

**Stage 1 & 2 Archaeological Assessment
Sunset Golf Course
1873 London Line
City of Sarnia
Part of Lot 12, Concession 6
Geographic Township of Sarnia
County of Lambton, ON**

Submitted to

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and

The Ontario Ministry of Tourism, Culture and Sport

Prepared by



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Our File: 2018-153

PIF Numbers: Stage 1: P316-0363-2018; Stage 2: P316-0366-2018

April 2019

Original report submitted to the Ministry of Tourism, Culture and Sport
30 April 2019

Executive Summary

A Stage 1 and 2 archaeological assessment was conducted for a property located at 1873 London Line in the City of Sarnia. The subject property is roughly 20 hectares (49.4 acres) in size and is located within part of Lot 12, Concession 6, in the Geographic Township of Sarnia, County of Lambton, Ontario. The subject property encompasses the existing Sunset Golf Course and associated buildings. In 2018, Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted by JR Capital Holdings Inc. to carry out the assessment as part of the due diligence process, which was conducted in accordance with the provisions of the *Planning Act* and *Provincial Policy Statement*. The purpose of the assessment was to determine whether there were archaeological resources present within the subject property.

The Stage 1 background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. According to the map-based review and background research, potential for the discovery of archaeological sites is indicated by the proximity (within 300 m) to: 1) watercourses (Perch Creek, Waddell Creek and Telfer Diversion Channel); 2) mapped 19th century thoroughfares (London Line and Blackwell Side Road); 3) a mapped 19th century structure; and 4) previously identified archaeological sites (AfHn-2 and AfHn-3).

The Stage 1 background research and property inspection determined that the subject property had potential for the discovery of archaeological resources. As such, a Stage 2 archaeological assessment was recommended and carried out, consisting of a standard test pit survey at five (47%; 8.86 hectares) and 10 metre intervals (21%; 3.88 hectares). Approximately 24% (4.52 hectares) of the subject property was disturbed; the existing buildings, parking lots, driveways, pathways and a mini-putt course were recorded as disturbed and photo-documented during the Stage 1 property inspection and the putting greens were confirmed disturbed during the Stage 2 survey. Roughly 8% (1.61 hectares) of the subject property consisted of artificial ponds and a section of Perch Creek; these were recorded as low and wet and photo-documented.

All work met provincial standards and no archaeological material was documented during the assessment. As such, the subject property should be considered free of archaeological concern and no further archaeological assessment is recommended.

Our recommendations are subject to the conditions laid out in Section 5.0 of this report and to Ministry of Tourism, Culture and Sport review and acceptance of this report into the provincial registry.



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Acknowledgements

TMHC would like to acknowledge the assistance of the following individuals:

<i>Rob Guttridge</i>	JR Capital Holdings Inc.
<i>William Fox</i>	Trent University



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1.0 PROJECT CONTEXT

1.1 Development Context

1.1.1 Introduction

A Stage 1 and 2 archaeological assessment was conducted for a property located at 1873 London Line in the City of Sarnia. The subject property is roughly 20 hectares (49.4 acres) in size and is located within part of Lot 12, Concession 6, in the Geographic Township of Sarnia, County of Lambton, Ontario. The subject property encompasses the existing Sunset Golf Course and associated buildings. In 2018, Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted by JR Capital Holdings Inc. to carry out the assessment as part of the due diligence process, which was conducted in accordance with the provisions of the *Planning Act* and *Provincial Policy Statement*. The purpose of the assessment was to determine whether there were archaeological resources present within the subject property.

All archaeological consulting activities were performed under the Professional Archaeological License of Sherri Pearce, M.A. (P316) and in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). Permission to enter the property and carry out all required archaeological activities, including collecting artifacts when found, was given by Rob Guttridge of JR Capital Holdings Inc.

1.1.2 Purpose and Legislative Context

The *Ontario Heritage Act* makes provisions for the protection and conservation of heritage resources in the Province of Ontario. Heritage concerns are recognized as a matter of provincial interest in Section 2.6.2 of the *Provincial Policy Statement* (PPS) which states:

development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved

In the PPS the term *conserved* means:

the identification, protection, management and use of *built heritage resources, cultural heritage landscapes* and *archaeological resources* in a manner that ensures their cultural heritage value or interest is retained under the *Ontario Heritage Act*. This may be achieved by the implementation of recommendations set out in a conservation plan, archaeological assessment and/or heritage impact assessment.

The purpose of a Stage 1 background study is to determine if there is potential for archaeological resources to be found on a property for which a change in land use is pending. It is used to determine the need for a Stage 2 field assessment involving the search for archaeological sites. In accordance with *Provincial Policy Statement 2.6*, if significant sites are found, a strategy (usually avoidance, preservation or excavation) must be put forth for their mitigation.

2.0 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

2.1 Research Methods and Sources

A Stage 1 overview and background study was conducted to gather information about known and potential cultural heritage resources within the subject lands. According to the Province of Ontario's 2011 *Standards and Guidelines for Consultant Archaeologists*, a Stage 1 background study must include a review of:

- an up-to-date listing of sites from the Ontario Archaeological Sites Database (OASD) of one kilometre around the property and reports of previous archaeological fieldwork within a radius of 50 metres around the property;
- topographic maps at 1:10,000 (recent and historical) or the most detailed scale available;
- historic settlement maps (e.g., historical atlas);
- archaeological management plans or other archaeological potential mapping (when available); and
- commemorative plaques or monuments on or near the property.

For this project, the following activities were carried out to satisfy or exceed the above requirements:

- a database search was completed through the Ministry of Tourism, Culture and Sport's PastPortal system that compiled a list of registered archaeological sites within one kilometre of the subject property (completed September 19, 2018);
- a review of known prior archaeological reports for the property and adjacent lands was undertaken (note: the Ministry of Tourism, Culture and Sport currently does not keep a publicly accessible record of archaeological assessments carried out in the Province of Ontario, so a complete inventory of prior assessment work nearby is not available);



- Ontario Base Mapping (1:10,000) was considered through ArcGIS and mapping layers provided by geographynetwork.ca; detailed mapping providing by the client was also examined; and
- a series of historic maps was reviewed related to pre- and post-1800 land settlement.

There are no applicable archaeological management plans for the area nor are there any commemorative plaques or monuments on or near the subject property.

Additional sources of information were also consulted, including modern aerial photographs, local history accounts, soils and physiographic data provided by the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), and both 1:50,000 (Natural Resources Canada) and finer scale topographic mapping.

When compiled, background information was used to create a summary of the characteristics of the study area, in an effort to evaluate its archaeological potential. The Province of Ontario (MTC 2011 – Section 1.3.1) has defined the criteria that identify archaeological potential as:

- previously identified archaeological sites;
- water sources;
 - primary water sources (lakes, rivers, streams, creeks);
 - secondary water courses (intermittent streams and creeks, springs, marshes, swamps);
 - features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in topography, shorelines of drained lakes or marshes, cobble beaches);
 - accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh);
- elevated topography (e.g., eskers, drumlins, large knolls, plateaux);
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground;
- distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases; there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings;
- resource areas, including:
 - food or medicinal plants (e.g., migratory routes, spawning areas, prairie);
 - scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert);
 - early Euro-Canadian industry (e.g., fur trade, logging, prospecting, mining);
- areas of early 19th-century settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries.



- There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.
- early historical transportation routes (e.g., trails, passes, roads, railways, portage routes);
 - property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial, or municipal historic landmark or site; and
 - property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

In Southern Ontario (south of the Canadian Shield), any lands within 300 metres of any of the features listed above are considered to have potential for the discovery of archaeological resources.

