONCLUSIONS

The Stage 1 background study has indicated that undisturbed, relatively level and well drained portions of the subject property have archaeological potential and warrant Stage 2 property assessment for six principal reasons: 1) the presence of an historic farmstead as shown in the 1861 census and 1876 historic atlas map; 2) the presence of historic Helena Street within 100 m; 3) the study area is located just outside the historic limits of the Town of Fort Erie; 4) the presence of seven archaeological sites within a one-kilometre radius providing direct evidence that this general area had been exploited by pre-contact Aboriginal and historic Euro-Canadian peoples; 5) the presence of a natural water source, Kraft Drain, just over 300 m to the east; and 6) the presence of a marsh within the study area. On the basis of the Stage 1 property inspection and a review of recent land use history, Amec Foster Wheeler has identified that: 1) 3% (0.24 hectares) of the study area does not require Stage 2 assessment because archaeological potential has been removed due to soil disturbance; 2) 1% (0.11 hectares) of the study area does not require Stage 2 assessment because it is permanently wet; 3) 96% (7.81 hectares) of the study area retains archaeological potential and warrants Stage 2 assessment (Appendix A: Figure 5).

Areas that retain archaeological potential include 4.23 hectares of grassed pasture lands where ploughing is viable and 3.58 hectares of landscaped lawn and woodlot where ploughing is not viable. The pasture lands should be assessed using pedestrian survey at 5-m intervals. The non-ploughable portion of the study area should be assessed using test pit survey at 5-m intervals.

5.0 RECOMMENDATIONS

In light of these results, the following recommendations are made, subject to the advice on compliance with legislation contained in Section 6.0:

1. A Stage 2 archaeological assessment in the form of a test pit survey should be completed on the landscaped area around the existing house and woodlot (unploughable land) (3.58 ha in size) as shown in Appendix A: Figure 5. The test pits should be excavated by hand at regular five-metre intervals in a grid-pattern and to a depth of 5 cm into the subsoil. The stratigraphy of soils excavated during test pitting should be examined in order to detect cultural soil horizons. In addition, excavated soils are to be screened through ¼ inch (6 mm) mesh in order to facilitate the recovery of archaeologically significant artifacts. The pattern and intensity of test pit placement may be altered due to changes in archaeological potential in different parts of a study area and/or the presence of disturbed soils. Any areas of 'disturbance' should be evaluated and photo-documented.

If archaeological resources are found their exact distribution should be documented and any diagnostic artifacts recovered and inventoried. Upon discovery of cultural materials, the survey grid should be continued to determine whether there are enough archaeological resources to meet the criteria for making a recommendation to carry out a Stage 3 assessment. In the event that insufficient archaeological resources are recovered, eight additional test pits are to be dug in a 2 to 2.5 metre radius around the positive test pit, followed by the excavation of a 1 x 1 m unit at the positive test pit. Cultural artifacts encountered are to be collected and bagged according to provenience.

2. A Stage 2 archaeological assessment in the form of a pedestrian survey should be completed on the fallow field (4.23 ha in size) as shown in Appendix A: Figure 5. The fields must be ploughed by means of mouldboard ploughing and, if necessary, disk harrowing. At least 80% of the ground surface must be visible in order to conduct the pedestrian survey. The fields should be allowed to weather through one heavy, or several light rainfalls, to improve surface visibility. Areas of archaeological potential are to be surveyed at regular five-meter intervals.

If archaeological resources are encountered, the 5 m transect should be decreased to 1 m intervals over a minimum 20 m radius around the archaeological find until the full extent of the scatter has been identified or the find is determined to be isolated. All formal artifact types and diagnostic categories are to be collected and enough artifacts should be left *in-situ* to relocate the site in the event that it is necessary to conduct further assessment. The exact location of archaeological resources should be documented using one or more of a combination of: the Global Positioning System, topographic survey or other precision measurements.

3. The remainder of the study area, including 0.11 hectares of permanently wet soil and 0.24 hectares of previously disturbed land does not require further archaeological assessment due to low archaeological potential.

The above recommendations are subject to Ministry of Tourism, Culture and Sport approval, and it is an offence to alter any of the study area without Ministry of Tourism, Culture, and Sport concurrence.

No grading or other activities that may result in the destruction or disturbance to the study area is permitted until notice of Ministry of Tourism, Culture, and Sport approval has been received.

6.0 ADVICE WITH COMPLIANCE WITH LEGISLATION

- a) This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part IV 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, 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.
- 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 a time as a licensed archaeologist has completed 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 *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.
- e) 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.

7.0 ASSESSOR QUALIFICATIONS

This report was prepared and reviewed by the undersigned, employees of Amec Foster Wheeler. Amec Foster Wheeler is one of North America's leading engineering firms, with more than 50 years of experience in the earth and environmental consulting industry. The qualifications of the assessors involved in the preparation of this report are provided in Appendix C.

8.0 CLOSURE

This report was prepared for the exclusive use of 1891187 Ontario Inc. and is intended to provide a Stage 1 archaeological assessment of the Study Area. The property is located at 613 Helena Street, in the Town of Fort Erie, on Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie, County of Welland, Ontario.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of the third party. Should additional parties require reliance on this report, written authorization from Amec Foster Wheeler will be required. With respect to third parties, Amec Foster Wheeler has no liability or responsibility for losses of any kind whatsoever, including direct or consequential financial effects on transactions or property values, or requirements for follow-up actions and costs.

The report is based on data and information collected during the Stage 1 property inspection conducted by Amec Foster Wheeler. It is based solely a review of historical information, a property reconnaissance conducted on 21 December 2017 and data obtained by Amec Foster Wheeler as described in this report. Except as otherwise maybe specified, Amec Foster Wheeler disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Amec Foster Wheeler after the time during which Amec Foster Wheeler conducted the archaeological assessment. In evaluating the property, Amec Foster Wheeler has relied in good faith on information provided by other individuals noted in this report. Amec Foster Wheeler has assumed that the information provided is factual and accurate. In addition, the findings in this report are based, to a large degree, upon information provided by the current owner/occupant. Amec Foster Wheeler accepts no responsibility for any deficiency, misstatement or inaccuracy contained in this report as a result of omissions, misinterpretations or fraudulent acts of persons interviewed or contacted.

Amec Foster Wheeler makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.

This report is also subject to the further Standard Limitations contained in Appendix D.

We trust that the information presented in this report meets your current requirements. Should you have any questions, or concerns, please do not hesitate to contact the undersigned.

Respectfully Submitted,

**Amec Foster Wheeler Environment & Infrastructure
a division of Amec Foster Wheeler Americas Limited**

Prepared by,



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Senior Archaeologist

Reviewed by,



Barbara Slim, M.A. (P348)
Senior Archaeologist



Shaun Austin, Ph.D. (P141)
Associate Archaeologist

9.0 BIBLIOGRAPHY

Carter, Floreen Ellen

1984a *Place Names of Ontario, Volume 1*. Phelps Publishing, London.

1984b *Place Names of Ontario, Volume 2*. Phelps Publishing, London.

Chapman, L.J. and D. F. Putnam

1984 *The Physiography of Southern Ontario*. Second Edition. Ontario Geological Survey, Special Volume 2. Ontario Ministry of Natural Resources, Toronto University Press, Toronto.

Cruikshank, E.A.

1886 *A Historical and descriptive sketch of the County of Welland in the Province of Ontario in the Dominion of Canada*. Reprinted 1997, Welland City Council, Welland.

Kingston, M.S. and E.W. Present

1989 *The Soils of The Regional Municipality of Niagara*. Report No. 60 of the Ontario Institute of Pedology, Ontario Ministry of Agriculture and Food. Guelph, Ontario.

Middleton, Jesse Edgar and Fred Landon

1927 *Province of Ontario – A History 1615 to 1927*. Dominion Publishing Company, Toronto.

Mika, Nick and Helma Mika

1983 *Places in Ontario: Their Name Origins and History. Part III, N-Z*. Mika Publishing Company, Belleville.

1981 *Places in Ontario: Their Name Origins and History. Part II, F-M*. Mika Publishing Company, Belleville.

1977 *Places in Ontario: Their Name Origins and History. Part I, A-E*. Mika Publishing Company, Belleville.

Ministry of Tourism, Culture and Sport

2011 *Standards and Guidelines for Consultant Archaeologists*, Ontario Ministry of Tourism, Culture and Sport, Toronto.

Natural Resources Canada

1998 1:50,000 Scale Topographic Map, 30-L/15, Fort Erie.

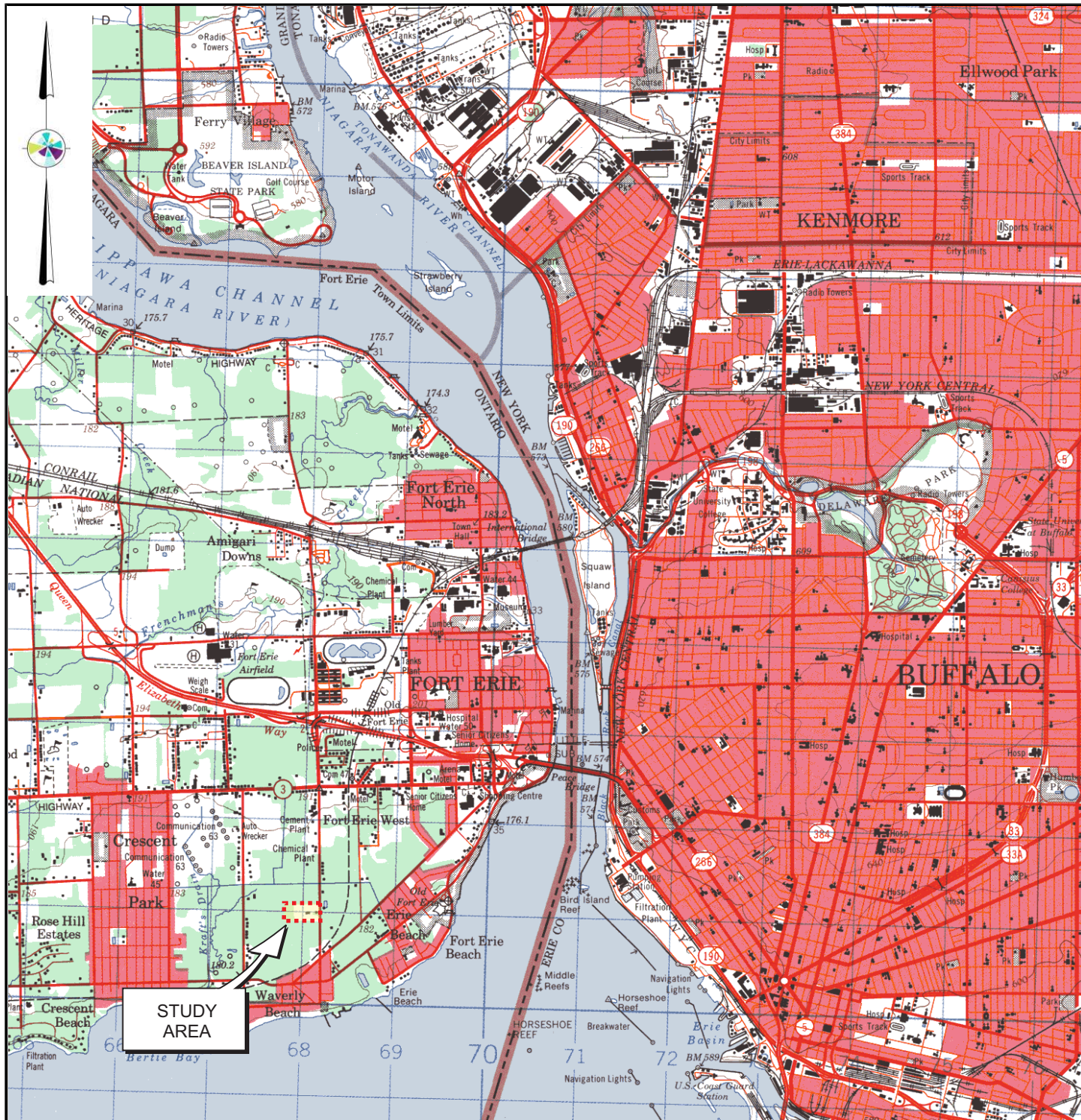
Page, H.R.

1876 *Illustrated Historical Atlas of the Counties of Lincoln & Welland, Ontario*. Reprinted 1971, Ross Cummings, Port Elgin.

Tremaine, G.R. and G.M.


1862 *Tremaines' Map of the Counties of Lincoln and Welland, Canada West*. Public Archives Canada, Toronto.

APPENDIX A
FIGURES



PROJECT:
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT
 PROPOSED DRAFT PLAN OF SUBDIVISION
 613 HELENA STREET, PART OF LOT 1, CONCESSION 2 ON
 LAKE ERIE, TOWNSHIP OF BERTIE, TOWN OF FORT ERIE,
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:
 1:50,000 SCALE TOPOGRAPHIC MAP
 SHOWING LOCATION OF STUDY AREA

LEGEND:
 STUDY AREA LIMITS



(SOURCE: NATURAL RESOURCES CANADA 1998)

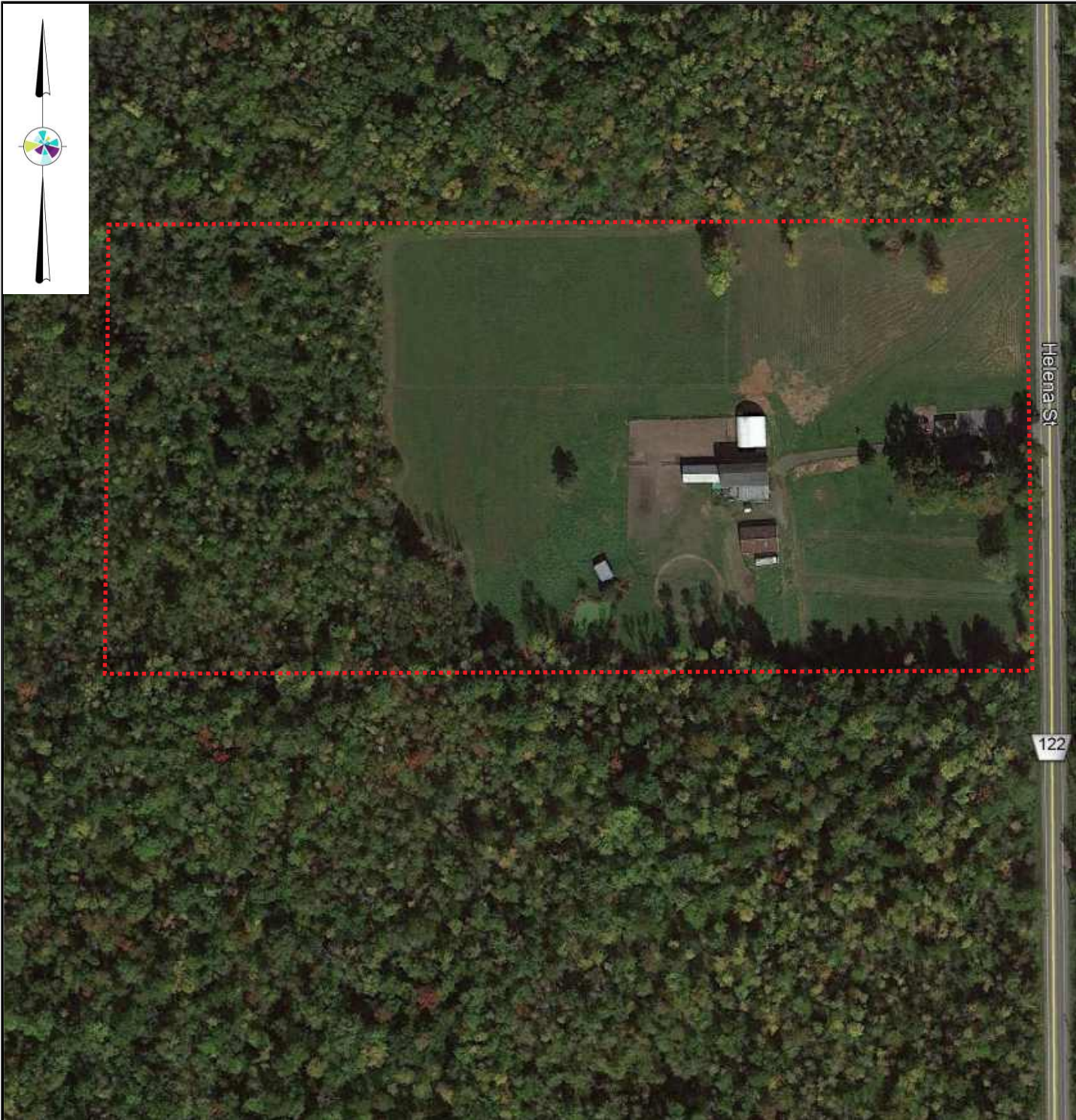
NOTES:
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE
 AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE
 REPORT No. SWW171582
 ALL LOCATIONS ARE APPROXIMATE.

CLIENT:
 1891187 ONTARIO INC.
 4281 MITCHELL AVENUE
 NIAGARA FALLS, ONTARIO
 L2E 6R4




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 519-735-2499

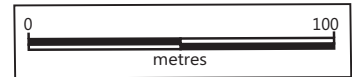
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DATUM:	NAD83	PROJECTION:	UTM Zone 17	PROJECT No:	SWW171582
REV No:	0			FIGURE No:	1



PROJECT:
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT
 PROPOSED DRAFT PLAN OF SUBDIVISION
 613 HELENA STREET, PART OF LOT 1, CONCESSION 2 ON
 LAKE ERIE, TOWNSHIP OF BERTIE, TOWN OF FORT ERIE,
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:
 AERIAL PHOTOGRAPH SHOWING
 LOCATION OF STUDY AREA

LEGEND:
 STUDY AREA LIMITS



(SOURCE: GOOGLE EARTH 2018)

NOTES:
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 REPORT No. SWW171582
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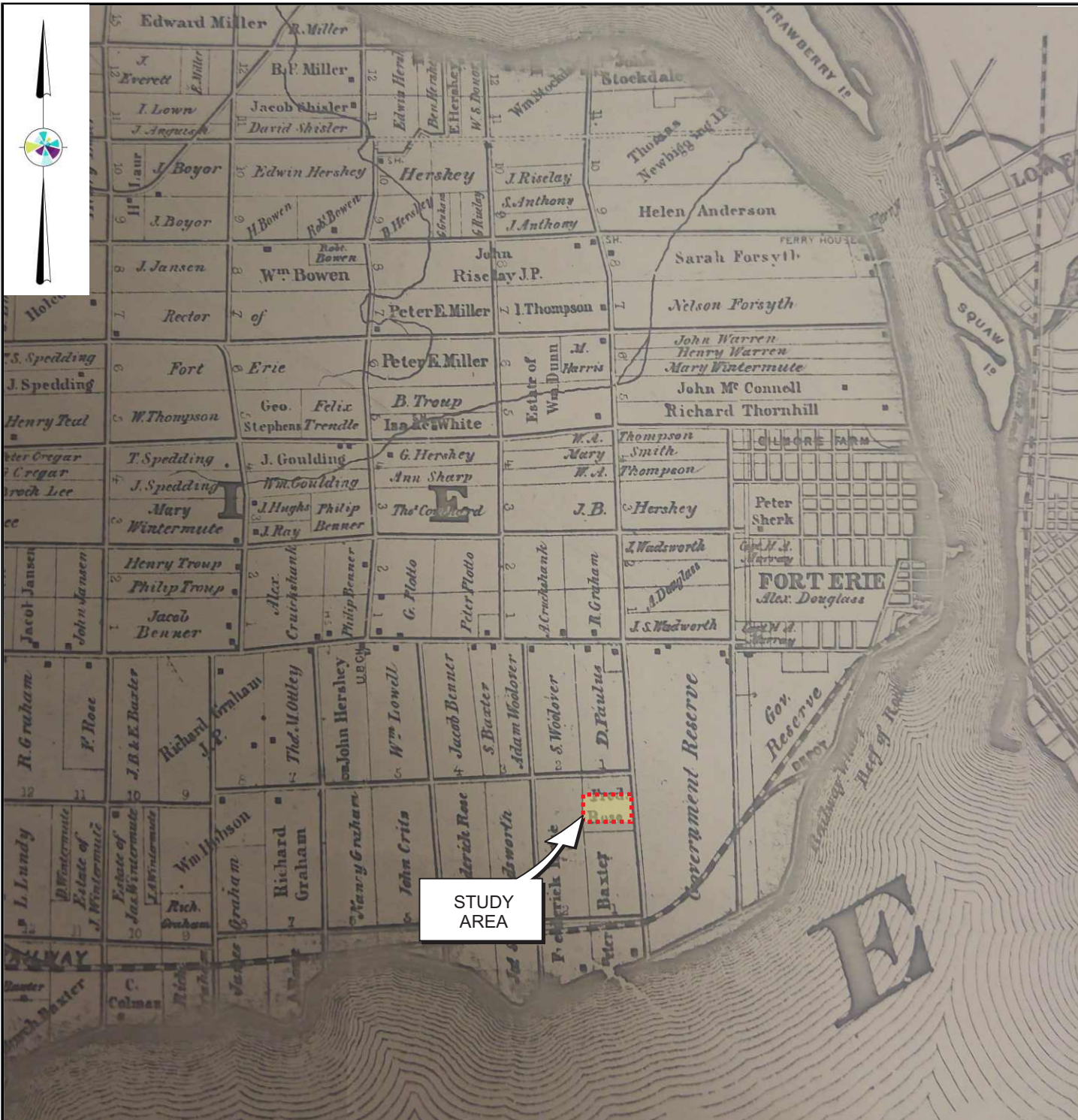
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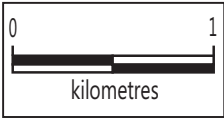
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DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: SWW171582
REV No: 0		FIGURE No: 2



PROJECT:
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT
 PROPOSED DRAFT PLAN OF SUBDIVISION
 613 HELENA STREET, PART OF LOT 1, CONCESSION 2 ON
 LAKE ERIE, TOWNSHIP OF BERTIE, TOWN OF FORT ERIE,
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:
 STUDY AREA ON 1862 ILLUSTRATED HISTORICAL
 ATLAS MAP OF WELLAND COUNTY

LEGEND:
 STUDY AREA LIMITS



(SOURCE: TREMAINE 1862)

NOTES:
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE
 AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE
 REPORT No. SWW171582
 ALL LOCATIONS ARE APPROXIMATE.

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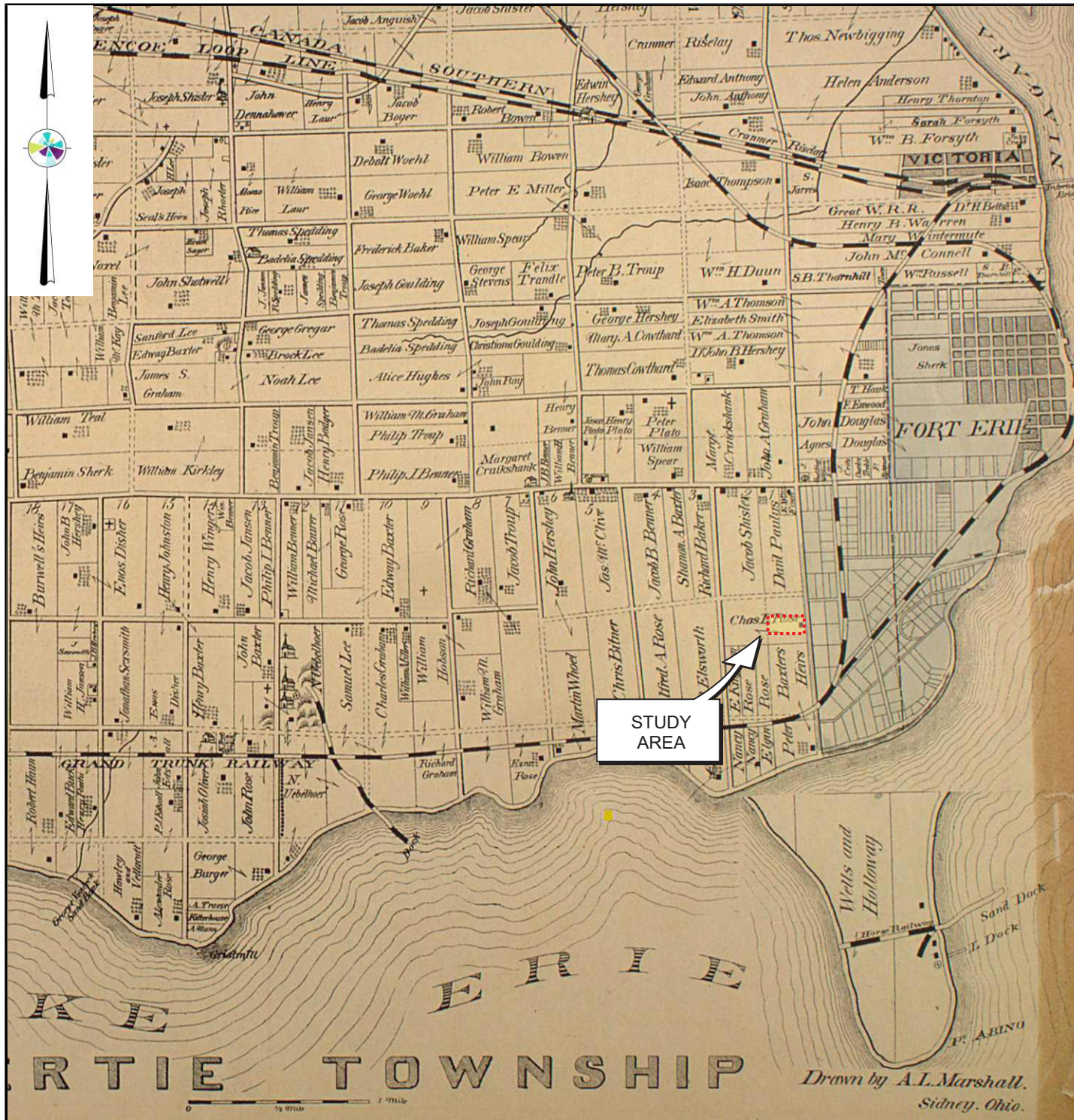
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DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: SWW171582
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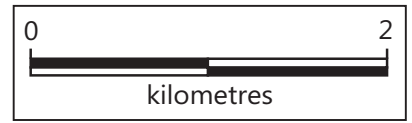
STUDY
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PROJECT:
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT
 PROPOSED DRAFT PLAN OF SUBDIVISION
 613 HELENA STREET, PART OF LOT 1, CONCESSION 2 ON
 LAKE ERIE, TOWNSHIP OF BERTIE, TOWN OF FORT ERIE,
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:
 STUDY AREA ON 1876 HISTORICAL ATLAS MAP OF
 BERTIE TOWNSHIP, WELLAND COUNTY

LEGEND:
 STUDY AREA LIMITS



(SOURCE: PAGE 1876)

NOTES:
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE
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 REPORT No. SWW171582
 ALL LOCATIONS ARE APPROXIMATE.

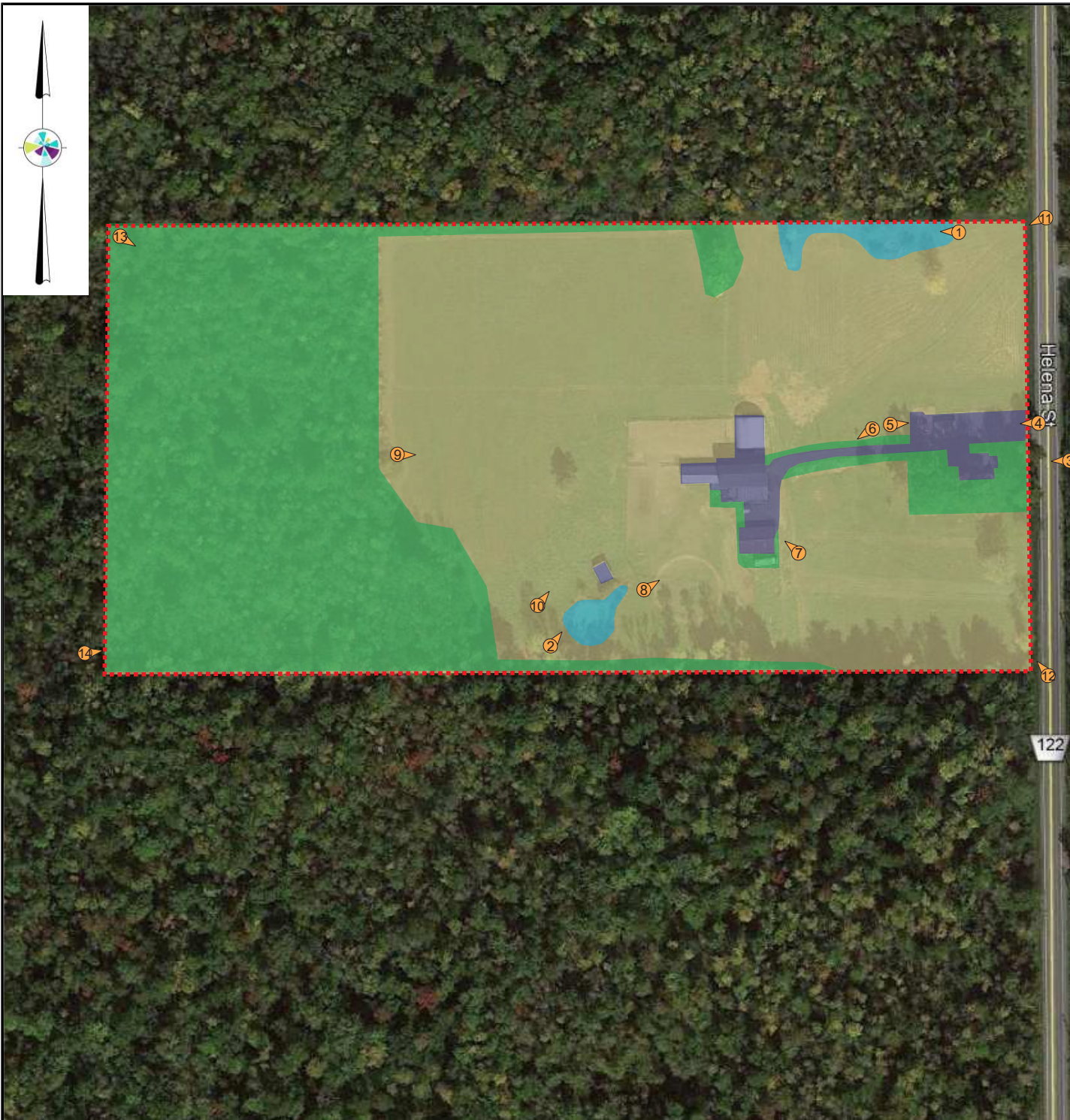
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DATUM:	NAD83	PROJECTION:	UTM Zone 17	PROJECT No:	SWW171582
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PROJECT:
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT
 PROPOSED DRAFT PLAN OF SUBDIVISION
 613 HELENA STREET, PART OF LOT 1, CONCESSION 2 ON
 LAKE ERIE, TOWNSHIP OF BERTIE, TOWN OF FORT ERIE,
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:
 AERIAL PHOTOGRAPH SHOWING
 RESULTS OF STAGE 1 ASSESSMENT
 WITH PHOTOGRAPH LOCATIONS AND IDENTIFICATION

LEGEND:

- STUDY AREA LIMITS
- AREAS WITH ARCHAEOLOGICAL POTENTIAL:
 PLOUGHED AGRICULTURAL FIELD, STAGE 2
 PEDESTRIAN SURVEY AT 5m INTERVAL RECOMMENDED
- NON-PLOUGHABLE, STAGE 2 TEST PIT SURVEY AT
 5m INTERVAL RECOMMENDED
- AREAS WITH NO ARCHAEOLOGICAL POTENTIAL:
 DISTURBED, STRUCTURES AND GRAVEL DRIVEWAY,
 NO FURTHER FIELDWORK RECOMMENDED
- PERMANENTLY LOWLYING/WET, NO FURTHER
 FIELDWORK RECOMMENDED
- PHOTOGRAPH IDENTIFICATION,
 LOCATION, AND DIRECTION

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(SOURCE: GOOGLE EARTH 2018)

NOTES:
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE
 AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE
 REPORT No. SWW171582
 ALL LOCATIONS ARE APPROXIMATE.