Typically, a Stage 1 assessment will determine potential for precontact First Peoples' and historic era sites independently. This is due to the fact that lifeways varied considerably during these eras so that criteria used to evaluate potential for each type of site also varies.

It should be noted that some factors can also negate the potential for discovery of intact archaeological deposits. Subsection 1.3.2 of the 2011 *Standards and Guidelines for Consultant Archaeologists* indicates that archaeological potential can be removed in instances where land has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. Major disturbances indicating removal of archaeological potential include, but are not limited to:

- quarrying;
- major landscaping involving grading below topsoil;
- building footprints; and
- sewage and infrastructure development.

Some activities (agricultural cultivation, surface landscaping, installation of gravel trails, etc.) may result in minor alterations to the surface topsoil but do not necessarily affect or remove archaeological potential. It is not uncommon for archaeological sites, including structural foundations, subsurface features and burials, to be found intact beneath major surface features like roadways and parking lots. Archaeological potential is, therefore, not removed in cases where there is a chance of deeply buried deposits, as in a developed or urban context or floodplain where modern features or alluvial soils can effectively cap and preserve archaeological resources.

2.2 Project Context: Archaeological Context

2.2.1 Subject Property: Overview and Physical Setting

The subject property is located at 1873 London Line in the City of Sarnia, Ontario. The property is roughly 20 hectares (49.4 acres), located within part of Lot 12, Concession



6 in the Geographic Township of Sarnia, Lambton County (Maps 1 to 3). The subject property encompasses the existing Sunset Golf Course and existing structures. The Sunset Golf Course was originally opened in 2000 and is currently still in operation. Resurrection Cemetery and Crematorium, located immediately east of the subject property, was opened in 1983. The subject property is bound to the north by London Line, to the east by a cemetery and open field, to the south by Perch Creek and Waddell Creek and to the west by Telfer Diversion Channel.

The subject property falls within the St. Clair Clay Plains physiographic region, as defined by Chapman and Putnam (1984:147-149; Map 4). The region is an extensive clay plain covering over 2,000 square miles east of the St. Clair River and south of the Lake Huron shoreline (Chapman and Putnam 1984:147). The plain shows very little notable relief yet minor elevation changes have a marked effect on soils and vegetation (Chapman and Putnam 1984:147-149). The St. Clair Clay Plain was formerly the bed of glacial lakes Whittlesey and Warren (Chapman and Putnam 1984:147) and the former shorelines of these ancient water bodies have been documented along the eastern edge of the plain, near Alvinston and Watford. The subject property is located within a bevelled till plain. The soil within the subject property is Brookston Clay, Perth Clay, and Bottom Land (Map 5). Brookston Clay is classified as dark grey gleisolic soils with poor natural drainage (Matthews et al. 1957:35). Perth Clay is classified as a grey-brown podsolic soil with imperfect drainage (Matthews et al. 1957:24).

The subject property lies within the St. Clair watershed. A branch of Perch Creek runs through the southwest corner of the subject property, Waddell Creek runs approximately 50 m south of the subject property and Telfer Diversion Channel runs adjacent to the western boundary of the subject property (Map 6). Several small artificial ponds are present within the subject property and are likely associated with the existing golf course.

2.2.2 Summary of Registered or Known Archaeological Sites

According to the Ontario Archaeological Sites Database (OASD) maintained by the Ministry of Tourism, Culture and Sport, there are four registered archaeological sites within one kilometre of the subject property (Table 1), one being within 50 metres of the subject property.

AfHn-2 and AfHn-3 were discovered in 1980 by William Fox in a general survey of the area. AfHn-2 is described as a small scatter of artifacts on a ridge. AfHn-3 was located southeast of AfHn-2 and is also described as a thin scatter of artifacts on a ridge, located on the adjacent property. The site record form and the GPS coordinates for the site were obtained; however, they indicate vastly different coordinates that place the site from somewhere between a property to the east of the current subject property and Blackwell Sideroad. Based on the available information from the site record form and additional information provided by Mr. Fox, AfHn-3 was located within the subdivision on the property to the west and was likely destroyed by construction activities.



AfHn-18 is a findspot of two pieces of chipping detritus found during an assessment for a subdivision west of Blackwell Side Road south of London Line. No further work was recommended for the site.

AfHn-19 is a large scatter of 106 artifacts located on a sandy knoll found during an assessment for a subdivision. The artifacts included three projectile points, a biface, drill, scrapers, cores, hammerstones and chipping detritus. The site dates from the Late Archaic to Middle Woodland periods. The site was recommended for Stage 3 assessment. The Stage 3 assessment was undertaken in 1999 and resulted in the collection of an additional 547 artifacts from 30 units. The artifact assemblage included projectile points, scrapers, bifaces, drills, wedges, cores, chipping detritus, ground stone tools and shell fragments. Stage 4 assessment was recommended for the site; however, no record of the Stage 4 could be found in PastPortal.

Table 1: Archaeological Sites Registered within 1 km of the Subject Property

Borden Number	Site Name	Time Period	Affinity	Site Type	Current Development Review Status
AfHn-2	Perch 1				
AfHn-3	Perch 2			campsite	
AfHn-18	Blackwell Sideroad	Pre-Contact	Aboriginal	findspot	No further CHVI
AfHn-19	Spoon	Archaic, Late, Woodland, Early, Woodland, Middle	Aboriginal	Other camp/campsite, scatter	Further CHVI

2.2.3 Summary of Past Archaeological Investigations Within 50 Metres

During the course of this study, only one record was found for an archaeological investigation within 50 metres of the subject property. That study pertains to the 1980 general survey of the area by William Fox. No report is associated with Fox's work in the PastPortal; there is only the site record. No other records were found of any archaeological investigations within 50 metres of the subject property. However, it should be noted that the Ministry of Tourism, Culture and Sport currently does not provide an inventory of archaeological assessments to assist in this determination.

2.2.4 Dates of Archaeological Fieldwork

The Stage 1 site inspection was conducted on September 20, 2018 in overcast and cool weather conditions. The Stage 2 fieldwork was conducted over a period of eight days from November 5, 2018 through April 22, 2019 (Table 2). The field director for the field work was Ramsay Macfie, B.A. (R1022).



Table 2: Weather Conditions and Licensees During Fieldwork

Date	Weather	Date	Weather
September 20, 2018	Overcast and cool	April 10, 2019	Mix of sun and clouds
November 5, 2018	Overcast and cool	April 11, 2019	Overcast and cool
November 6, 2018	Overcast and sporadic rain	April 16, 2019	Overcast, light rain
April 8, 2019	Partly cloudy and seasonal	April 22, 2019	Sunny and warm
April 9, 2019	Overcast and cool		

2.3 Project Context: Historical Context

2.3.1 First Peoples Settlement in Lambton Ontario

Our knowledge of the First Peoples occupation of the Lambton County area is incomplete. Nevertheless, based on our knowledge of existing sites and using models generated from Province-wide and region-specific archaeological data, it is possible to provide a basic summary of First Peoples settlement in Lambton County. The following paragraphs provide a basic textual summary of the known general cultural trends and a tabular summary appears in Table 3.