CLIENT:

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DWN BY: KO	CHK'D BY: BS	DATE: 11 JANUARY 2018
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: SWW171582
REV No: 0		FIGURE No: 5



PROJECT:
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT
 PROPOSED DRAFT PLAN OF SUBDIVISION
 613 HELENA STREET, PART OF LOT 1, CONCESSION 2 ON
 LAKE ERIE, TOWNSHIP OF BERTIE, TOWN OF FORT ERIE,
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:
 DEVELOPMENT PLAN SHOWING
 PROPOSED STRATEGY FOR STAGE 2 ASSESSMENT
 WITH PHOTOGRAPH LOCATIONS AND IDENTIFICATION

LEGEND:

- STUDY AREA LIMITS
- AREAS WITH ARCHAEOLOGICAL POTENTIAL:
 PLOUGHED AGRICULTURAL FIELD, STAGE 2
 PEDESTRIAN SURVEY AT 5m INTERVAL REQUIRED
- NON-PLOUGHABLE, STAGE 2 TEST PIT SURVEY AT
 5m INTERVAL REQUIRED
- AREAS WITH NO ARCHAEOLOGICAL POTENTIAL:
 DISTURBED, STRUCTURES AND GRAVEL DRIVEWAY,
 NO FURTHER FIELDWORK RECOMMENDED
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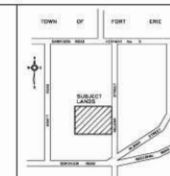
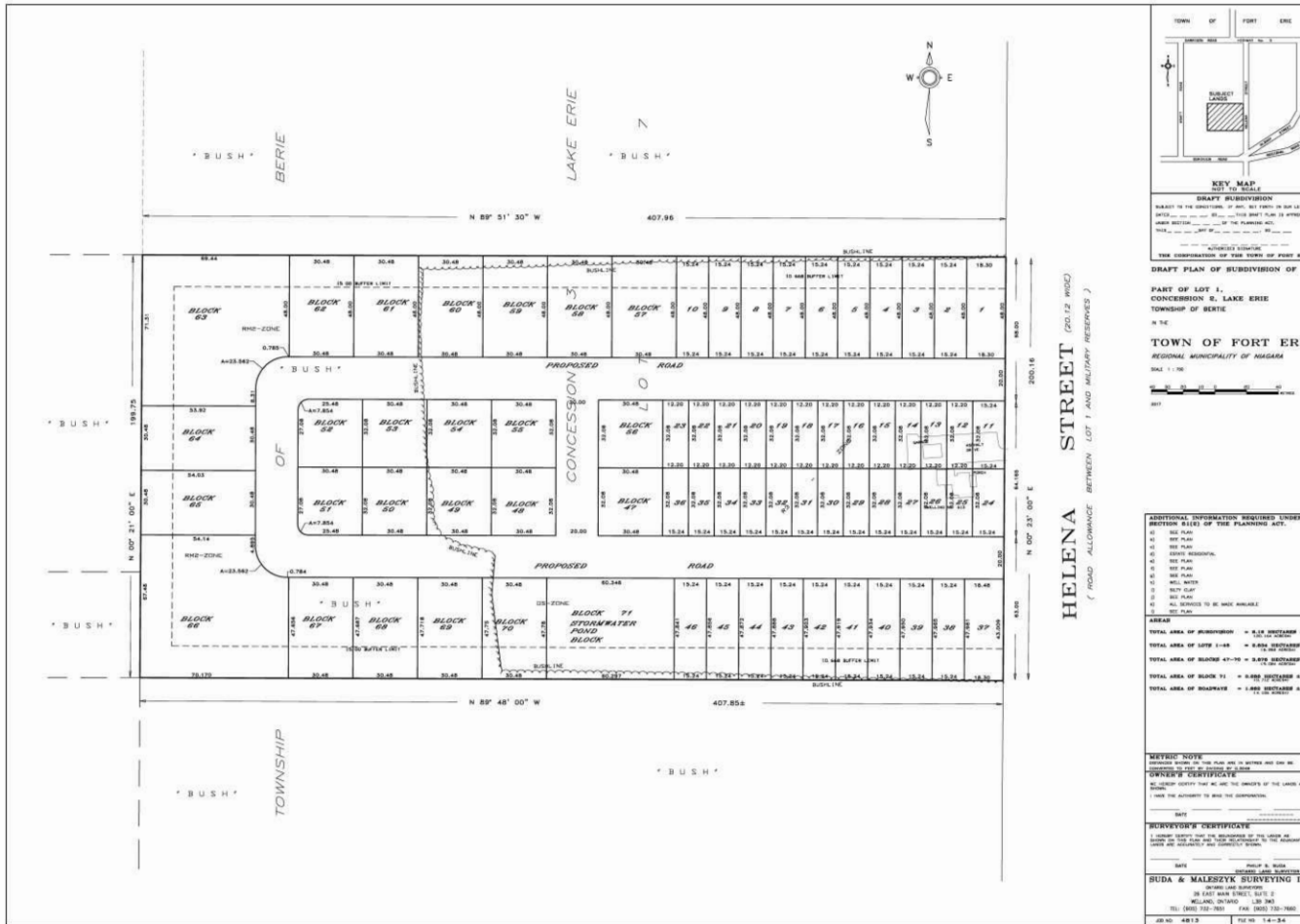
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 REPORT No. SWW171582
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 519-735-2499

DWN BY: KO	CHK'D BY: BS	DATE: 11 JANUARY 2018
DATUM: NAD83	PROJECTION: UTM Zone 17	PROJECT No: SWW171582
REV No: 0		FIGURE No: 6



DRAFT SUBDIVISION
 DRAFT TO THE ORDINANCE OF REG. 467 (2011) IN SHIP LETTER
 DATE: _____ BY: _____ THIS SHIP PLAN IS APPROVED
 UNDER SECTION _____ OF THE PLANNING ACT
 THIS _____ DAY OF _____ 20____

ADJACENT TOWNSHIP
 THE CORPORATION OF THE TOWN OF FORT ERIC

DRAFT PLAN OF SUBDIVISION OF
PART OF LOT 1,
CONCESSION 2, LAKE ERIE
TOWNSHIP OF BERTIE
 IN THE
TOWN OF FORT ERIE
 REGIONAL MUNICIPALITY OF NIAGARA

SCALE: 1:100

- ADDITIONAL INFORMATION REQUIRED UNDER SECTION 44(1) OF THE PLANNING ACT:**
- 1. SITE PLAN
 - 2. ENVIRONMENTAL IMPACT STATEMENT
 - 3. SITE PLAN
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AREAS

TOTAL AREA OF PROVISIONS = 0.12 HECTARES ±
 TOTAL AREA OF LOTS 1-48 = 0.12 HECTARES ±
 TOTAL AREA OF LOTS 49-70 = 0.12 HECTARES ±
 TOTAL AREA OF BLOCK 71 = 0.12 HECTARES ±
 TOTAL AREA OF RESERVE = 0.12 HECTARES ±

REVISION NOTE
 REVISIONS TO THIS PLAN ARE TO BE MADE ONLY ON THIS DRAWING.

OWNER'S CERTIFICATE
 I, _____, OWNER OF THE LAND SHOWN ON THIS PLAN, HEREBY CERTIFY THAT I AM THE OWNER OF THE LAND AND I HAVE THE AUTHORITY TO SIGN THIS CERTIFICATE.

DATE

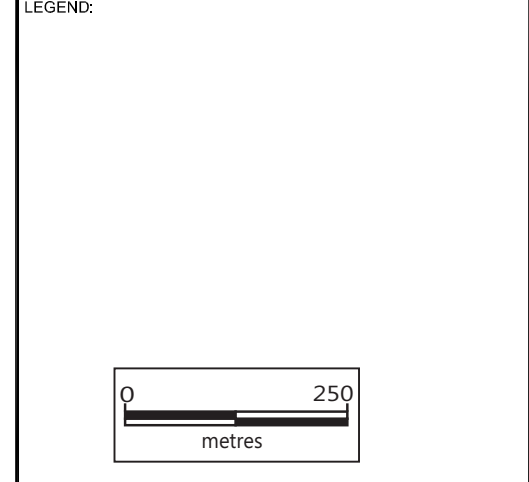
SCREVENOR'S CERTIFICATE
 I, _____, SCREVENOR OF THIS PLAN, HEREBY CERTIFY THAT I AM A REGISTERED SCREVENOR AND I HAVE THE AUTHORITY TO SIGN THIS CERTIFICATE.

DATE

SUDA & MALESZYK SURVEYING INC.
 20 EAST MAIN STREET, SUITE 2
 NIAGARA FALLS, ONTARIO L2E 6R4
 TEL: (905) 702-7800 FAX: (905) 702-7800

PROJECT:
 STAGE 1 ARCHAEOLOGICAL ASSESSMENT
 PROPOSED DRAFT PLAN OF SUBDIVISION
 613 HELENA STREET, PART OF LOT 1, CONCESSION 2 ON
 LAKE ERIE, TOWNSHIP OF BERTIE, TOWN OF FORT ERIE,
 REGIONAL MUNICIPALITY OF NIAGARA, ONTARIO

TITLE:
 UNALTERED DEVELOPMENT PLAN



NOTES:
 THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE
 AMEC FOSTER WHEELER ENVIRONMENT & INFRASTRUCTURE
 REPORT No. SWW171582
 ALL LOCATIONS ARE APPROXIMATE.

CLIENT:

1891187 ONTARIO INC.
 4281 MITCHELL AVENUE
 NIAGARA FALLS, ONTARIO
 L2E 6R4

**Amec Foster Wheeler
 Environment &
 Infrastructure**
 11865 COUNTY ROAD 42
 TECUMSEH, ONTARIO
 N8N 2M1
 519-735-2499

DWN BY:	CHK'D BY:	DATE:
KO	BS	11 JANUARY 2018
DATUM:	PROJECTION:	PROJECT No:
NAD83	UTM Zone 17	SWW171582
REV No:		FIGURE No:
0		7

APPENDIX B
PHOTOGRAPHS

APPENDIX B - PHOTOGRAPHIC RECORD

PROJECT NO. SWW171582

PROJECT Stage 1 Archaeological Assessment

LOCATION 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie
Town of Fort Erie, Regional Municipality of Niagara, Ontario

	<table border="1"> <tr> <td>PHOTOGRAPH</td> <td>1</td> </tr> </table>	PHOTOGRAPH	1
PHOTOGRAPH	1		
	<table border="1"> <tr> <td>Description</td> </tr> <tr> <td>View of marsh area on north edge of study area, facing west.</td> </tr> </table>	Description	View of marsh area on north edge of study area, facing west.
Description			
View of marsh area on north edge of study area, facing west.			


	<table border="1"> <tr> <td>PHOTOGRAPH</td> <td>2</td> </tr> </table>	PHOTOGRAPH	2
PHOTOGRAPH	2		
	<table border="1"> <tr> <td>Description</td> </tr> <tr> <td>View of pond, facing northeast. Note barns and horse shelter in background.</td> </tr> </table>	Description	View of pond, facing northeast. Note barns and horse shelter in background.
Description			
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APPENDIX B - PHOTOGRAPHIC RECORD

PROJECT NO. SWW171582

PROJECT Stage 1 Archaeological Assessment

LOCATION 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie
Town of Fort Erie, Regional Municipality of Niagara, Ontario

	<table border="1"> <tr> <td>PHOTOGRAPH</td> <td>3</td> </tr> </table>	PHOTOGRAPH	3
PHOTOGRAPH	3		
<table border="1"> <tr> <td style="text-align: center;">Description</td> </tr> <tr> <td>View of house, garage and paved parking lot, from Helena Street, facing west.</td> </tr> </table>		Description	View of house, garage and paved parking lot, from Helena Street, facing west.
Description			
View of house, garage and paved parking lot, from Helena Street, facing west.			

	<table border="1"> <tr> <td>PHOTOGRAPH</td> <td>4</td> </tr> </table>	PHOTOGRAPH	4
PHOTOGRAPH	4		
<table border="1"> <tr> <td style="text-align: center;">Description</td> </tr> <tr> <td>View of garage and paved parking lot, facing west.</td> </tr> </table>		Description	View of garage and paved parking lot, facing west.
Description			
View of garage and paved parking lot, facing west.			

APPENDIX B - PHOTOGRAPHIC RECORD

PROJECT NO. SWW171582

PROJECT Stage 1 Archaeological Assessment

LOCATION 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie
Town of Fort Erie, Regional Municipality of Niagara, Ontario

	<table border="1"> <tr> <td data-bbox="1114 432 1370 487">PHOTOGRAPH</td> <td data-bbox="1370 432 1442 487">5</td> </tr> </table>	PHOTOGRAPH	5
PHOTOGRAPH	5		
<table border="1"> <tr> <td data-bbox="1114 516 1442 571">Description</td> </tr> <tr> <td data-bbox="1114 571 1442 1037">View of garage and paved parking lot, facing east.</td> </tr> </table>		Description	View of garage and paved parking lot, facing east.
Description			
View of garage and paved parking lot, facing east.			

	<table border="1"> <tr> <td data-bbox="1114 1230 1370 1285">PHOTOGRAPH</td> <td data-bbox="1370 1230 1442 1285">6</td> </tr> </table>	PHOTOGRAPH	6
PHOTOGRAPH	6		
<table border="1"> <tr> <td data-bbox="1114 1314 1442 1369">Description</td> </tr> <tr> <td data-bbox="1114 1369 1442 1835">View of gravel driveway between house and barns, facing southwest.</td> </tr> </table>		Description	View of gravel driveway between house and barns, facing southwest.
Description			
View of gravel driveway between house and barns, facing southwest.			

APPENDIX B - PHOTOGRAPHIC RECORD

PROJECT NO. SWW171582

PROJECT Stage 1 Archaeological Assessment

LOCATION 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie
Town of Fort Erie, Regional Municipality of Niagara, Ontario

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<table border="1"> <tr> <td style="text-align: center;">Description</td> </tr> <tr> <td>View of gravel driveway and barns, facing northwest.</td> </tr> </table>		Description	View of gravel driveway and barns, facing northwest.
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	<table border="1"> <tr> <td>PHOTOGRAPH</td> <td>8</td> </tr> </table>	PHOTOGRAPH	8
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<table border="1"> <tr> <td style="text-align: center;">Description</td> </tr> <tr> <td>View of barns and surrounding area, facing northeast.</td> </tr> </table>		Description	View of barns and surrounding area, facing northeast.
Description			
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APPENDIX B - PHOTOGRAPHIC RECORD

PROJECT NO. SWW171582

PROJECT Stage 1 Archaeological Assessment

LOCATION 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie
Town of Fort Erie, Regional Municipality of Niagara, Ontario

	<table border="1"> <tr> <td data-bbox="1122 432 1377 485">PHOTOGRAPH</td> <td data-bbox="1377 432 1446 485">9</td> </tr> </table>	PHOTOGRAPH	9
	PHOTOGRAPH	9	
<table border="1"> <tr> <td data-bbox="1122 516 1446 569">Description</td> </tr> <tr> <td data-bbox="1122 569 1446 1035">View of barns and pasture from east edge of forest, facing east.</td> </tr> </table>	Description	View of barns and pasture from east edge of forest, facing east.	
Description			
View of barns and pasture from east edge of forest, facing east.			

	<table border="1"> <tr> <td data-bbox="1122 1230 1377 1283">PHOTOGRAPH</td> <td data-bbox="1377 1230 1446 1283">10</td> </tr> </table>	PHOTOGRAPH	10
	PHOTOGRAPH	10	
<table border="1"> <tr> <td data-bbox="1122 1314 1446 1367">Description</td> </tr> <tr> <td data-bbox="1122 1367 1446 1833">View of horse shelter and barns, facing northeast.</td> </tr> </table>	Description	View of horse shelter and barns, facing northeast.	
Description			
View of horse shelter and barns, facing northeast.			

APPENDIX B - PHOTOGRAPHIC RECORD

PROJECT NO. SWW171582

PROJECT Stage 1 Archaeological Assessment

LOCATION 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie
Town of Fort Erie, Regional Municipality of Niagara, Ontario

	<table border="1"> <tr> <td>PHOTOGRAPH</td> <td>11</td> </tr> </table>	PHOTOGRAPH	11
PHOTOGRAPH	11		
<table border="1"> <tr> <td style="text-align: center;">Description</td> </tr> <tr> <td>View of pasture, facing southwest.</td> </tr> </table>		Description	View of pasture, facing southwest.
Description			
View of pasture, facing southwest.			