Table 3: Cultural Chronology for First Peoples Settlement in Lambton County

Period			Time Range (circa)	Diagnostic Features	Complexes
Paleoindian	Early		9000 - 8400 B.C.	fluted projectile points	Gainey, Barnes, Crowfield
	Late		8400 - 8000 B.C.	non-fluted and lanceolate points	Holcombe, Hi-Lo, Lanceolate
Archaic	Early		8000 - 6000 B.C.	serrated, notched, bifurcate base points	Nettling, Bifurcate Base Horizon
	Middle		6000 - 2500 B.C.	stemmed, side & corner notched points	Brewerton, Otter Creek, Stanly/Neville
	Late		2000 - 1800 B.C.	narrow points	Lamoka
			1800 - 1500 B.C.	broad points	Genesee, Adder Orchard, Perkiomen
			1500 - 1100 B.C.	small points	Crawford Knoll
	Terminal		1100 - 950 B.C.	first true cemeteries	Hind
Woodland	Early		950 - 400 B.C.	expanding stemmed points, Vinette pottery	Meadowood
	Middle		400 B.C. - A.D. 500	dentate, pseudo-scallop pottery	Saugen/Couture
	Transitional		A.D. 500 - 900	first corn, cord-wrapped stick pottery	Princess Point/Riviere au Vase
	Late	Early Iroquoian	A.D. 900 - 1300	first villages, corn horticulture, longhouses	Glen Meyer/Young
		Middle Iroquoian	A.D. 1300 - 1400	large villages and houses	Uren, Middleport/Springwells
		Late Iroquoian	A.D. 1400 - 1650	tribal emergence, territoriality	Neutral Iroquois/Wolf
Contact		Aboriginal	A.D. 1700 - 1875	treaties, mixture of Native & European items	Ojibwa
		Euro-Canadian	A.D. 1796 - present	English goods, homesteads	European settlement, pioneer life

Paleoindian Period

The first human populations to inhabit the Lambton County region arrived between 12,000 and 10,000 years ago, coincident with the end of the last period of glaciation. Climate and environmental conditions were significantly different then they are today; local environs would not have been welcoming to anything but short-term settlement. Termed Paleoindians by archaeologists, Ontario's first peoples would have crossed the landscape in small groups (i.e., bands or family units) searching for food, particularly migratory game species. In this area, caribou may have provided the staple of Paleoindian diet, supplemented by wild plants, small game, birds and fish.



Given the low density of populations on the landscape at this time and their mobile nature, Paleoindian sites are small and ephemeral. They are sometimes identified by the presence of fluted projectile points manufactured on a highly distinctive whitish-grey chert named "Fossil Hill" (after the formation) or "Collingwood". This material was acquired from sources near the edge of the Niagara escarpment near Collingwood. It was exploited by populations from as far south as the London area, who probably traveled to the source as part of their seasonal round.

Archaic Period

Settlement and subsistence patterns changed significantly during the Archaic period as both the landscape and ecosystem adjusted to the retreat of the glaciers. Building on earlier patterns, early Archaic populations continued the mobile lifestyle of their predecessors. Through time and with the development of more resource rich local environments, these groups gradually reduced the size of the territories they exploited on a regular basis. A seasonal pattern of warm season riverine or lakeshore settlements and interior cold weather occupations has been documented in the archaeological record.

Since the large cold weather mammal species that formed the basis of the Paleoindian subsistence pattern became extinct or moved northward with the onset of warmer climate conditions, Archaic populations had a more varied diet, exploiting a range of plant, bird, mammal and fish species. Reliance on specific food resources like fish, deer and nuts becomes more pronounced through time and the presence of more hospitable environments and resource abundance led to the expansion of band and family sizes. In the archaeological record, this is evident in the presence of larger sites and aggregation camps, where several families or bands would come together in times of plenty. The change to more preferable environmental circumstances led to a rise in population density. As a result, Archaic sites are more plentiful than those from the earlier period. Artifacts typical of these occupations include a variety of stemmed and notched projectile points, chipped stone scrapers, ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets), bifaces or tool blanks, animal bone (where and when preserved) and waste flakes, a by-product of the tool making process.

Early, Middle and Transitional Woodland Periods

Significant changes in cultural and environmental patterns are witnessed in the Woodland Period (circa 3,000 to historic times). By this time, the coniferous forests of earlier times were replaced by stands of mixed and deciduous species. Occupations became increasingly more substantial in this period, culminating in major semi-permanent villages by 1,000 years ago. Archaeologically, the most significant changes by Woodland times are the appearance of artifacts manufactured from modeled clay and the construction of house structures. The Woodland Period is often defined by the occurrence of pottery, storage facilities and residential areas similar to those that define the incipient agricultural or Neolithic period in Europe.



Early and Middle Woodland peoples are also known for a well-developed burial complex and ground stone tool industry. Unique Early Woodland ground stone items include pop-eyed birdstones and gorgets. In addition, there is evidence of the development of widespread trading with groups throughout the northeast. The recovery of marine shells from the Gulf of Mexico and silver from northern Ontario indicates that exchanges of exotic materials and finished items from distant places were commonplace.

Late Woodland Period

During the Late Woodland Period, much of Southwestern Ontario was occupied by two groups: Iroquoians and what are thought by archaeologists to be Algonquin speaking populations (the term “Western Basin Tradition” has been used to describe this cultural complex). From the west end of Lake Ontario extending west to the Chatham area, the Iroquoian occupants were the Attawandaron or Neutral Nation, a group described by European missionaries. Like other known Ontario Iroquoian groups including the Huron (Wendat) and Petun (Tionontati), the Neutral (Attawandaron) practiced a system of intensive horticulture based on three primary subsistence crops (corn, beans and squash). Their villages incorporated a number of longhouses, multi-family dwellings that contained several families related through the female line. *The Jesuit Relations* describe several Neutral centres in existence in the 17th century, including a number of sites where missions were later established. While pre-contact Attawandaron sites may be identified by a predominance of well-made pottery decorated with various simple and geometric motifs, triangular stone projectile points, clay pipes and ground stone implements, sites post-dating European contact are recognized through the appearance of various items of European manufacture. The latter include materials acquired by trade (e.g., glass beads, copper/brass kettles, iron axes, knives and other metal implements) in addition to the personal items of European visitors and Jesuit priests (e.g., finger rings, stoneware, rosaries, glassware). The Attawandaron were dispersed and their population decimated by the arrival of epidemic European diseases and inter-tribal warfare in the mid-17th century. Many were adopted into other Iroquoian communities.

In southwestern Ontario west of the London area, archaeologists have also documented the *in situ* development of a Late Woodland archaeological tradition from a Middle Woodland precedent that is believed to have an Algonquin cultural origin, quite distinct from Iroquoian populations who lived to the east. The archaeological record of these groups has been labeled the “Western Basin Tradition” (WBT). During the Late Woodland period, complex settlements are characteristic of these people including fortified villages containing large, likely extended family, structures. Some of the villages are surrounded by earthworks. There is evidence for the cultivation of corn and beans by roughly A.D. 900. The pottery traditions of these people varied significantly from those of their Iroquoian neighbors. Early vessels, called Wayne ware, are small, thin walled pots covered with vertical cord marking and tool impressions. Vessels become more elaborate through time, incorporating multiple bands of tool impressions, castellated rims and incised decoration. Late pottery is characteristically bag-shaped and often incorporates dentate stamping as well as appliqué strips and strap handles, similar to some Mississippian



tradition pottery. Distinct from most Iroquoian pottery, WBT clay fabrics were sometimes mixed with shell temper.

2.3.2 19th Century and Municipal Settlement

The subject property falls within part of Lot 12, Concession 6, in the Geographic Township of Sarnia, Lambton County, Ontario. A brief discussion of early 19th century and municipal settlement in the Township is provided below, as a means of providing general context for understanding former land use.