	<table border="1"> <tr> <td>PHOTOGRAPH</td> <td>12</td> </tr> </table>	PHOTOGRAPH	12
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<table border="1"> <tr> <td style="text-align: center;">Description</td> </tr> <tr> <td>View of pasture, facing northwest.</td> </tr> </table>		Description	View of pasture, facing northwest.
Description			
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APPENDIX B - PHOTOGRAPHIC RECORD



PROJECT NO. SWW171582

PROJECT Stage 1 Archaeological Assessment

LOCATION 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie
Town of Fort Erie, Regional Municipality of Niagara, Ontario

PHOTOGRAPH

13



Description

View of woodlot, facing southeast.

PHOTOGRAPH

14



Description

View of woodlot, facing east.

APPENDIX C

ASSESSOR QUALIFICATIONS

ASSESSOR QUALIFICATIONS

Shaun Austin, Ph.D., Senior Archaeology Advisor, Cultural Heritage Group Lead –

Dr. Austin is the Senior Advisor to Amec Foster Wheeler's Cultural Heritage Resources group in Ontario and is based in the Hamilton Office. He has been working in Canadian archaeology and heritage since 1976 and as an archaeological and heritage consultant in Ontario since 1987. He is a dedicated consultant with repeated success guiding projects through to completion to the satisfaction of the development proponent, First Nations communities and cultural heritage stakeholder groups. His areas of interest and expertise include pre-contact Aboriginal lithics and ceramics. Dr. Austin holds a **Professional Archaeology Licence (P141)** issued by the Ontario Ministry of Tourism, Culture and Sport, is **MTO RAQs certified in Archaeology/Heritage** and is a member of the Ontario Association of Professional Archaeologists.

Barbara Slim, M.A. Southwest Ontario Archaeology Group Lead –

Ms. Slim is a professionally licensed archaeologist with over 13 years of experience in the archaeology and environmental consulting industry. Ms. Slim has conducted all aspects of Stage 1 to 4 archaeological assessments for provincial agencies, municipalities, and land developers in support of infrastructure developments, financial real estate transactions, environmental remediation and private developments. As a founding member of the Amec Foster Wheeler Ontario archaeology team, Ms. Slim has performed every aspect of project execution, from client relations, project design to MTCS clearance. Through her project experience, Ms. Slim has gained an in-depth understanding of the Heritage Act and legislations & standards associated with cultural heritage management. Ms. Slim holds a Master's Degree in Anthropology from Trent University and an Honours Bachelor's Degree in Environmental Studies and Anthropology from Trent University. Ms. Slim currently holds a **Professional Archaeology Licence (P348)** issued by the Ministry of Tourism, Culture and Sport and is a member of the Ontario Association of Professional Archaeologists.

Kristy O'Neal, M.A., Senior Archaeologist -

Ms. O'Neal is a Senior Archaeologist at Amec Foster Wheeler with 21 years of archaeology consulting experience in Ontario. Ms. O'Neal has supervised a wide variety of Stage 1 through 4 archaeological assessments throughout Ontario, with a focus on both pre-contact and Euro-Canadian settlements. Pre-Contact projects have involved First Nations consultation. Ms. O'Neal has a strong background in cultural material analysis and has extensive experience with large complex stratified Aboriginal sites situated within often compromised urban context. She holds a Master's Degree in Bioarchaeology and a Bachelor of Arts Degree in Anthropology from the University of Western Ontario, where she received a Gold Medal Award for graduating at the top of her class. Ms. O'Neal's areas of interest and

expertise include the archaeological prehistory and history of southwestern Ontario, with focus on the Middle Woodland period and changes Aboriginal weapon technology. Ms. O'Neal holds a **Professional Archaeology License (P066)** issued by the Ontario Ministry of Tourism, Culture and Sport, and is a member of the Ontario Archaeology Society.

Amanda Black, B.A. – Staff Archaeologist Ms. Black is a Project Archaeologist with eight years of experience working in Cultural Resource Management. She has conducted all aspects of stage 1 to 4 archaeological assessments including construction monitoring. Ms. Black has experience with faunal analysis and is interested multi-component sites. Ms. Black holds an **Applied Research License (R375)** issued by the Ontario Ministry of Tourism, Culture and Sport and is a member of the Ontario Archaeological Society and is currently the President for the Windsor Chapter of the Ontario Archaeological Society.

APPENDIX D
LIMITATIONS

LIMITATIONS

1. The work performed in the preparation of this report and the conclusions presented are subject to the following:
 - (a) The Standard Terms and Conditions which form a part of our Professional Services Contract;
 - (b) The Scope of Services;
 - (c) Time and Budgetary limitations as described in our Contract; and,
 - (d) The Limitations stated herein.
2. No other warranties or representations, either expressed or implied, are made as to the professional services provided under the terms of our Contract, or the conclusions presented.
3. The conclusions presented in this report were based, in part, on visual observations of the Study Area. Our conclusions cannot and are not extended to include those portions of the Study Area which were not reasonably available, in Amec Foster Wheeler Environment & Infrastructure's opinion, for direct observation.
4. The potential for archaeological resources, and any actual archaeological resources encountered, at the Study Area were assessed, within the limitations set out above, having due regard for applicable heritage regulations as of the date of the inspection.
5. Services including a background study and fieldwork were performed. Amec Foster Wheeler Environment & Infrastructure's work, including archival studies and fieldwork, were completed in a professional manner and in accordance with the Ministry of Tourism, Culture and Sport's guidelines. It is possible that unforeseen and undiscovered archaeological resources may be present at the Study Area.
6. The utilization of Amec Foster Wheeler Environment & Infrastructure's services during the implementation of any further archaeological work recommended will allow Amec Foster Wheeler Environment & Infrastructure to observe compliance with the conclusions and recommendations contained in the report. Amec Foster Wheeler Environment & Infrastructure's involvement will also allow for changes to be made as necessary to suit field conditions as they are encountered.
7. This report is for the sole use of the parties to whom it is addressed unless expressly stated otherwise in the report or contract. Any use which any third party makes of the report, in whole or in part, or any reliance thereon, or decisions made based on any information of conclusions in the report, is the sole responsibility of such third party. Amec Foster Wheeler Environment & Infrastructure accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on the report or anything set out therein.
8. This report is not to be given over to any third-party other than a governmental entity, for any purpose whatsoever without the written permission of Amec Foster Wheeler Environment & Infrastructure, which shall not be unreasonably withheld.



1.0 PROJECT REPORT COVER PAGE

LICENSEE INFORMATION:

Contact Information:

Marilyn E. Cornies BA CAHP
Southwestern District Office
553 Dufferin Avenue
London, ON N6B 2A5
Phone: (419) 432-4435
Email: mcornies@amick.ca
www.amick.ca

Licensee:

Marilyn E. Cornies BA CAHP
P038

Ontario Archaeology Licence:

PROJECT INFORMATION:

Corporate Project Number:

2020-234

MHSTCI Project Number:

P038-1033-2021

Investigation Type:

Stage 2 Archaeological Property Assessment

Project Name & Location:

613 Helena Street, Part of Lot 1, Concession 2 on Lake
Erie (Geographic Township of Bertie, County of
Welland), Town of Fort Erie, Regional Municipality of
Niagara

Project Designation Number:

Not Currently Available

MHSTCI FILING INFORMATION:

Site Record/Update Form(s):

N/A

Date of Report Filing:

27 January 2022

Type of Report:

ORIGINAL

2.0 EXECUTIVE SUMMARY

This report describes the results of the 2021 Stage 2 Archaeological Assessment of 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie (Geographic Township of Bertie, County of Welland), Town of Fort Erie, Regional Municipality of Niagara, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P038 issued to Marilyn Cornies by the Minister of Heritage, Sport, Tourism and Culture Industries for the Province of Ontario. This assessment was undertaken as a requirement under the Planning Act (RSO 1990) and the Provincial Policy Statement (2020) in order to support a Draft Plan of Subdivision and companion Zoning By-law Amendment application as part of the pre-submission process. Within the land use planning and development context, Ontario Regulation 544/06 under the Planning Act (1990b) requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). Policy 2.6 of the Provincial Policy Statement (PPS 2020) addresses archaeological resources. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 2 Archaeological Assessment of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation concurrently with the Stage 2 Property Assessment by high intensity test pit methodology at a five-metre interval between individual test pits on 5 April 2021. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) on behalf of the government and citizens of Ontario.

STAGE 2 RECOMMENDATIONS:

As a result of the Stage 2 Property Assessment of the study area, no archaeological resources were encountered. Consequently, the following recommendations are made:

- 1. No further archaeological assessment of the study area is warranted;*
- 2. The Provincial interest in archaeological resources with respect to the proposed undertaking has been addressed;*
- 3. The proposed undertaking is clear of any archaeological concern.*

3.0 TABLE OF CONTENTS

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4.0 PROJECT PERSONNEL

AMICK CONSULTANTS LIMITED PARTNERS

Michael Henry (MHSTCI Professional Archaeologist Licence #P058)

Marilyn Cornies (MHSTCI Professional Archaeologist Licence #P038)

PROJECT COORDINATOR

Marilyn Cornies (MHSTCI Professional Archaeologist Licence #P038)

PROJECT LICENSEE ARCHAEOLOGIST

Marilyn Cornies (MHSTCI Professional Archaeologist Licence #P038)

PROJECT FIELD DIRECTORS

Dylan Morningstar (MHSTCI Applied Research Archaeologist Licence #R1166)

PROJECT FIELD ASSISTANTS

Nishita Aurnab Basak Beyen Sheri Kapahnke

PROJECT REPORT PREPARATION

Katrina Mason (MHSTCI Applied Research Archaeologist Licence #R1226)

PROJECT GRAPHICS

Katrina Mason (MHSTCI Applied Research Archaeologist Licence #R1226)

Alex Cassidy-Neumiller

PROJECT PHOTOGRAPHY

Dylan Morningstar (MHSTCI Applied Research Archaeologist Licence #R1166)

5.0 PROJECT CONTEXT

5.1 DEVELOPMENT CONTEXT

This report describes the results of the 2021 Stage 2 Archaeological Assessment of 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie (Geographic Township of Bertie, County of Welland), Town of Fort Erie, Regional Municipality of Niagara, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P038 issued to Marilyn Cornies by the Minister of Heritage, Sport, Tourism and Culture Industries for the Province of Ontario. This assessment was undertaken as a requirement under the Planning Act (RSO 1990) and the Provincial Policy Statement (2020) in order to support a Draft Plan of Subdivision and companion Zoning By-law Amendment application as part of the pre-submission process. Within the land use planning and development context, Ontario Regulation 544/06 under the Planning Act (1990b) requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). Policy 2.6 of the Provincial Policy Statement (PPS 2020) addresses archaeological resources. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

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The proposed development of the study area includes residential blocks (1-17), a stormwater management block (18), environmental lands (block 19), road widening (block 20) and a right of way street. A draft plan of the subdivision has been submitted together with this report to MHSTCI for review and reproduced within this report as Map 4.

5.2 HISTORICAL CONTEXT

5.2.1 PRE-CONTACT LAND-USE OUTLINE

What follows is an outline of Aboriginal occupation in the area during the Pre-Contact Era from the earliest known period, about 9000 B.C. up to approximately 1650 AD.

5.2.1.1 PALAEO-INDIAN PERIOD (APPROXIMATELY 9000-7500 B.C.)

North of Lake Ontario, evidence suggests that early occupation began around 9000 B.C. People probably began to move into this area as the glaciers retreated and glacial lake levels began to recede. The early occupation of the area probably occurred in conjunction with environmental conditions that would be comparable to modern Sub-Arctic conditions. Due to the great antiquity of these sites, and the relatively small populations likely involved, evidence of these early inhabitants is sparse and generally limited to tools produced from stone or to by-products of the manufacture of these implements.

5.2.1.2 ARCHAIC PERIOD (APPROXIMATELY 8000-1000 B.C.)

By about 8000 B.C. the gradual transition from a post glacial tundra-like environment to an essentially modern environment was largely complete. Prior to European clearance of the landscape for timber and cultivation, the area was characterized by forest. The Archaic Period is the longest and the most apparently stable of the cultural periods identified through archaeology. The Archaic Period is divided into the Early, Middle and Late Sub-Periods, each represented by specific styles in projectile point manufacture. Many more sites of this period are found throughout Ontario, than of the Palaeo-Indian Period. This is probably a reflection of two factors: the longer period of time reflected in these sites, and a greater population density. The greater population was likely the result of a more diversified subsistence strategy carried out in an environment offering a greater variety of abundant resources. (Smith 2002:58-59)

Current interpretations suggest that the Archaic Period populations followed a seasonal cycle of resource exploitation. Although similar in concept to the practices speculated for the big game hunters of the Palaeo-Indian Period, the Archaic populations utilized a much broader range of resources, particularly with respect to plants. It is suggested that in the spring and early summer, bands would gather at the mouths of rivers and at rapids to take advantage of fish spawning runs. Later in the summer and into the fall season, smaller groups would move to areas of wetlands to harvest nuts and wild rice. During the winter, they would break into yet smaller groups probably based on the nuclear family and perhaps some additional relatives to move into the interior for hunting. The result of such practices would be to create a distribution of sites across much of the landscape. (Smith 2002: 59-60).

The material culture of this period is much more extensive than that of the Palaeo-Indians. Stylistic changes between Sub-Periods and cultural groups are apparent, although the overall quality in production of chipped lithic tools seems to decline. This period sees the introduction of ground stone technology in the form of celts (axes and adzes), manos and metates for grinding nuts and fibres, and decorative items like gorgets, pendants, birdstones, and bannerstones. Bone tools are also evident from this time period. Their presence may be a result of better preservation from these more recent sites rather than a lack of such items in earlier occupations. In addition, copper and exotic chert types appear during the period and are indicative of extensive trading (Smith 2002: 58-59).

5.2.1.3 WOODLAND PERIOD (APPROXIMATELY 1000 B.C.-1650 A.D.)

The primary difference in archaeological assemblages that differentiates the beginning of the Woodland Period from the Archaic Period is the introduction of ceramics to Ontario populations. This division is probably not a reflection of any substantive cultural changes, as the earliest sites of this period seem to be in all other respects a continuation of the Archaic mode of life with ceramics added as a novel technology. The seasonally based system of resource exploitation and associated population mobility persists for at least 1500 years into the Woodland Period. (Smith 2002: 61-62)

The Early Woodland Sub-Period dates from about 1000-400 B.C. Many of the artifacts from this time are similar to the late Archaic and suggest a direct cultural continuity between these two temporal divisions. The introduction of pottery represents an entirely new technology that was probably acquired through contact with more southerly populations from which it likely originates. (Smith 2002:62)

The Middle Woodland Sub-Period dates from about 400 B.C.-800 A.D. Within the region including the study area, a complex emerged at this time termed "Point Peninsula". Point Peninsula pottery reflects a greater sophistication in pottery manufacture compared with the earlier industry. The paste and temper of the new pottery is finer and new decorative techniques such as dentate and pseudo-scallop stamping appear. There is a noted Hopewellian influence in southern Ontario populations at this time. Hopewell influences from south of the Great Lakes include a widespread trade in exotic materials and the presence of distinct Hopewell style artifacts such as platform pipes, copper or silver panpipe covers and shark's teeth. The populations of the Middle Woodland participated in a trade network that extended well beyond the Great Lakes Region.

The Late Woodland Sub-Period dates from about 500-1650 A.D. The Late Woodland includes four separate phases: Princess Point, Early Ontario Iroquoian, Middle Ontario Iroquoian and Late Ontario Iroquoian.

The Princess Point phase dates to approximately 500-1000 A.D. Pottery of this phase is distinguished from earlier technology in that it is produced by the paddle method instead of coil and the decoration is characterized by the cord wrapped stick technique. Ceramic smoking pipes appear at this time in noticeable quantities. Princess Point sites cluster along major stream valleys and wetland areas. Maize cultivation is introduced by these people to Ontario. These people were not fully committed to horticulture and seemed to be experimenting with maize production. They generally adhere to the seasonal pattern of occupation practiced by earlier occupations, perhaps staying at certain locales repeatedly and for a larger portion of each year (Smith 2002: 65-66)

The Early Ontario Iroquoian stage dates to approximately 950-1050 A.D. This stage marks the beginning of a cultural development that led to the historically documented Ontario Iroquoian groups that were first contacted by Europeans during the early 1600s (Petun, Neutral, and Huron). At this stage formal semi-sedentary villages emerge. The Early stage of this cultural development is divided into two cultural groups in southern Ontario. The areas occupied by each being roughly divided by the Niagara Escarpment. To the west were

located the Glen Meyer populations, and to the east were situated the Pickering people (Smith 2002: 67).