Prior to the 1830s Lambton County was sparsely occupied by people of European descent. One of the reasons for this was that historical Lambton County was composed of mainly forested and swampy areas that made settling and traveling to the County difficult. A few French settlers were living along the banks of the St. Clair River. An unfortified British military reserve was set up in the along the eastern bank of the St. Clair River at the entrance to Lake Huron, in the location of what was to eventually become the Village of Point Edward around 1800. This military reserve was established to protect the entrance of Lake Huron from possible American invaders (Elford 1982:114). No sizable European populations arrived to the County until the early 1830s when an influx of British settlers occurred. By 1834, there were 1,728 settlers in the county and by 1891 the population had increased to 58,810 people (Elford 1982:3-5).

The Township of Sarnia was surveyed in 1829 (Johnston 1925:46). Many of the initial land grants were awarded to land speculators and United Empire Loyalists in reward for their loyalty to the British Crown during the War of 1812. Initially much of the township was set aside for a reservation and some 10,000 acres given to Henry Jones who established a commune of Scottish settlers (Elford 1967:91). Jones received his land from Sir John Colborne, his brother's father-in-law. Jones' dreams were shattered when most of the settlers abandoned the colony two years later. His lakeshore acreage was purchased by Samuel Street in 1830 but deeds were not issued until 1841 (Elford 1967:93; Elford 1982:81). A United Empire Loyalist by the name of John Porter visited the area around 1824 and later established a home along the fourth concession line near Perch Creek (Elford 1967:36). In 1837, only 42 taxpayers were recorded for the township (Elford 1982:81) but settlement continued alongside the growth of industry. The population of the township was greatly enhanced between 1841 and 1846 following the construction of the London Road (Hwy. 22) which facilitated a major movement of people into the township (Elford 1967:96), including the arrival of a large group of families from Lanark County. In 1859, a decision was made to drain Lake Wawanosh, along Perch Creek (earlier called Wawanosh Creek), in order to free up further land for settlement (Elford 1967:93).

European settlement in the City of Sarnia began in earnest in the 1830s; although, there is reputed to have been a French settlement in the area a century and a half earlier (Johnston 1925:47). In 1826, Mahlon Burwell, Deputy Provincial Surveyor, recorded the names of several French pioneers who had settled along the St. Clair River (Elford 1967:35). Ignace Cazelet, Jean Baptist Pare, and Joseph LaForge are credited with being



the first permanent French settlers in Sarnia, the first arriving as early as 1807 (Elford 1967:35). These entrepreneurial individuals acted as middlemen in the fur trade and temporarily abandoned Sarnia for the American colonies during the War of 1812 (Elford 1967:35). Many of the first English folk (an Indian agent and missionary) to arrive in Sarnia came in 1831 to offer services to the local native community. In 1832, former Royal Navy Lieutenant Vidal arrived in Sarnia and built a log house on the east side of the existing river trail that would become Front Street (Lauriston 1949:91). He was one of several ex-military men who were attracted to the port town. In the same year, Henry Jones built two wharves, a store and storehouse on the riverfront (Elford 1982:142). Industrial and residential areas soon developed along the river's edge. Sarnia's first steam grist mill was built by James Flintoft in 1845 (Elford 1967:94). By 1857, the population of Sarnia numbered over 2,000 (Elford 1967:96). Sarnia grew as a shipping port and lumbering centre. By 1871, the community had a population of 2,929 people (Elford 1967:42).

The Grand Trunk Railway first opened in 1859 and helped increase the community's shipping profile and provided passage to new immigrants. Transportation to the centre and through the township was considerably hindered by the lack of good thoroughfares. Given that the Sarnia vicinity was essentially a vast level clay plain with few streams and rivers, it was poorly drained and good, dry roads were hard to come by. Swamplands often prohibited the establishment of early through roads. Nonetheless, a few early major transportation routes offered some solace to travelers. These included the Egremont/London Road (now Highway 22), the Plank Road (connecting Sarnia to Petrolia) and the Fourth Line (Confederation Line). The Plank Road was "planked" between 1862 and 1865 following the discovery of oil in Enniskillen Township (Elford 1967:41-42).

The subject property falls within Lot 12, Concession 6, in the Geographic Township of Sarnia, Lambton County, Ontario. William Menzies is listed on the 1880 map of Lambton County and a structure is depicted in the northeast corner of the subject property (Map 7). London Line and Blackwell Side Road are depicted as open during this time. Perch Creek is depicted crossing the southwestern corner of the subject property on this map. This suggests that despite currently being channelized, Perch Creek is still relatively in the same place.

A 1954 aerial photograph illustrates that the majority of the subject property was an open agricultural field at this time with a structure in the northeast portion of the subject property (Map 8). The immediate area is also open agricultural fields at this time.

The Resurrection Cemetery and Crematorium, which is located adjacent to the northeastern portion of the subject property, has been operating since 1983 and has been operating as a non-profit cemetery since 1992. The available mapping for the cemetery depicts a clear boundary that has not changed. Since this is a recent cemetery with well defined boundaries that has a physical barrier (berm) with the current subject property, there is no chance for there to be burials within the current subject property and a cemetery boundary investigation is not required.



2.4 Stage 1 Property Inspection

As the subject property contained several features signaling archaeological potential, as well as several features of extensive disturbance, a Stage 1 property inspection was conducted to evaluate the current conditions of the subject property and determine if any areas of archaeological potential remained intact within the subject property.

The property inspection was conducted on September 20, 2018 in overcast and cool weather conditions. The weather conditions allowed for good visibility for the inspection of surface features. It involved the recording and photo-documentation of the field conditions.

The property at 1873 London Line is a relatively flat to slightly rolling golf course that consists of large expanses of manicured lawn, paved or gravel driveways, paths and parking lots, three structures and a mini-putt course. In discussion with the land owner, aside from some berms and artificial ponds, no extensive landscaping was done to the property as the golf course was being built.

The subject property can be divided into two separate areas defined by the nature of the property development or landscaping present. The northern portion of the subject property contains the built structures as well as the paved or graveled driveways and parking lots. The southern portion of the subject property is composed of typical golf course features including greens, fairways, artificial ponds, knolls, and large berms.

Northern Portion of Subject Property (Maps 9 and 10; Images 1-6, 15)

The northern portion of the subject property is the most intensively developed area and contains the majority of the built structures, paved or gravelled driveways and parking lots found on the property. London Line runs east-west along the northern edge of the subject property and the property is accessed through a paved driveway (Image 1).

Three existing buildings, gravel and paved driveways and laneways are present within the northern portion of the subject property (Image 2 and 3). An area of manicured lawn with a small pond is present between paved laneways south of London Line (Image 1 and 4). A mini-putt course is located southwest of two existing structures along the eastern boundary of the subject property (Image 5). South of the mini-putt course, a large berm is present along the boundary of the subject property (Image 6).

Resurrection Cemetery and Crematorium is located immediately east of the subject property. The golf course and cemetery lands are separated by a berm and ditch (Image 15).

Southern Portion of Subject Property (Maps 9 and 10; Images 7-14)

The southern portion of the subject property consists primarily of fairways and greens of the golf course. The golf course is relatively flat to slightly rolling topography



(Image 7, 8 and 9). Several small graveled paths run east-west across the subject property (Images 10 and 12). Three large artificial ponds are present within the golf course (Images 11 and 12). The extreme southwest corner of the subject property consists of a portion of Perch Creek and associated marsh vegetation (Image 13). The western portion of the subject property is bound by a gravel golf course path and the Telfer Diversion channel, a steeply sloped artificial drain (Image 14).

As a Stage 2 survey was conducted, separate mapping detailing zones of archaeological potential is not provided herein (as per Section 7.7.4 Standard 1 and Section 7.7.6 Standards 1 and 2 of the 2011 *Standards and Guidelines for Consultant Archaeologists*). Maps 9 and 10 present the Stage 1 and 2 results for the subject property. Map 3 presents unaltered proponent mapping.

2.5 Analysis and Conclusions

As noted in Section 2.1, the Province of Ontario has identified numerous factors that signal the potential of a property to contain archaeological resources. Based on the archaeological and historical context reviewed above, the subject property is in proximity (i.e., within 300 metres) to several features that signal archaeological potential, namely: 1) watercourses (Perch Creek, Waddell Creek and Telfer Diversion Channel); 2) mapped 19th century thoroughfares (London Line and Blackwell Side Road); 3) a mapped 19th century structure; and 4) previously identified archaeological sites (AfHn-2 and AfHn-3).

As the subject property contained several features signaling archaeological potential, a Stage 1 property inspection was conducted to evaluate the current conditions of the subject property and determine if any areas of archaeological potential remained intact within the subject property. The Stage 1 property inspection has visually confirmed that the majority of the subject property consists of manicured lawn, existing structures, paved and graveled driveway, pathways and parking lots, artificial ponds, berms, a mini-putt course and a section of Perch Creek. The archaeological potential of the manicured lawn and grassed areas is retained and these areas are recommended for a Stage 2 archaeological assessment. The existing structures, parking lots, driveways, pathways, and mini-putt course are considered to be extensively disturbed and are of low archaeological potential. The artificial ponds and the section of Perch Creek contained within the subject property are considered to be of low archaeological potential. All areas of low archaeological potential were photo-documented and are not recommended for any additional archaeological work.

2.6 Recommendations

Given that the subject property demonstrated potential for the discovery of archaeological resources, a Stage 2 archaeological assessment was recommended. In keeping with provincial standards, the areas within the subject property that consist of grassed or treed areas are recommended for assessment by a standard test pit survey at a five metre transect interval to achieve the provincial standard. The existing structures, driveways, pathways, parking lots, artificial berms, and mini-putt course are considered to



be extensively disturbed and are of low archaeological potential. These areas have been photo-documented and no further work is recommended. Low and wet areas that are considered to be of low archaeological potential include Perch Creek and the three artificial ponds. These areas have been photo-documented and no further work is recommended.

3.0 STAGE 2 ARCHAEOLOGICAL ASSESSMENT

3.1 Field Methods

All fieldwork was undertaken in good weather and lighting conditions. No conditions were encountered that would hinder the identification or recovery of artifacts. The property boundaries were determined in the field based on proponent mapping, landscape features and GPS co-ordinates.

The subject property is comprised of non-ploughable lands (manicured lawn). As such, the subject property was subject to a standard test pit assessment, employing both a five metre and 10 metre transect interval (Images 16–21). Test pits measuring approximately 30 cm (shovel-width) were excavated through the first 5 cm of subsoil with all fill screened through 6 mm hardware cloth. Once screening was finished, the stratigraphy in the test pits was examined and then the pits were backfilled as best as possible, tamped down by foot and shovel and re-capped with sod. Test pitting extended up to 1 m from all standing features, including buildings, paved areas and artificial ponds when present (Image 19). It was anticipated that when cultural material was found, the test pit survey was intensified (reduced to 2.5 m) to determine the size of the site. If not enough archaeological materials were recovered from the intensification test pits, a 1 m² test unit was excavated atop of one of the positive test pits to gather additional information.

The majority of the subject property was subject to test pit survey at a five metre transect interval (47%; 8.86 hectares). Deeper test pits had a lens of roughly 30 cm of grey and tan mottled clay loam over 30 to 50 cm of grey brown clay loam over light grey to tan clay subsoil (Image 22); the upper mottled soil lens is interpreted as incipient disturbance due to the landscaped berms adjacent the deep test pits. The remainder of the typical undisturbed test pits contained roughly 15 to 35 cm of grey brown clay loam topsoil over a light grey to tan clay subsoil with orange clay mottling (Image 23).

Portions of the subject property were determined to be disturbed and were subject to test pit survey at a 10 metre transect interval (21%; 3.88 hectares) (Images 19–21). The majority of the soils in the disturbed test pits contained roughly 15 to 25 cm of mottled dark grey clay loam over 25 to 55 cm of mottled clay fill, some with wood, concrete, gravel and garbage inclusions, over roughly 55 to 100 cm of dark and light grey mottled clay (Images 24–26).

As per Section 2.1, Standard 2 of the *Standards and Guidelines* (MTC 2011:28-29), certain physical features and deep land alterations are considered as having low archaeological potential and are thus exempt from the standard test pit survey.



Approximately 24% (4.52 hectares) of the subject property consisted of the existing buildings, parking lots, driveways, pathways and a mini-putt course; these were recorded as disturbed and photo-documented during the Stage 1 property inspection (Images 1-10, 14-15); the putting greens were confirmed as disturbed during the Stage 2 survey (Images 22 and 27). Roughly 8% (1.61 hectares) of the subject property consisted of artificial ponds and a section of Perch Creek; these were recorded as low and wet and photo-documented (Images 4, 11, 12 and 13).

Map 9 illustrates the Stage 2 field conditions and assessment methods; the location and orientation of all photographs appearing in this report are also shown on this map. Map 10 presents the Stage 2 results on the proponent mapping.

3.2 Record of Finds

No archaeological materials or sites were identified during the Stage 2 archaeological assessment of the subject property. Table 4 provides an inventory of the documentary records generated during this project.

Table 4: Documentary Records

Field Notes And Field Maps	Dated September 20, 2018; November 5, 2018; November 6, 2018; April 8, 2019; April 9, 2019; April 10, 2019; April 11, 2019; April 16, 2019; and April 22, 2019.
Photo Catalogue	Dated September 20, 2018 (50 digital photos); November 5, 2018 (10 digital photos); April 8, 2019 (11 digital photos); April 9, 2019 (16 digital photos); April 10, 2019 (9 digital photos); April 11, 2019 (13 digital photos); April 16, 2019 (15 digital photos); and April 22, 2019 (8 digital photos).
Location of Records	Timmins Martelle Heritage Consultants Inc., @ the Museum of Ontario Archaeology, 1600 Attawandaron Road, London, Ontario N6G 3M6

3.3 Analysis and Conclusions

A Stage 2 field assessment was carried out in keeping with the Province of Ontario's *Standards and Guidelines for Consultant Archaeologists*. The test pit survey did not result in the documentation of archaeological resources. Given that the exact location of AfHn-3 is unknown and likely within the subject property to the west, and no archaeological materials were identified during our test pit survey, this site is not a concern for the current subject property. In addition, as the available mapping for the Resurrection Cemetery and Crematorium depicts a clear boundary that has not changed and since this a recent cemetery with well defined boundaries that has a physical barrier (berm) with the current subject property, there is no chance for there to be burials within the current subject property and a cemetery boundary investigation is not required. In sum, the subject property should be considered free of archaeological concern.



3.4 Recommendations

All work met provincial standards and no archaeological material was documented during the assessment. As such, the subject property should be considered free of archaeological concern and no further archaeological assessment is recommended.

Our recommendations are subject to the conditions laid out in Section 5.0 of this report and to Ministry of Tourism, Culture and Sport review and acceptance of this report into the provincial registry.

4.0 SUMMARY

A Stage 1 and 2 archaeological assessment was conducted for a property located at 1873 London Line in the City of Sarnia. The subject property is roughly 20 hectares (49.4 acres) in size and is located within part of Lot 12, Concession 6, in the Geographic Township of Sarnia, now the City of Sarnia, Lambton County, Ontario. The subject property encompasses the existing Sunset Golf course and associated buildings. The Stage 1 background research and property inspection determined that the subject property had potential for the discovery of archaeological resources. As such, a Stage 2 archaeological assessment was recommended and carried out, consisting of a standard test pit survey at five and 10 metre intervals. The Stage 2 assessment did not result in the documentation of archaeological resources. As such, the subject property should be considered free of archaeological concern and no further assessment work is recommended.