The Middle Ontario Iroquoian stage dates to approximately 1300-1400 A.D. This stage is divided into two sub-stages. The first is the Uren sub-stage lasting from approximately 1300-1350 A.D. The second of the two sub-stages is known as the Middleport sub-stage lasting from roughly 1350-1400 A.D. Villages tend to be larger throughout this stage than formerly (Smith 2002: 67).

The Late Ontario Iroquoian stage dates to approximately 1400-1650 A.D. During this time the cultural divisions identified by early European explorers are under development and the geographic distribution of these groups within southern Ontario begins to be defined.

5.2.2 GENERAL HISTORICAL OUTLINE

The County of Welland was formed in 1851, and was named after the Welland River. It should be noted that Welland County was one of the first major settlements within Upper Canada (Wikipedia.org 2010). Many of its first settlers were Loyalists and moved to the area as a result of the American Revolution. Due to the presence of the Welland River and to Niagara Falls, this allowed the area to develop rapidly as the River offered easy transportation and energy production. The construction of the Welland Canal began in 1824, and would connect Lake Ontario to Lake Erie. The canal was at first a wooden structure and would later be replaced with stone (Welland.ca 2010). The counties of Lincoln and Welland were amalgamated in to the Regional Municipality of Niagara in 1970 (Wikipedia.org 2010).

Fort Erie was one of the first settlements in Bertie Township, in 1795 it was described as several longhouses with a palisade and 4 rough lumber warehouses for storage and men, there was a ferry across the river to Black Rock on the American side and a tavern and a few houses stood near the landing in Canada. This Fort saw a lot of action in the war of 1812 and after many veterans settled nearby. Bertie Township gets its name from a community of Mennonites that mostly emigrated from Pennsylvania in 1788. The first church was a log building that served about 30 years. By 1860 the log meetinghouse had been replaced by a brick church, which served during the greater period of strength and decline. In 1916 another church was erected on the same grounds and from it dated a revival of interest and attendance for more than a decade, when decline again set in (Fretz 1953).

Map 2 is a facsimile segment from the Historical County Map of Welland County (Tremaine 1862). Map 2 illustrates the location of the study area and environs as of 1862. The study area is shown to belong to Fred Rose; no structures are shown to be within the study area. An historic road is shown to be adjacent to the study area to the east. This road is the current Helena Street. The study area is also shown to be just outside of the town limits of the historic Town of Fort Erie. This demonstrates that the original property of which the study area is a part was settled by the time that the atlas data was compiled. Accordingly, it has been determined that there is potential for archaeological deposits related to early Post-

Contact settlement within the study area. This map does not show the presence of a marsh or pond as in current mapping, however this is likely due to the small size of the water sources.

Map 3 is a facsimile segment of the The Illustrated Historical Atlas of the Counties of Lincoln & Welland (H.R. Page 1876). Map 3 illustrates the location of the study area and environs as of 1876. The study area is shown to belong to Charles L. Rose; one structure is shown to be located centrally along the eastern border of the study area. An historic road is shown to be adjacent to the study area to the east. This road is the current Helena Street. The study area is also shown to be just outside of the town limits of the historic Town of Fort Erie. This demonstrates that the original property of which the study area is a part was settled by the time that the atlas data was compiled. Accordingly, it has been determined that there is potential for archaeological deposits related to early Post-Contact settlement within the study area. This map does not show the presence of a marsh or pond as in current mapping, however this is likely due to the small size of the water sources.

It must be borne in mind that inclusion of names of property owners and depictions of structures and other features within properties on these maps were sold by subscription. Property owners paid to include information or details about their properties. While information included within these maps may provide information about the occupation of a property at a specific moment in time when the information was collected, the absence of such information does not necessarily indicate that the property was not occupied.

5.2.3 CURRENT CONDITIONS

The present use of the study area is as a farmstead. The study area is roughly 8.16 hectares in area. The study area includes within it pasture, wood lot, marsh, pond, three barns, shed and garage. The wood lot is located on the western side of the property, lawn and pasture are located centrally and on the eastern portion of the study area. A paved driveway extends from Helena Street to the barns. The study area is bounded on the north, west, and south by woodlot, on the east by Helena Street. The study area is approximately 430 metres to the north of the intersection of the Helena Street and Washington Road. A plan of the study area is included within this report as **Map 4**. Current conditions encountered during the Stage 2 Property Assessment are illustrated in Maps 5 & 6.

5.2.4 SUMMARY OF HISTORICAL CONTEXT

The brief overview of readily available documentary evidence indicates that the study area is situated within an area that was close to historic transportation routes and in an area well populated during the nineteenth century. The study area is just outside of the town limits of historic Fort Erie. Historic mapping illustrates an historic home within the study area and therefore has potential for sites relating to early Post-Contact settlement. Background research indicates the property has potential for significant archaeological resources of Native origins based on proximity to a natural source of potable water.

5.3 ARCHAEOLOGICAL CONTEXT

The Archaeological Sites Database administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) indicates that there are ten (10) previously documented sites within 1 kilometre of the study area. However, it must be noted that this is based on the assumption of the accuracy of information compiled from numerous researchers using different methodologies over many years. AMICK Consultants Limited assumes no responsibility for the accuracy of site descriptions, interpretations such as cultural affiliation, or location information derived from the Archaeological Sites Database administered by MHSTCI. In addition, it must also be noted that a lack of formerly documented sites does not indicate that there are no sites present as the documentation of any archaeological site is contingent upon prior research having been conducted within the study area.

Background research shows that one (1) previous study has taken place within the study area. For further information see:

Amec Foster Wheeler Environment & Infrastructure. (2018). *Stage 1 Archaeological Assessment Proposed Draft Plan of Subdivision 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie, Town of Fort Erie, Regional Municipality of Niagara, Ontario*. London, Ontario. Archaeological License Report on File With the Ministry of Heritage, Sport, Tourism and Culture Industries, Toronto, Ontario.

Data contained in previous archaeological reports in close proximity to the study area that is relevant to Stage 1 Background Study is defined within the Standards and Guidelines for Consultant Archaeologists in Section 7.5.8 Standard 4 as follows:

*“Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area, as **documented by all available reports that include archaeological fieldwork carried out on the lands to be impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50 m) to those lands.**”*

(MTC 2011: 126 Emphasis Added)

In accordance with data supplied by MHSTCI for the purposes of completing this study, there is one previous report detailing, “*archaeological fieldwork carried out on the lands to be impacted by this project*”, however there are no previous reports documenting known archaeological sites within 50 metres of the study area.

The Standards and Guidelines for Consultant Archaeologists stipulates that the necessity to summarize the results of previous archaeological assessment reports, or to cite MHSTCI File Numbers in references to other archaeological reports, is reserved for reports that are directly relevant to the fieldwork and recommendations for the study area (S & Gs 7.5.7, Standard 2, MTC 2011: 125). This is further refined and elaborated upon in Section 7.5.8, Standards 4 &

5, MTC 2011:

“4. Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area, as documented by all available reports that include archaeological fieldwork carried out on the lands to be impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50m) to those lands.”

“5. If previous findings and recommendations are relevant to the current stage of work, provide the following:

- a. *a brief summary of previous findings and recommendations*
- b. *documentation of any differences in the current work from the previously recommended work*
- c. *rationale for the differences from the previously recommended work”*

(Emphasis Added)

The above-noted report does have relevance to the lands to be potentially impacted by the proposed undertaking, does include fieldwork and recommendations that are relevant to the study area, however it does not document any sites within 50 metres of the study area. Therefore, there is a requirement to include summary data for the previous report.

The study area is situated within an area (Niagara Region) that is in the process of creating and Archaeological Management Plan. In 2019, the Region of Niagara produced the Niagara Region Archaeological Management Plan: Phase II Research and Background Report (ASI 2019). This report suggests recommended best practices in archaeological resource planning through development of an Archaeological Management Plan (AMP). The purpose of creating the AMP is to more easily identify where archaeological assessments are required and manage archaeological resources, all within compliance of the Provincial Policy Statement (2020) and the revised Heritage Act (2005) (ASI 2019).

It must be further noted that there are no relevant plaques associated with the study area, which would suggest an activity or occupation within, or in close proximity to, the study area that may indicate potential for associated archaeological resources of significant CHVI.

In addition, archaeological sites data is also used to determine if any archaeological resources had been formerly documented within or in close proximity to the study area and if these same resources might be subject to impacts from the proposed undertaking. This data was also collected in order to establish the relative significance of any resources that might be encountered during the conduct of the present study. For example, the relative rarity of a site can be used to assign an elevated level of significance to a site that is atypical for the immediate vicinity. The requisite archaeological sites data of previously registered archaeological sites was collected from the MHSTCI and the corporate research library of AMICK Consultants Limited. The Stage 1 Background Research methodology also includes a review of the most detailed available topographic maps, historical settlement maps,

archaeological management plans (where applicable) and commemorative plaques or monuments. When previous archaeological research documents lands to be impacted by the proposed undertaking or archaeological sites within 50 metres of the study area, the reports documenting this earlier work are reviewed for pertinent information. AMICK Consultants Limited will often modify this basic methodology based on professional judgment to include additional research (such as, local historical works or documents and knowledgeable informants).

5.3.1 PRE-CONTACT REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MHSTCI. As a result it was determined that six (6) archaeological sites relating directly to Pre-Contact habitation/activity had been formally registered within the immediate vicinity of the study area. Three (3) of these sites (AfGr-81, AfGr-6, & AfGr-5) are multi-component sites listed as both Pre-Contact and Post-Contact sites All previously registered Pre-Contact sites are briefly described below in Table 1:

TABLE 1 PRE-CONTACT SITES WITHIN 1KM

Site Name	Borden #	Site Type	Cultural Affiliation
AfGr-98 (P3)	AfGr-98	Unknown, Scatter	Woodland (Aboriginal)
Site AfGr-97 (P2)	AfGr-97	Scatter	Pre-Contact (Aboriginal)
	AfGr-86	Findspot	Woodland (Aboriginal)
Military Reserve Lot 8	AfGr-81	Camp/Campsite, House, Log	Aboriginal, Euro-Canadian
Snake Hill	AfGr-6	Othercamp/Campsite, Cemetery	Aboriginal, American
Erie Beach	AfGr-5	Camp/campsite, fishing, fur trade	Aboriginal, Euro-Canadian

None of the above noted archaeological sites are situated within 300 metres of the study area. Therefore, they have no impact on determinations of archaeological potential for further archaeological resources related to Pre-Contact activity and occupation with respect to the archaeological assessment of the proposed undertaking.

The study area contains a pond and marsh, which may be used as a source for potable water. Therefore, the distance to water criteria is established.

Table 2 illustrates the chronological development of cultures within southern Ontario prior to the arrival of European cultures to the area at the beginning of the 17th century. This general cultural outline is based on archaeological data and represents a synthesis and summary of research over a long period of time. It is necessarily generalizing and is not necessarily representative of the point of view of all researchers or stakeholders. It is offered here as a

rough guideline and as a very broad outline to illustrate the relationships of broad cultural groups and time periods.

TABLE 2 PRE-CONTACT CULTURAL CHRONOLOGY FOR SOUTHERN ONTARIO

Years ago	Period	Southern Ontario
250	Terminal Woodland	Ontario and St. Lawrence Iroquois Cultures
1000 2000	Initial Woodland	Princess Point, Saugeen, Point Peninsula, and Meadowood Cultures
3000 4000 5000 6000	Archaic	Laurentian Culture
7000 8000 9000 10000 11000	Palaeo-Indian	Plano and Clovis Cultures
		(Wright 1972)

5.3.2 POST-CONTACT REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MHSTCI. As a result it was determined that five (5) archaeological sites relating directly to Post-Contact habitation/activity had been formally registered within the immediate vicinity of the study area. Three (3) of these sites (AfGr-81, AfGr-6, & AfGr-5) are multi-component sites listed as both Pre-Contact and Post-Contact sites. All previously registered Post-Contact sites are briefly described below in Table 3:

TABLE 3 POST-CONTACT SITES WITHIN 1KM

Site Name	Borden #	Site Type	Cultural Affiliation
Military Reserve Lot 8	AfGr-81	Camp/Campsite, House, Log	Aboriginal, Euro-Canadian
Erie Beach Park	AfGr-78	Other Erie Beach Amusement Park	Euro-Canadian
Dominion 2	AfGr-69	Unknown	Post-Contact
Snake Hill	AfGr-6	Othercamp/Campsite, Cemetery	Aboriginal, American
Erie Beach	AfGr-5	Camp/campsite, fishing, fur trade	Aboriginal, Euro-Canadian

None of the above noted archaeological sites are situated within 300 metres of the study area. Therefore, they have no impact on determinations of archaeological potential for further

archaeological resources related to Post-Contact activity and occupation with respect to the archaeological assessment of the proposed undertaking.

5.3.3 UNKNOWN CULTURAL AFFILIATION REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MHSTCI. As a result it was determined that two (2) archaeological sites relating to unknown cultural habitation/activity had been formally registered within the immediate vicinity of the study area. All previously registered unknown cultural affiliation sites are briefly described below in Table 4:

TABLE 4 UNKNOWN CULTURAL AFFILIATION SITES WITHIN 1KM

Site Name	Borden #	Site Type	Cultural Affiliation
N/A	AfGr-52	N/A	N/A
N/A	AfGr-51	N/A	N/A

None of the above noted archaeological sites are situated within 300 metres of the study area. Therefore, they have no impact on determinations of archaeological potential for further archaeological resources.

5.3.4 PREVIOUS INVESTIGATIONS

Amec Foster Wheeler Environment & Infrastructure in 2017 completed a Stage 1 Archaeological Assessment on the same lands as the current study area. Below is the executive summary of the assessment and the resulting recommendations:

Amec Foster Wheeler Environment & Infrastructure (“Amec Foster Wheeler”) was retained by 1891187 Ontario Inc. (the CLIENT) to conduct a Stage 1 archaeological assessment for a proposed draft plan of subdivision. This archaeological assessment was triggered under the Planning Act and was conducted prior to development. The property is located at 613 Helena Street in the Town of Fort Erie, Regional Municipality of Niagara. Historically, the property was located on Part of Lot 1, Concession 2 on Lake Erie, in the Township of Bertie, County of Welland, Ontario (Appendix A: Figures 1 and 2). The study area is approximately 8.16 hectares (20.16 acres) in size.

The Stage 1 archaeological assessment was carried out in accordance with the Ontario Ministry of Tourism, Culture and Sport’s (“MTCS”) Standards and Guidelines for Consultant Archaeologists (2011), under an Ontario Professional Licence to Conduct Archaeological Fieldwork (P066) held by Kristy O’Neal, Senior Archaeologist at Amec Foster Wheeler. The project information was acknowledged by the MTCS on 20 December 2017 with the approval of PIF number P066-0283-2017 (Stage 1). Permission to conduct the property inspection was granted to Amec

Foster Wheeler by 1891187 Ontario Inc. on 19 December 2017. Permission to conduct the property inspection extended to all required archaeological fieldwork activities, including the recovery and removal of artifacts.

The Stage 1 background study has indicated that undisturbed, relatively level and well drained portions of the subject property have archaeological potential and warrant Stage 2 property assessment for six principal reasons: 1) the presence of an historic farmstead as shown in the 1861 census and 1876 historic atlas map; 2) the presence of historic Helena Street within 100 m; 3) the study area is located just outside the historic limits of the Town of Fort Erie; 4) the presence of seven archaeological sites within a one-kilometre radius providing direct evidence that this general area had been exploited by pre-contact Aboriginal and historic Euro-Canadian peoples; 5) the presence of a natural water source, Kraft Drain, just over 300 m to the east; and 6) the presence of a marsh within the study area.

On the basis of the Stage 1 property inspection and a review of recent land use history, Amec Foster Wheeler has identified that: 1) 3% (0.24 hectares) of the study area does not require Stage 2 assessment because archaeological potential has been removed due to soil disturbance; 2) 1% (0.11 hectares) of the study area does not require Stage 2 assessment because it is permanently wet; 3) 96% (7.81 hectares) of the study area retains archaeological potential and warrants Stage 2 assessment (Appendix A: Figure 5).