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ministry of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O 1990, c 0.18. 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 subject property of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed 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 Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented (i.e., unknown or deeply buried) 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*. Further, archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

The *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 Burial Sites, War Graves, Abandoned Cemeteries and Cemetery Closures, Ontario Ministry of Government and Consumer Services. Effective as of January 16, 2016, Nancy Watkins, Senior Policy Analyst, is the new Registrar. Her telephone number is 416-212-7499 and her e-mail address is Nancy.Watkins@ontario.ca.

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7.0 IMAGES



Image 1: Paved Driveway in Northern Portion of Subject Property (looking south)



Image 2: Paved and Gravel Area and Existing Structures in Northern Portion of Subject Property (looking east)



Image 3: Gravel Area and Existing Structures in Northern Portion of Subject Property (looking southwest)



Image 4: Manicured Lawn and Pond in Northern Portion of Subject Property (looking northwest)



Image 5: Mini-Putt Course in Northern Portion of Subject Property (looking southeast)



Image 6: Berm along Eastern Boundary (looking north)



Image 7: Typical Manicured Lawn (Fairway) in Southern Portion of Subject Property (looking southwest)



Image 8: Typical Manicured Lawn (Fairway) in Southern Portion of Subject Property (looking south)



Image 9: Typical Manicured Lawn (Fairway) in Southern Portion of Subject Property (looking north)



Image 10: Typical Gravelled Golf Course Pathway (looking west)



Image 11: Artificial Pond in Southern Portion of Subject Property (looking north)



Image 12: Artificial Ponds in Central Portion of Subject Property (looking northwest)



Image 13: Perch Creek in Southern End of Subject Property (looking south)



Image 14: Artificial Cut Drainage Channel (looking north)



Image 15: Resurrection Cemetery and Cremetorium Boundary (looking southeast)



Image 16: Test Pit Survey in Progress at 5 m Interval (looking west)



Image 17: Test Pit Survey in Progress at 5 m Interval (looking south)



Image 18: Test Pit Survey in Progress at 5 m Interval (looking south)



Image 19: Test Pit Survey in Progress at 10 m Interval (looking southwest)



Image 20: Test Pit Survey in Progress at 10 m Interval (looking east)



Image 21: Test Pit Survey in Progress at 10 m Interval (looking north)



Image 22: Typical Test Pit (looking down)



Image 23: Typical Test Pit (looking down)



Image 24: Typical Disturbed Deep Test Pit (looking down)



Image 25: Typical Disturbed Test Pit (looking down)

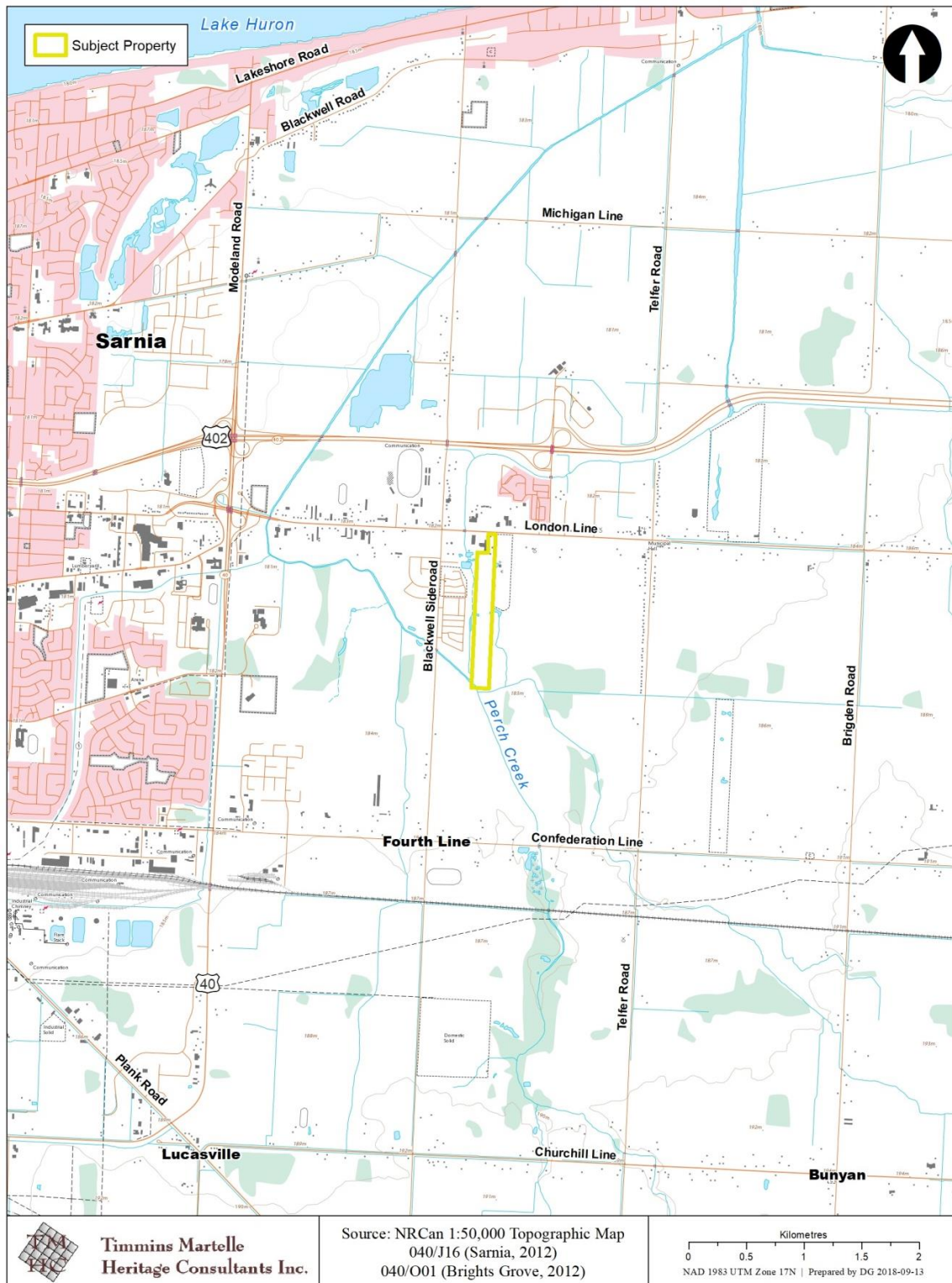


Image 26: Typical Disturbed Test Pit (looking down)