Areas that retain archaeological potential include 4.23 hectares of grassed pasture lands where ploughing is viable and 3.58 hectares of landscaped lawn and woodlot where ploughing is not viable. The pasture lands should be assessed using pedestrian survey at 5-m intervals. The non-ploughable portion of the study area should be assessed using test pit survey at 5-m intervals.

In light of these results, the following recommendations are made, subject to the advice on compliance with legislation contained in Section 6.0:

1. A Stage 2 archaeological assessment in the form of a test pit survey should be completed on the landscaped area around the existing house and woodlot (unploughable land) (3.58 ha in size) as shown in Appendix A: Figure 5. The test pits should be excavated by hand at regular five-metre intervals in a grid-pattern and to a depth of 5 cm into the subsoil. The stratigraphy of soils excavated during test pitting should be examined in order to detect cultural soil horizons. In addition, excavated soils are to be screened through 1/4 inch (6 mm) mesh in order to facilitate the recovery of archaeologically significant artifacts. The pattern and intensity of test pit placement may be altered due to changes in archaeological potential in different parts of a study area and/or the presence of disturbed soils. Any areas of 'disturbance' should be evaluated and photo-documented. ^[SEP]If archaeological resources are found their exact distribution should be documented and any diagnostic artifacts recovered and inventoried. Upon discovery of cultural materials, the survey grid should be continued to determine whether there are enough archaeological

resources to meet the criteria for making a recommendation to carry out a Stage 3 assessment. In the event that insufficient archaeological resources are recovered, eight additional test pits are to be dug in a 2 to 2.5 metre radius around the positive test pit, followed by the excavation of a 1 x 1 m unit at the positive test pit. Cultural artifacts encountered are to be collected and bagged according to provenience. [SEP]

2. A Stage 2 archaeological assessment in the form of a pedestrian survey should be completed on the fallow field (4.23 ha in size) as shown in Appendix A: Figure 5. The fields must be ploughed by means of mouldboard ploughing and, if necessary, disk harrowing. At least 80% of the ground surface must be visible in order to conduct the pedestrian survey. The fields should be allowed to weather through one heavy, or several light rainfalls, to improve surface visibility. Areas of archaeological potential are to be surveyed at regular five-meter intervals. [SEP] If archaeological resources are encountered, the 5 m transect should be decreased to 1 m intervals over a minimum 20 m radius around the archaeological find until the full extent of the scatter has been identified or the find is determined to be isolated. All formal artifact types and diagnostic categories are to be collected and enough artifacts should be left in-situ to relocate the site in the event that it is necessary to conduct further assessment. The exact location of archaeological resources should be documented using one or more of a combination of: the Global Positioning System, topographic survey or other precision measurements. [SEP]

3. The remainder of the study area, including 0.11 hectares of permanently wet soil and 0.24 hectares of previously disturbed land does not require further archaeological assessment due to low archaeological potential.

The above recommendations are subject to Ministry of Tourism, Culture and Sport approval, and it is an offence to alter any of the study area without Ministry of Tourism, Culture, and Sport concurrence.

No grading or other activities that may result in the destruction or disturbance to the study area is permitted until notice of Ministry of Tourism, Culture, and Sport approval has been received.

(Amec Foster Wheeler 2018: i-iii)

5.3.5 LOCATION AND CURRENT CONDITIONS

The study area is described as 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie (Geographic Township of Bertie, County of Welland), Town of Fort Erie, Regional Municipality of Niagara. The study area was subject to this assessment as a requirement under the Planning Act (RSO 1990) and the Provincial Policy Statement (2020) in order to support a Draft Plan of Subdivision and companion Zoning By-law Amendment application as part of the pre-submission process.

The present use of the study area is as a farmstead. The study area is roughly 8.16 hectares in area. The study area includes within it pasture, wood lot, marsh, pond, three barns, shed and garage. The wood lot is located on the western side of the property, lawn and pasture are located centrally and on the eastern portion of the study area. A paved driveway extends from Helena Street to the barns. The study area is bounded on the north, west, and south by woodlot, on the east by Helena Street. The study area is approximately 430 metres to the north of the intersection of the Helena Street and Washington Road. A plan of the study area is included within this report as Map 4. Current conditions encountered during the Stage 2 Property Assessment are illustrated in Maps 5 & 6.

5.3.6 PHYSIOGRAPHIC REGION

The study area is situated within the Haldimand Clay Plain physiographic region. The Haldimand Clay Plain lies between the Niagara Escarpment and Lake Erie, and consists of an intermixture of stratified clay and till. The study area falls within an area of the plain where good silt loam is prime for orchards and vineyards of grapes, pears and apples (Chapman and Putnam 1984: 156-159).

5.3.7 SURFACE WATER

Sources of potable water, access to waterborne transportation routes, and resources associated with watersheds are each considered, both individually and collectively to be the highest criteria for determination of the potential of any location to support extended human activity, land use, or occupation. Accordingly, proximity to water is regarded as the primary indicator of archaeological resource potential. The Standards and Guidelines for Consultant Archaeologists stipulates that undisturbed lands within 300 metres of a water source are considered to have archaeological potential (MTC 2011: 21).

A pond and marsh are located within the study area along the northern and southern border.

5.3.8 CURRENT PROPERTY CONDITIONS CONTEXT

Current characteristics encountered within an archaeological research study area determine if property Assessment of specific portions of the study area will be necessary and in what manner a Stage 2 Property Assessment should be conducted, if necessary. Conventional assessment methodologies include pedestrian survey on ploughable lands and test pit methodology within areas that cannot be ploughed. For the purpose of determining where property Assessment is necessary and feasible, general categories of current landscape conditions have been established as archaeological conventions. These include:

5.3.8.1 BUILDINGS AND STRUCTURAL FOOTPRINTS

A building, for the purposes of this particular study, is a structure that exists currently or has existed in the past in a given location. The footprint of a building is the area of the building formed by the perimeter of the foundation. Although the interior area of building

foundations would often be subject to property Assessment when the foundation may represent a potentially significant historic archaeological site, the footprints of existing structures are not typically assessed. Existing structures commonly encountered during archaeological assessments are often residential-associated buildings (houses, garages, sheds), and/or component buildings of farm complexes (barns, silos, greenhouses). In many cases, even though the disturbance to the land may be relatively shallow and archaeological resources may be situated below the disturbed layer (e.g. a concrete garage pad), there is no practical means of assessing the area beneath the disturbed layer. However, if there were evidence to suggest that there are likely archaeological resources situated beneath the disturbance, alternative methodologies may be recommended to study such areas.

The study area contains a house, three barns, a shed, and a garage. Maps 5 & 6 of this report illustrate the locations of these features.

5.3.8.2 DISTURBANCE

Areas that have been subjected to extensive and deep land alteration that has severely damaged the integrity of archaeological resources are known as land disturbances. Examples of land disturbances are areas of past quarrying, major landscaping, and sewage and infrastructure development (MTC 2011: 18), as well as driveways made of gravel or asphalt or concrete, in-ground pools, and wells or cisterns. Surfaces paved with interlocking brick, concrete, asphalt, gravel and other surfaces meant to support heavy loads or to be long wearing hard surfaces in high traffic areas, must be prepared by the excavation and removal of topsoil, grading, and the addition of aggregate material to ensure appropriate engineering values for the supporting matrix and also to ensure that the installations shed water to avoid flooding or moisture damage. All hard surfaced areas are prepared in this fashion and therefore have no or low archaeological potential. Major utility lines are conduits that provide services such as water, natural gas, hydro, communications, sewage, and others. These major installations should not be confused with minor below ground service installations not considered to represent significant disturbances removing archaeological potential, such as services leading to individual structures which tend to be comparatively very shallow and vary narrow corridors. Areas containing substantial and deeply buried services or clusters of below ground utilities are considered areas of disturbance, and may be excluded from Stage 2 Property Assessment. Disturbed areas are excluded from Stage 2 Property Assessment due to no or low archaeological potential and often because they are also not viable to assess using conventional methodology.

*“Earthwork is one of the major works involved in road construction. This process includes excavation, material removal, filling, compaction, and construction. Moisture content is controlled, and compaction is done according to standard design procedures. Normally, rock explosion at the road bed is not encouraged. While filling a depression to reach the road level, **the original bed is flattened after the removal of the topsoil.** The fill layer is distributed and compacted to the designed specifications. This procedure is repeated until the compaction desired is reached. **The fill material should not contain organic elements, and possess a low index of***

*plasticity. Fill material can include gravel and decomposed rocks of a particular size, but should not consist of huge clay lumps. Sand clay can be used. The area is considered to be adequately compacted when the roller movement does not create a noticeable deformation. **The road surface finish is reliant on the economic aspects, and the estimated usage.**” [Emphasis Added]*

(Goel 2013)

The supporting matrix of a hard paved surface cannot contain organic material which is subject to significant compression, decay and moisture retention. Topsoil has no engineering value and must be removed in any construction application where the surface finish at grade requires underlying support.

Installation of sewer lines and other below ground services associated with infrastructure development often involves deep excavation that can remove archaeological potential. This consideration does not apply to relatively minor below ground services that connect structures and facilities to services that support their operation and use. Major servicing corridors will be situated within adjacent road allowances with only minor, narrow and relatively shallow underground services entering into the study area to connect existing structures to servicing mainlines. The relatively minor, narrow and shallow services buried within a residential property do not require such extensive ground disturbance to remove or minimize archaeological potential within affected areas.

The study area contains disturbance in the form of structures, a paved driveway and a gravel road to the barns. Maps 5 & 6 of this report illustrate the locations of these features.

5.3.8.3 LOW-LYING AND WET AREAS

Landscape features that are covered by permanently wet areas, such as marshes, swamps, or bodies of water like streams or lakes, are known as low-lying and wet areas. Low-lying and wet areas are excluded from Stage 2 Property Assessment due to inaccessibility.

The study area contains low-lying and wet areas in the form of a pond and wet, marshy land. Most of the study area is permanently low-lying and wet. Maps 5 & 6 of this report illustrate the locations of these features. It is significant to note that Map 1 (topographic GIS) shows that the pasture area of the study area is the only open space within a swamp surrounding the property on all sides.

5.3.8.4 STEEP SLOPE

Landscape which slopes at a greater than (>) 20 degree change in elevation, is known as steep slope. Areas of steep slope are considered uninhabitable, and are excluded from Stage 2 Property Assessment.

Generally, steep slopes are not assessed because steep slopes are interpreted to have low potential, not due to viability to assess, except in cases where the slope is severe enough to

become a safety concern for archaeological field crews. In such cases, the Occupational Health and Safety Act takes precedence as indicated in the introduction to the Standards and Guidelines. AMICK Consultant Limited policy is to assess all slope areas whenever it is safe to do so. Assessment of slopes, except where safety concerns arise, eliminates the invariably subjective interpretation of what might constitute a steep slope in the field. This is done to minimize delays due to conflicts in such interpretations and to increase the efficiency of review.

The study area does not contain areas of steep slope.

5.3.8.5 WOODED AREAS

Areas of the property that cannot be ploughed, such as natural forest or woodlot, are known as wooded areas. These wooded areas qualify for Stage 2 Property Assessment, and are required to be assessed using test pit survey methodology.

The study area contains a wooded area in the western portion of the property. However, this wooded area is located within the wet, marshy portions of the study area and, therefore, is considered a low-lying and wet area of low archaeological potential. Maps 5 & 6 of this report illustrate the locations of these features.

5.3.8.6 PLOUGHABLE AGRICULTURAL LANDS

Areas of current or former agricultural lands that have been ploughed in the past are considered ploughable agricultural lands. Ploughing these lands regularly turns the soil, which in turn brings previously buried artifacts to the surface, which are then easily identified during visual inspection. Furthermore, by allowing the ploughed area to weather sufficiently through rainfall, soil is washed off of exposed artifacts at the surface and the visibility of artifacts at the surface of recently worked field areas is enhanced markedly. Pedestrian survey of ploughed agricultural lands is the preferred method of physical assessment because of the greater potential for finding evidence of archaeological resources if present.

The study area does not contain any ploughable lands as the lands are to be retained for livestock for the near future.

5.3.8.7 LAWN, PASTURE, MEADOW

Landscape features consisting of former agricultural land covered in low growth, such as lawns, pastures, meadows, shrubbery, and immature trees. These are areas that may be considered too small to warrant ploughing, (i.e. less than one hectare in area), such as yard areas surrounding existing structures, and land-locked open areas that are technically workable by a plough but inaccessible to agricultural machinery. These areas may also include open area within urban contexts that do not allow agricultural tillage within

municipal or city limits or the use of urban roadways by agricultural machinery. These areas are required to be assessed using test pit survey methodology.

The study area contains mostly pasture and lawn. Most of this land is wet and marshy, however. Therefore, it is considered a low-lying and wet area of low archaeological potential. The current owner of the study area informed the Field Director at the time of the Stage 2 Archaeological Property Assessment that the property has never been ploughed and was maintained as pasture owing to this reason. The high water table and moist nature of the ground did not make agricultural tillage feasible. A wet cedar forest area surrounds the study area and suggests that much, if not all of the study area was in a similar condition prior to clearing of the trees over some of the area. Maps 5 & 6 of this report illustrate the locations of these features.

5.3.9 SUMMARY

Background research indicates the vicinity of the study area has potential for archaeological resources of Native origins based on proximity to a source of potable water within the study area. Background research also suggests potential for archaeological resources of Post-Contact origins based on proximity to a historic roadway, the presence of an historic structure within the study area, and proximity to areas of documented historic settlement within the nearby Town of Fort Erie.

Current conditions within the study area indicate that some areas of the property may have no or low archaeological potential and do not require Stage 2 Property Assessment or should be excluded from Stage 2 Property Assessment. These areas would include the footprint of existing structures, areas under pavement, previously disturbed areas and low-lying and wet areas. The low-lying and wet areas observed within the study area were not viable to assess. Attempted test pits exposed the high water table just below the ground surface. Consequently, it is unlikely that anyone would have made use of this area as a camp or activity area in the past. Therefore, the study area is considered to be of low potential. Of additional consideration is the surrounding wet cedar woodlot which suggests that the larger area of which the study area is a part is generally wet year round.

Archaeological potential does not indicate that there are necessarily sites present, but that environmental and historical factors suggest that there may be as yet undocumented archaeological sites within lands that have not been subject to systematic archaeological research in the past.

6.0 FIELD WORK METHODS AND WEATHER CONDITIONS

This report confirms that the study area was subject to Stage 2 Property Assessment by attempted high intensity test pit methodology at a five-metre interval between individual test pits where viable on 5 April 2021.

The fieldwork undertaken as a component of this study was conducted according to the archaeological fieldwork standards and guidelines (including weather and lighting conditions). Weather conditions were appropriate for the necessary fieldwork required to complete the Stage 2 Property Assessment and to create the documentation appropriate to this study. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Maps 5 & 6 of this report. Upon completion of the property inspection of the study area, it was determined that select areas would require Stage 2 Property Assessment.

It must be noted that AMICK Consultants Limited has been retained to assess lands as specified by the proponent. As such, AMICK Consultants Limited is constrained by the terms of the contract in place at the time of the Archaeological Assessment and can only enter into lands for which AMICK Consultants Limited has received consent from the owner or their agent(s). The proponent has been advised that the entire area within the planning application must be subject to archaeological assessment and that portions of the planning application may only be excluded if they are of low potential, are not viable to assess, or are subject to planning provisions that would restrict any such areas from any form of ground altering activities.

6.1 PROPERTY INSPECTION

During the Stage 2 Property Assessment, a detailed examination and photo documentation was carried out on the study area in order to document the existing conditions of the study area to facilitate the Stage 2 Property Assessment. All areas of the study area were visually inspected and select features were photographed as a representative sample of each area defined within Maps 5 & 6. Observations made of conditions within the study area at the time of the inspection were used to inform the requirement for Stage 2 Property Assessment for portions of the study area as well as to aid in the determination of appropriate Stage 2 Property Assessment strategies. Attempts at test pit survey in suspected low-lying and wet areas exposed water just below the ground surface. These areas therefore are considered to be of low potential and not viable to assess. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Maps 5 & 6 of this report.

6.2 TEST PIT SURVEY

In accordance with the Standards and Guidelines for Consultant Archaeologists, test pit survey is required to be undertaken for those portions of the study area where deep prior disturbance had not occurred prior to assessment or which were accessible to survey. Test pit survey is only used in areas that cannot be subject to ploughing or cultivation. This report confirms that the conduct of test pit survey within the study area conformed to the following standards:

- 1. Test pit survey only on terrain where ploughing is not possible or viable, as in the following examples:*
-

a. wooded areas

[Not Applicable - All wooded areas within the study area are permanently, low-lying and wet areas]

b. pasture with high rock content

[Not Applicable - The study area does not contain any pastures with high rock content]

c. abandoned farmland with heavy brush and weed growth

[Not Applicable - The study area does not contain any abandoned farmland with heavy brush and weed growth]

d. orchards and vineyards that cannot be strip ploughed (planted in rows 5 m apart or less), gardens, parkland or lawns, any of which will remain in use for several years after the survey

[Not Applicable - The study area does not contain any of the above-mentioned circumstances]

e. properties where existing landscaping or infrastructure would be damaged. The presence of such obstacles must be documented in sufficient detail to demonstrate that ploughing or cultivation is not viable.

[The study area contains pasture that is currently used for livestock, therefore ploughing was not viable. The study area also contains a residence and lawn, which for the time being is to be maintained. These areas were subject to test pit survey]

f. narrow (10 m or less) linear survey corridors (e.g., water or gas pipelines, road widening). This includes situations where there are planned impacts 10 m or less beyond the previously impacted limits on both sides of an existing linear corridor (e.g., two linear survey corridors on either side of an existing roadway). Where at the time of fieldwork the lands within the linear corridor meet the standards as stated under the above section on pedestrian survey land preparation, pedestrian survey must be carried out. Space test pits at maximum intervals of 5 m (400 test pits per hectare) in areas less than 300 m from any feature of archaeological potential.

[Not Applicable – The study area does not contain any linear corridors]

2. *Space test pits at maximum intervals of 5 m (400 test pits per hectare) in areas less than 300 m from any feature of archaeological potential.*

[Where test pitting was viable, all test pits were spaced at an interval of 5m between individual test pits]

3. *Space test pits at maximum intervals of 10 m (100 test pits per hectare) in areas more than 300 m from any feature of archaeological potential.*

[The entirety of the test pitted areas of the study area were assessed using high intensity test pit methodology at an interval of 5 metres between individual test pits]

4. *Test pit to within 1 m of built structures (both intact and ruins), or until test pits show evidence of recent ground disturbance.*

[Test pits were placed within 1m of all built structures]

5. *Ensure that test pits are at least 30 cm in diameter.*

[All test pits were at least 30 cm in diameter]

6. *Excavate each test pit, by hand, into the first 5 cm of subsoil and examine the pit for stratigraphy, cultural features, or evidence of fill.*

[Regardless of the interval between individual test pits, all test pits were excavated by hand into the first 5 cm of subsoil where possible and examined for stratigraphy, cultural features, or evidence of fill. In areas where topsoil was not present, test pits were excavated to a minimum of 30cm in depth to ensure that suspected subsoils, if present, were not layers of fill or waterborne materials overlying buried topsoil. If these areas consisted of fill soils, test pits were also excavated a minimum of 30 cm below grade in order to ensure disturbance extended below even deep topsoil layers such as those encountered in agricultural fields to ensure that the depth of disturbance was sufficient to remove archaeological potential in most contexts. Where other evidence indicates locations of potentially significant archaeological sites that may include cultural deposits below fill soils, alternative strategies to explore beneath the fill layers found in some areas may be necessary to complete the Stage 2 Property Assessment. In such cases, further Stage 2 Property Assessment may be recommended following completion of the property survey under conventional methodologies.]

7. *Screen soil through mesh no greater than 6 mm.*

[All soil was screened through mesh no greater than 6 mm]

8. *Collect all artifacts according to their associated test pit.*

[Not Applicable - No archaeological resources were encountered]

9. *Backfill all test pits unless instructed not to by the landowner.*

[All test pits were backfilled]

(MTC 2011: 31-32)

“A combination of property inspection and test pitting may be used when initial Stage 2 results determine that all or part of the project area may in fact be disturbed. The Stage 2 survey may then consists of a detailed inspection (equivalent to Stage 1), combined with test pitting.”

1. *If it was not done as part of Stage 1, inspect and document the disturbed areas according to the standards described for Stage 1 property inspections.*

[The disturbed areas of the study area were inspected and documented as per the standards described for Stage 1 property inspections. Areas of suspected disturbance where test pit survey was viable were shovel tested as described below. This disturbed area was limited to the area around the gravel road that runs west to the barns and around the perimeter of the southern barn.]

Standard archaeological survey methodologies employed in Ontario for Stage 2 Archaeological Property Assessment (i.e. pedestrian survey and test pit survey) cannot determine if deeply buried cultural remains are or are not present. The purpose of Stage 2 Property Assessment is not to test for deeply buried deposits. The Standards and Guidelines for Consultants Archaeologists recognize this fact and have a whole separate section covering this specific issue. The only way to determine if deeply buried remains are present is to follow those standards not via a standard Stage 1-2 Archaeological Property Assessment.

In most cases, unless there is documentation or evidence to the contrary, areas where grading has exceeded topsoil depth are areas considered to have no or low archaeological potential because in most cases removal of the topsoil will remove archaeological sites. While archaeological sites are popularly thought of as being deeply buried, archaeological sites begin on the surface of the ground and for most of humanity's history involved no substantial excavations or significant landscape alterations. Only with the rise of urbanization and sedentary settlement do sites begin to accumulate depth. This is a result of continuous building and rebuilding over top of earlier settlements. Deep archaeological sites are created by adding to the surface of an area and building the landform up. Deeply buried archaeological deposits are relatively rare outside of urban environments in Ontario and even within urban contexts, this seldom occurs outside of the historic core of the community where redevelopment has occurred since initial settlement.

If an area was not occupied during a period of potential archaeological significance, there is no potential to locate deeply buried significant archaeological resources. There are only a few very rare exceptions related to historical significance that is not tied to the time period of activity or occupation of a site but to certain historical events and/or personalities.

2. *Place Stage 2 test pits throughout the disturbed areas according to professional judgment (and where physically viable) as to confirm that these areas have been completely disturbed.*

[An area of suspected disturbance was identified during the Property Inspection conducted as part of the Stage 2 Property Assessment. This area consists of a gravel driveway that extended from the asphalt driveway on the eastern side of the property westward toward the barns. Test pits were excavated every 10 metres

across the entirety of this portion of the study area. The intensity of test pit survey conducted is far in excess of the minimum standard required. AMICK Consultants Limited tested the suspected disturbed area at a 10-metre interval to confirm disturbance in a manner consistent with the objectives to ensure that the area is accurately delimited and properly identified. There is no requirement to systematically examine such areas. The Standards and Guidelines require only judgmental testing based on the professional judgment of the investigating archaeologist. In most typical archaeological assessments the entire area of presumed disturbance will be written off as an area of no archaeological potential without thorough testing to demonstrate that the entire area is disturbed or it will be tested at subjective, irregular and inconsistent intervals, and consequently such testing cannot verify that the entire area contained within the presumed limits of disturbance are, in fact, disturbed. The methodology employed here by AMICK Consultants Limited exceeds any requirements of the Standards and Guidelines and that which is generally applied within the industry.

The excavated soil and the profiles of these test pits were examined to determine if each represented an area of disturbance. Test pits were excavated a minimum of 30 cm below grade in order to ensure that test pits were excavated to depths below the surrounding natural grade. This procedure demonstrated that the entire study area consists of fill deposited within a deeply disturbed context. There is no archaeological potential within this area.]

(MTC 2011: 38)

Approximately 85% of the study area was not viable to assess due permanently low-lying and wet areas, the presence of structures, an asphalt driveway and a disturbed gravel driveway. It is significant to note that Map 1 (topographic GIS) shows that the pasture area of the study area is the only open space within a swamp surrounding the property on all sides. Approximately 15% of the study area was lawn that was test pit surveyed at 5 metre intervals.

7.0 RECORD OF FINDS

Section 7.8.2 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 137-138) outlines the requirements of the Record of Finds component of a Stage 2 report:

1. *For all archaeological resources and sites that are identified in Stage 2, provide the following:*
 - a. *a general description of the types of artifacts and features that were identified*
 - b. *a general description of the area within which artifacts and features were identified, including the spatial extent of the area and any relative variations in density*
 - c. *a catalogue and description of all artifacts retained*

- d. *a description of the artifacts and features left in the field (nature of material, frequency, other notable traits).*
2. *Provide an inventory of the documentary record generated in the field (e.g. photographs, maps, field notes).*
3. *Submit information detailing exact site locations on the property separately from the project report, as specified in section 7.6. Information on exact site locations includes the following:*
 - a. *table of GPS readings for locations of all archaeological sites*
 - b. *maps showing detailed site location information.*

7.1 ARCHAEOLOGICAL RESOURCES

No archaeological resources of any description were encountered anywhere within the study area.

7.2 ARCHAEOLOGICAL FIELDWORK DOCUMENTATION

The documentation produced during the field investigation conducted in support of this report includes: one sketch map, one page of photo log, one page of field notes, and 44 digital photographs.

8.0 ANALYSIS AND CONCLUSIONS

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 2 Archaeological Assessment of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation concurrently with the Stage 2 Property Assessment by high intensity test pit methodology at a five-metre interval between individual test pits on 5 April 2021. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) on behalf of the government and citizens of Ontario.

8.2 STAGE 2 ANALYSIS AND CONCLUSIONS

Section 7.8.3 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 138-139) outlines the requirements of the Analysis and Conclusions component of a Stage 2 Property Assessment.

1. *Summarize all finding from the Stage 2 survey, or state that no archaeological sites were identified.*
2. *For each archaeological site, provide the following analysis and conclusions:*

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- a. *A preliminary determination, to the degree possible, of the age and cultural affiliation of any archaeological sites identified.*
- b. *A comparison against the criteria in 2 Stage 2: Property Assessment to determine whether further assessment is required*
- c. *A preliminary determination regarding whether any archaeological sites identified in Stage 2 show evidence of a high level cultural heritage value or interest and will thus require Stage 4 mitigation.*

No archaeological sites or resources were found during the Stage 2 survey of the study area.

9.0 RECOMMENDATIONS

9.1 STAGE 2 RECOMMENDATIONS

Under Section 7.8.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 139) the recommendations to be made as a result of a Stage 2 Property Assessment are described.

- 1) *For each archaeological site, provide a statement of the following:*
 - a. *Borden number or other identifying number*
 - b. *Whether or not it is of further cultural heritage value or interest*
 - c. *Where it is of further cultural heritage value or interest, appropriate Stage 3 assessment strategies*
- 2) *Make recommendations only regarding archaeological matters. Recommendations regarding built heritage or cultural heritage landscapes should not be included.*
- 3) *If the Stage 2 survey did not identify any archaeological sites requiring further assessment or mitigation of impacts, recommend that no further archaeological assessment of the property be required.*

As a result of the Stage 2 Property Assessment of the study area, no archaeological resources were encountered. Consequently, the following recommendations are made:

1. *No further archaeological assessment of the study area is warranted;*
2. *The Provincial interest in archaeological resources with respect to the proposed undertaking has been addressed;*
3. *The proposed undertaking is clear of any archaeological concern.*

10.0 ADVICE ON COMPLIANCE WITH LEGISLATION

While not part of the archaeological record, this report must include the following standard advisory statements for the benefit of the proponent and the approval authority in the land use planning and development process:

- a. This report is submitted to the Minister of Heritage, Sport, Tourism and Culture Industries 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 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 completed 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 archaeologist to carry out archaeological fieldwork, in compliance with sec. 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.*
- e. 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.*

11.0 BIBLIOGRAPHY AND SOURCES

- Amec Foster Wheeler Environment & Infrastructure. (2018). *Stage 1 Archaeological Assessment Proposed Draft Plan of Subdivision 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie, Township of Bertie, Town of Fort Erie, Regional Municipality of Niagara, Ontario*. London, Ontario. Archaeological License Report on File With the Ministry of Heritage, Sport, Tourism and Culture Industries, Toronto, Ontario.
- ASI. (2019). *New Niagara Official Plan: Niagara Region Archaeological Management Plan: Phase II Research and Background Report*. ASI, Toronto.
- Chapman, L.J. & D.F. Putnam. (1984). *The Physiography of Southern Ontario (Third Edition)*. Ontario Geological Survey, Special Report #2. Ontario Ministry of Natural Resources, Toronto.
- Esri. "Topographic" [basemap]. Scale Not Given. "World Topographic Map". March 25 2021. <http://www.arcgis.com/home/item.html?id=30e5fe3149c34df1ba922e6f5bbf808f>.
- Fretz, Joseph C. (1953). Bertie Township (Welland County, Ontario, Canada). *Global Anabaptist Mennonite Encyclopedia Online*. Retrieved 06 June 2011, from <http://www.gameo.org/encyclopedia/contents/B4792.html>.
- Goel, Tarun (2013). Road Construction: History and Procedure. Bright Hub Engineering. Retrieved 24 May 2015 from URL: <http://www.brighthubengineering.com/structural-engineering/59665-road-construction-history-and-procedure/>
- Google Earth (Version 6.0.3.2197) [Software]. (2021). Available from <http://www.google.com/earth/index.html>.
- Kuhlmann, Stacy. (2017). *Types of Soil*. Diagram of Soil Types available from <http://www.tes.com/lessons/AKChU3fbfZKo9g/types-of-soil>.
- Ontario Heritage Act, RSO 1990a, Government of Ontario. (Queen's Printer, Toronto).
- Ontario Heritage Amendment Act, SO 2005, Government of Ontario. (Queen's Printer, Toronto).
- Ontario Ministry of Citizenship, Culture and Recreation (OMCzCR). (1993). *Archaeological Assessment Technical Guidelines, Stages 1-3 and Reporting Format*. (Queen's Printer for Ontario 1993)
- Ontario Ministry of Culture (MCL). (2005). *Conserving a Future for Our Past: Archaeology, Land Use Planning & Development in Ontario (An Educational Primer and Comprehensive Guide for Non-Specialists)*. (Heritage & Libraries Branch, Heritage Operations Unit: Toronto).
- Ontario Ministry of Culture and Communications (MCC) & Ministry of Environment (MOE). (1992). *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments*. (Cultural Programs Branch, Archaeology and Heritage Planning: Toronto).

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Ontario Ministry of Tourism and Culture (MTC). (2011). *Standards and Guidelines for Consultant Archaeologist*. (Programs and Services Branch: Culture Programs Unit, Toronto).

Ontario Planning Act, RSO 1990b, Government of Ontario. (Queen's Printer, Toronto).

Page, H.R. (1876). *Illustrated Historical Atlas of the Counties of Lincoln & Welland, Ontario*. H.R. Page, Toronto.

Provincial Policy Statement (2020). Government of Ontario. (Queen's Printer, Toronto).

Smith, David G. (2002). "Ten Thousand Years: Aboriginal Heritage in Mississauga." In *Mississauga: The First 10,000 Years*. Frank Dieterman, Ed. Mississauga Heritage Foundation, Eastendbooks, Toronto.