8.0 MAPS



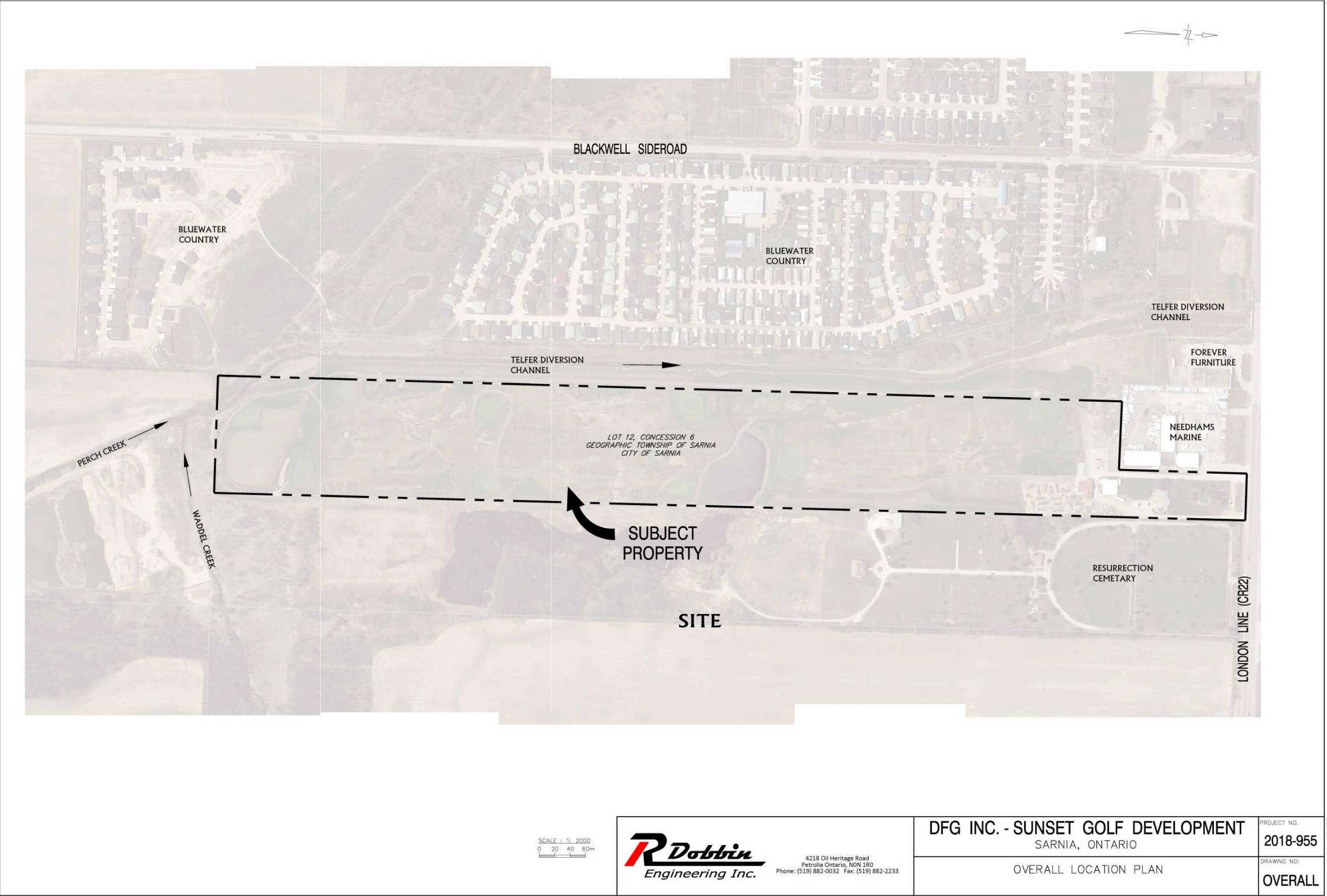


Map 1: Location of the Subject Property in the City of Sarnia, ON



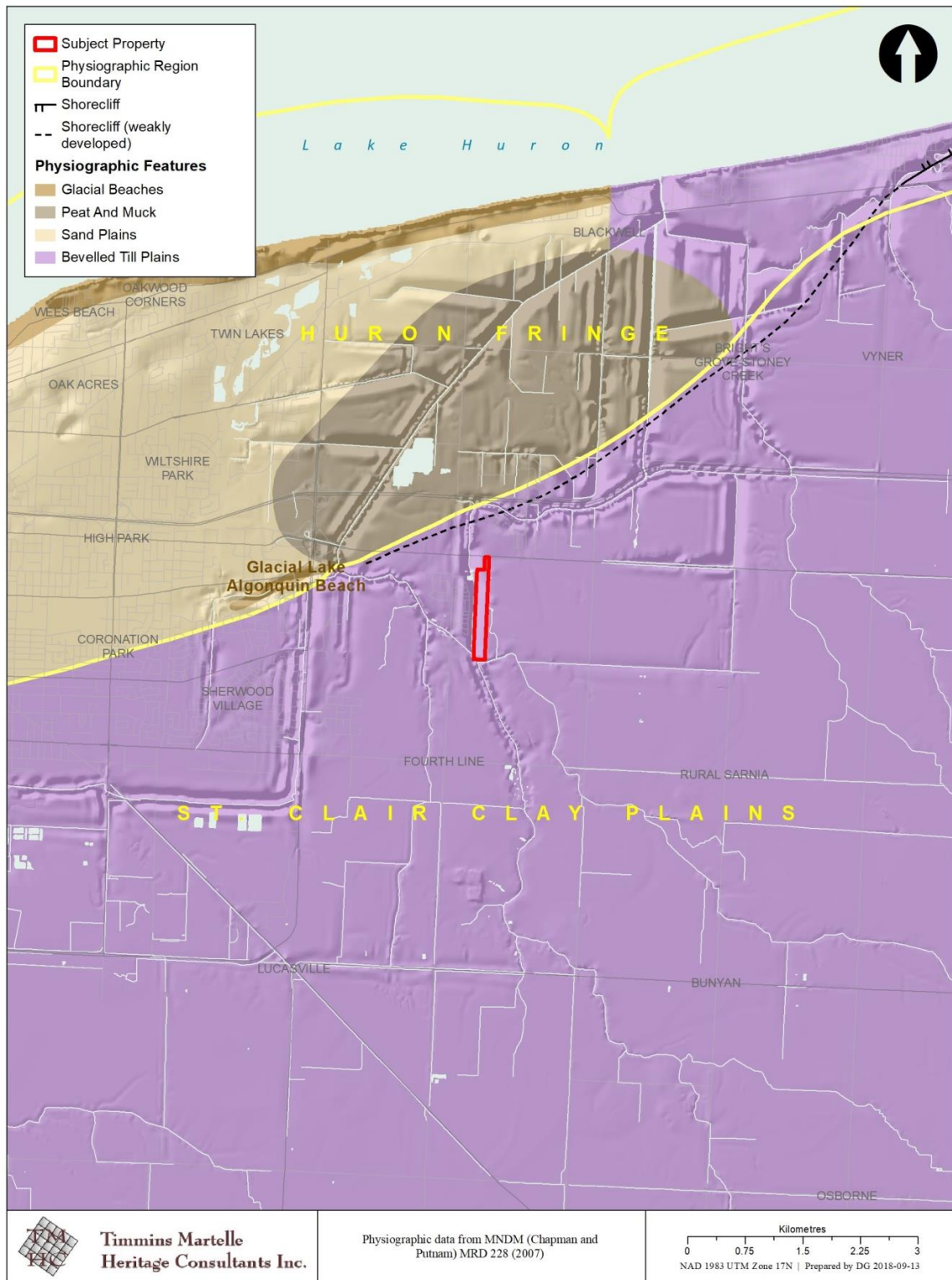
**Map 2: Aerial Photograph Showing the Location of the Subject Property in the
City of Sarnia, ON**