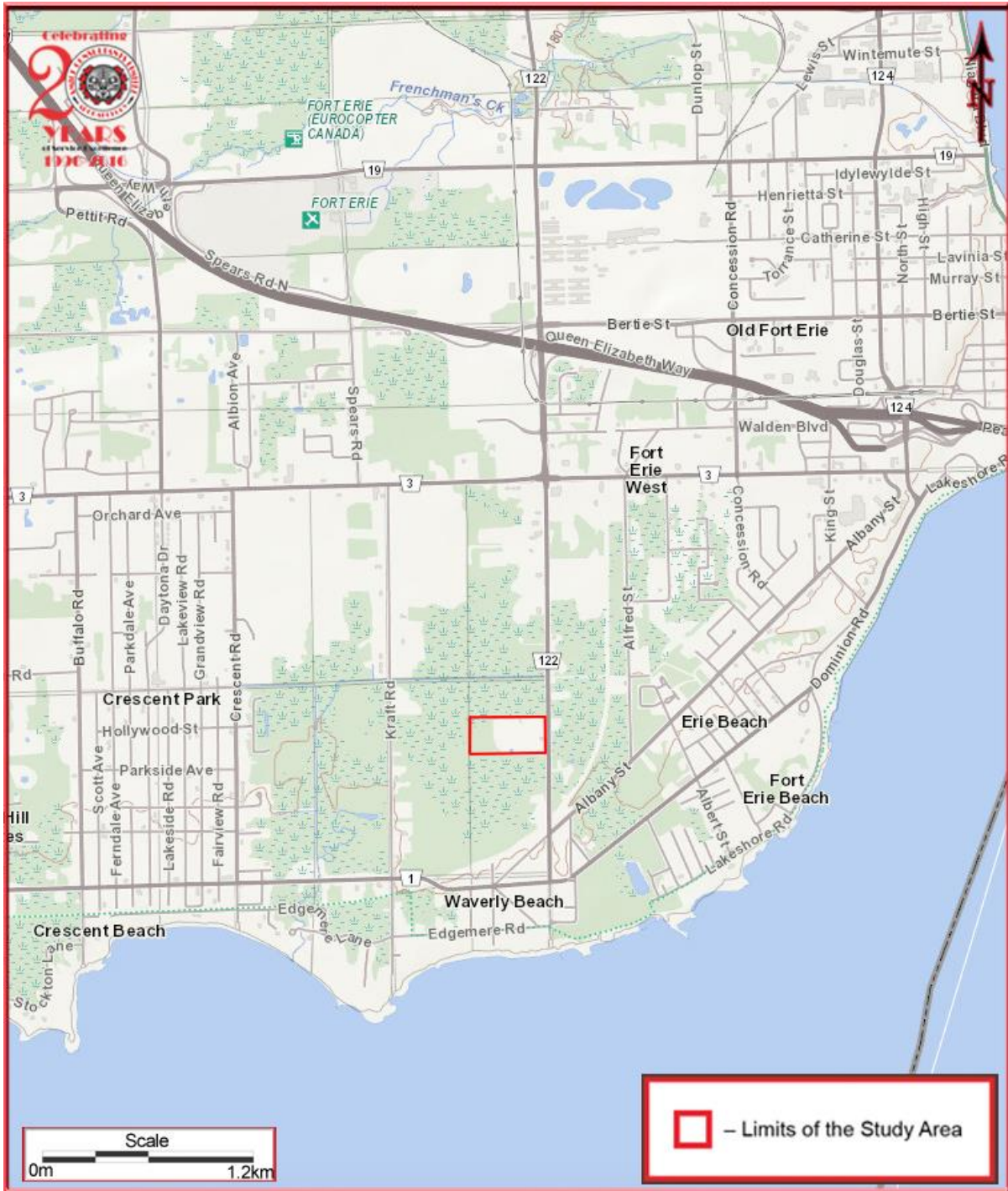
Tremaine, George. (1862). *Historical County Map of Welland County*. George Tremaine, Toronto.

Welland.ca (2010). *History of Welland*. URL: <http://www.welland.ca/Facts/History.asp>, as of December 9, 2010.

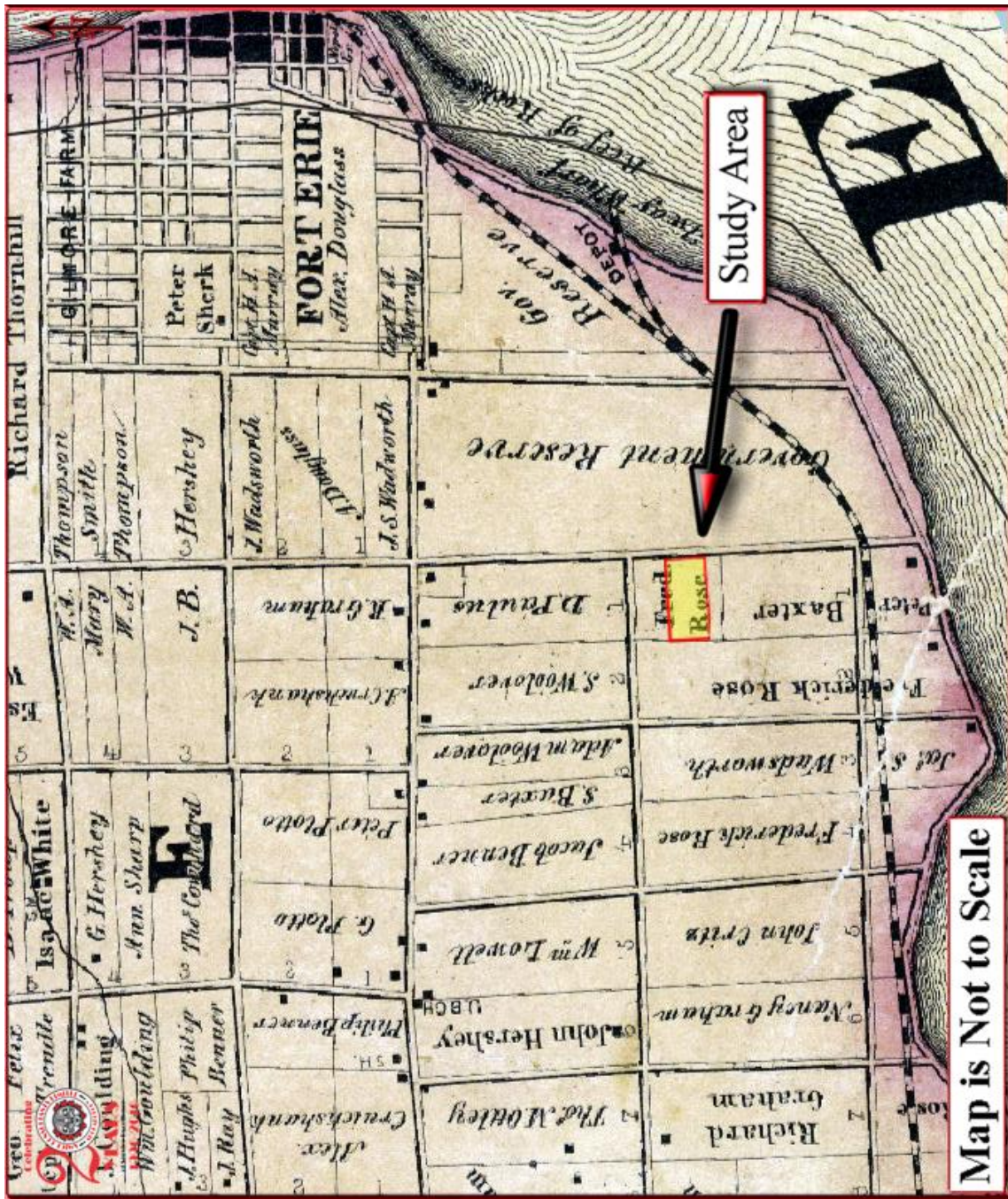
Wikipedia.org (2010). *Welland County, Ontario*. URL: http://en.wikipedia.org/wiki/Welland_County,_Ontario, as of December 10, 2010.

Wright, J.V. (1972). *Ontario Prehistory: an Eleven-thousand-year Archaeological Outline*. Archaeological Survey of Canada. National Museum of Man, Ottawa.

12.0 MAPS



MAP 1 LOCATION OF THE STUDY AREA (ESRI 2021)



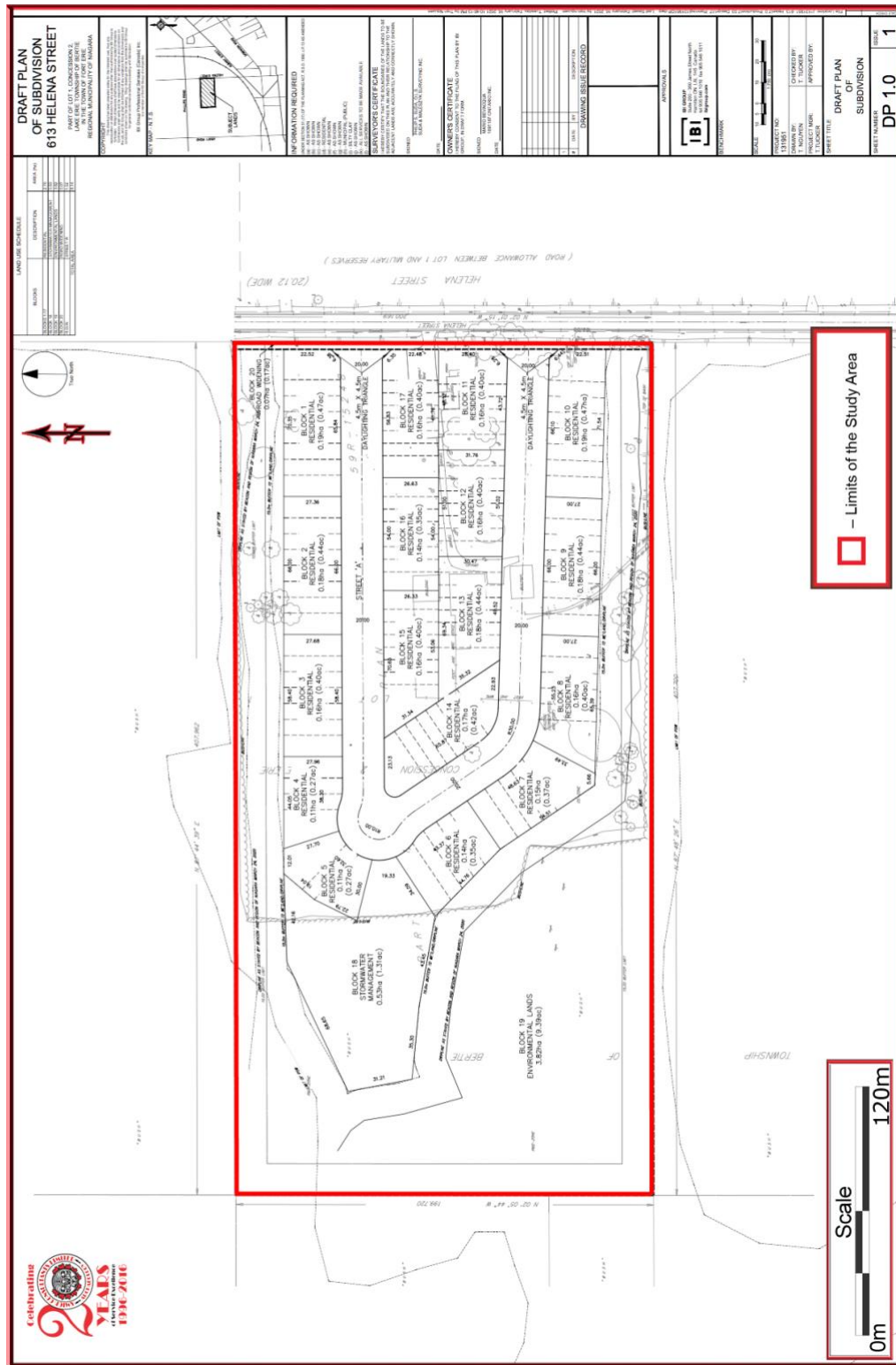
MAP 2 FACSIMILE SEGMENT OF THE HISTORICAL COUNTY MAP OF WELLAND COUNTY (TREMINE 1862)

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MAP 3 FACSIMILE SEGMENT OF THE ILLUSTRATED HISTORICAL ATLAS OF THE COUNTIES OF LINCOLN & WELLAND (H.R. PAGE 1879)

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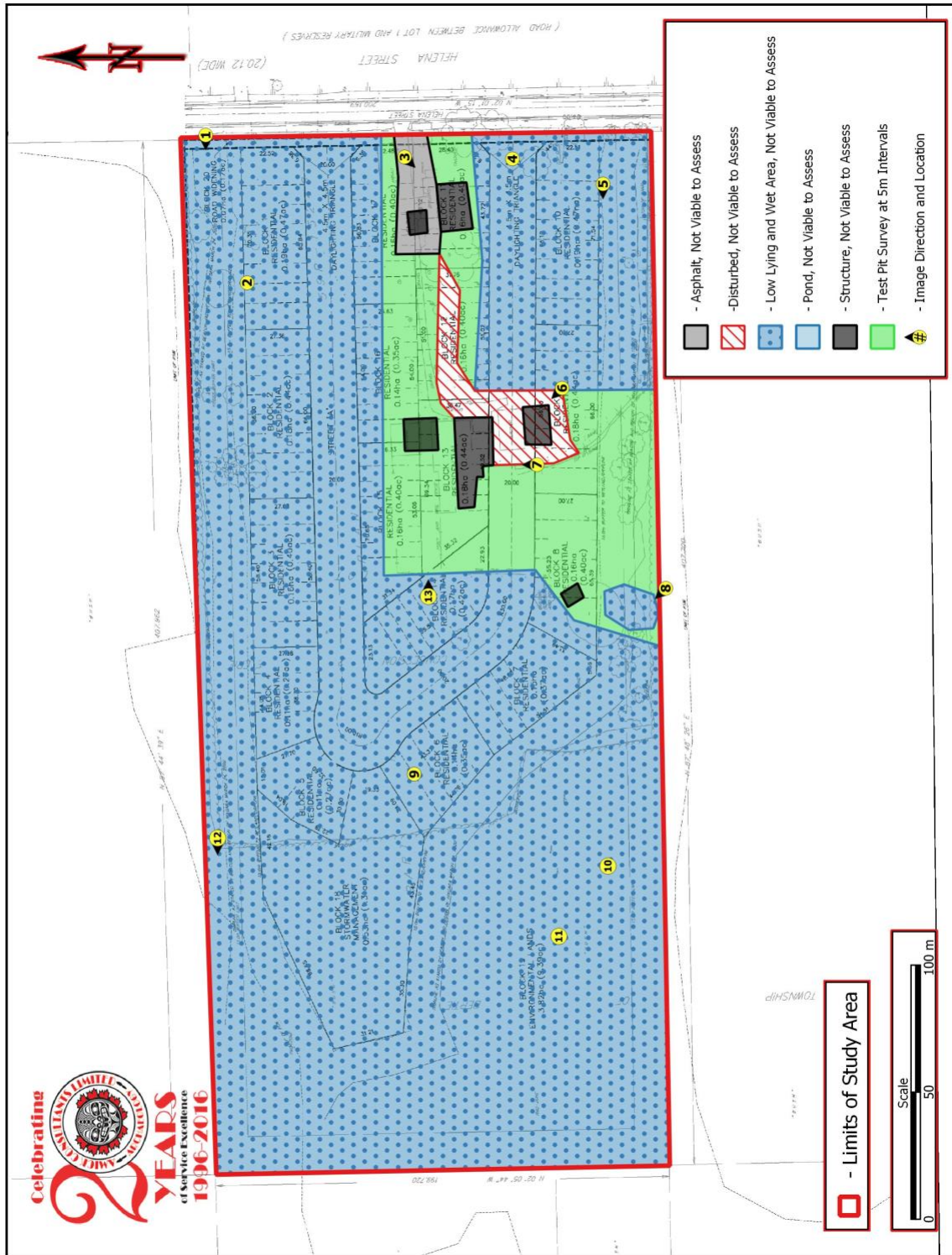
MAP 4 DRAFT PLAN OF SUBDIVISION 613 HELENA STREET (IBI GROUP 2021)

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MAP 5 AERIAL PHOTO OF THE STUDY AREA (GOOGLE EARTH 2021)

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MAP 6 DETAILED PLAN OF THE STUDY AREA

13.0 IMAGES



IMAGE 1 TP SURVEY CONDITIONS



IMAGE 2 LOW-LYING WET AREA TEST PIT IN PROGRESS



IMAGE 3 HOUSE WITHIN THE STUDY AREA



IMAGE 4 LOW-LYING WET AREA TEST PIT IN PROGRESS



IMAGE 5 LOW-LYING WET AREA IN SOUTHEASTERN PORTION OF THE STUDY AREA



IMAGE 6 SOUTHERN BARN

ORIGINAL 27 January 2022 Stage 2 Archaeological Property Assessment of 613 Helena Street, Part of Lot 1, Concession 2 on Lake Erie (Geographic Township of Bertie, County of Welland), Town of Fort Erie, Regional Municipality of Niagara (AMICK File #2020-234/MHSTCI File # P038-1033-2021)



IMAGE 7 DISTURBED AREA



IMAGE 8 POND



IMAGE 9 LOW-LYING WET AREA TEST PIT IN PROGRESS



IMAGE 10 LOW-LYING WET AREA TEST PIT IN PROGRESS



IMAGE 11 LOW-LYING WET AREA TEST PIT IN PROGRESS



IMAGE 12 LOW-LYING WET AREA STANDING WATER



IMAGE 13 LOW-LYING WET AREA AND BARN COMPLEX