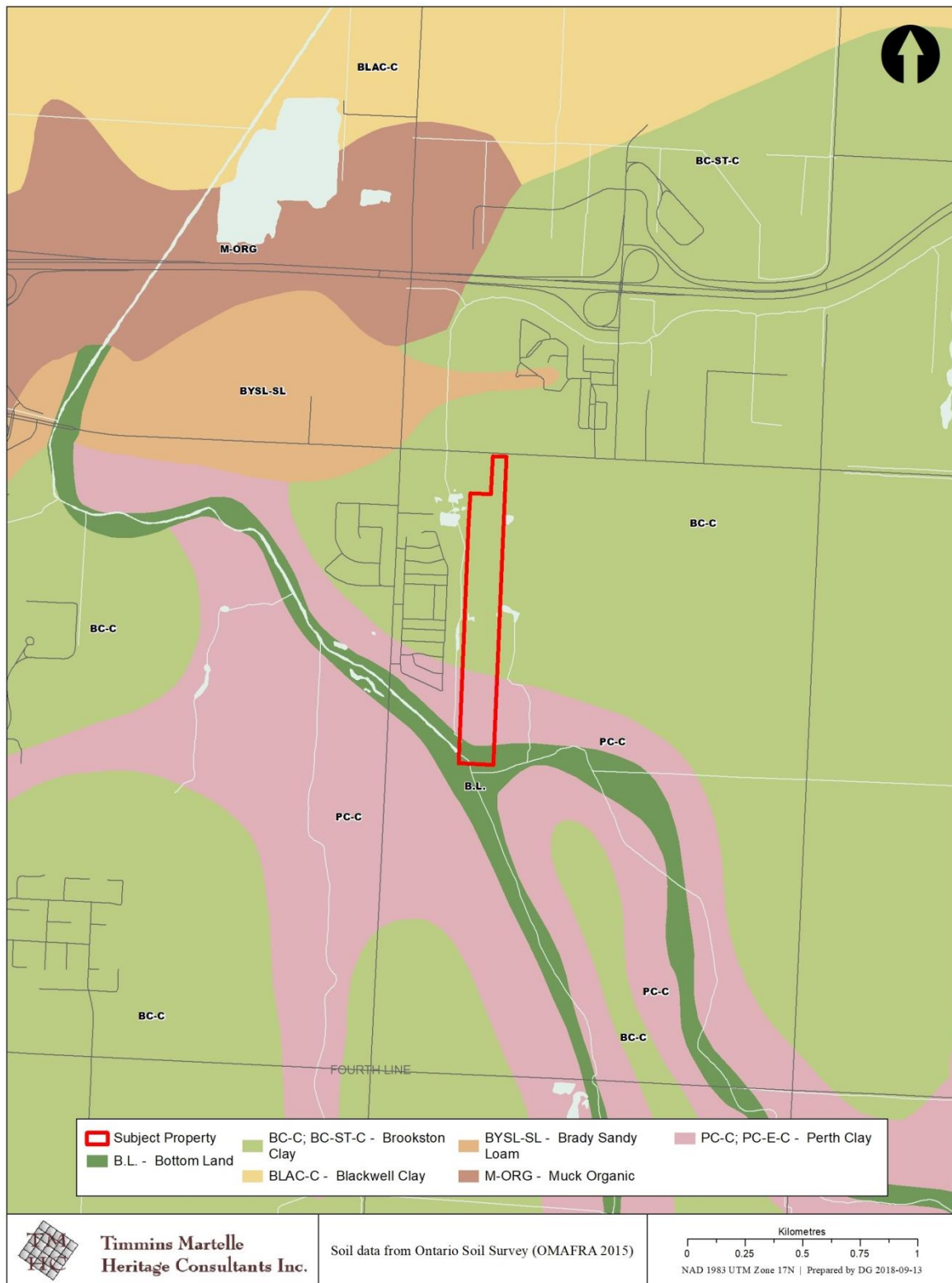


Map 3: Proponent Mapping

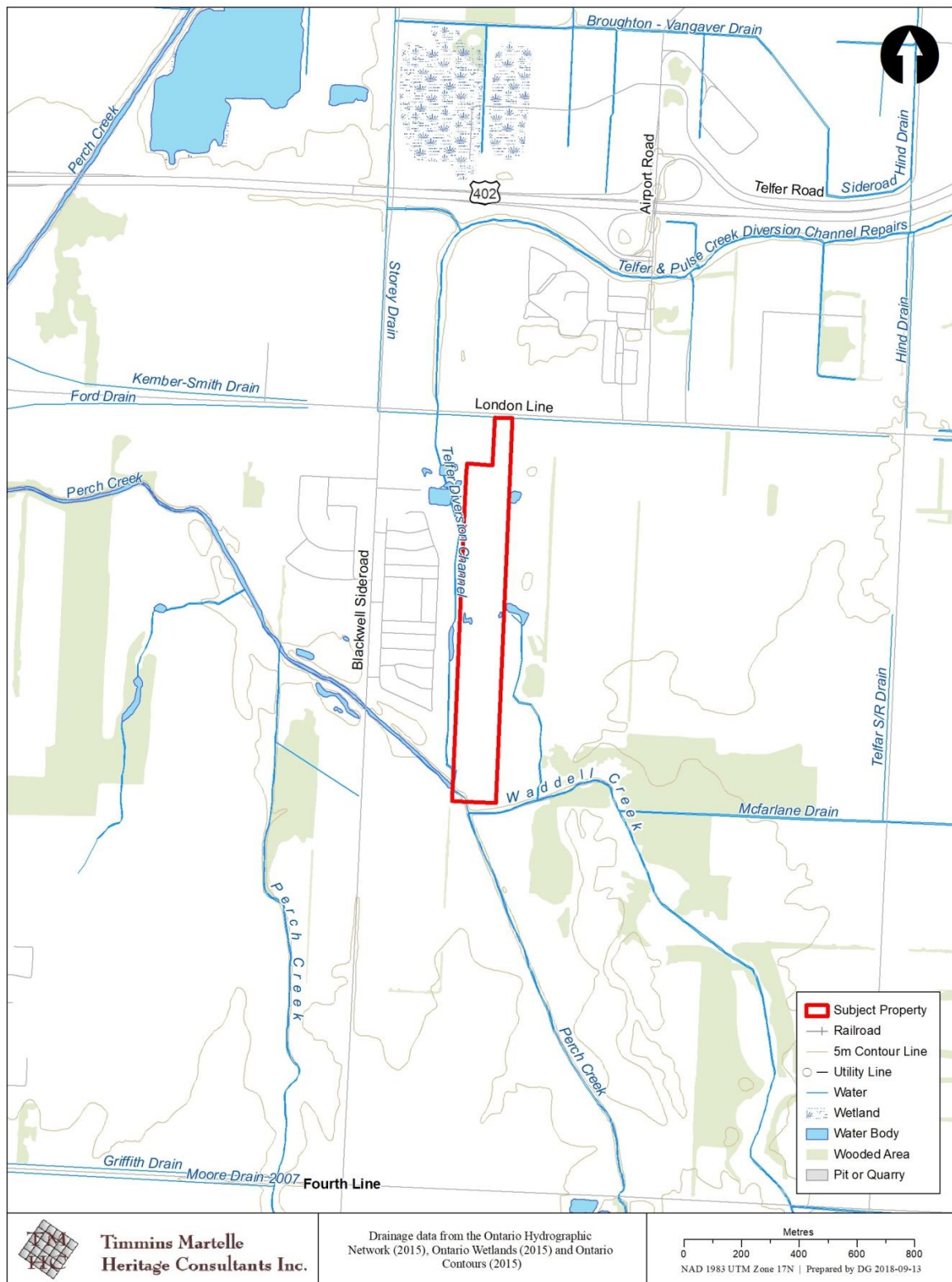




Map 4: Physiography Within the Vicinity of the Subject Property



Map 5: Soils within the Vicinity of the Subject Property



Map 6: Drainage within the Vicinity of the Subject Property



Map 7: Subject Property Shown on an 1880 Map of Lambton County, ON



**Map 8: Subject Property Shown on a 1954 Aerial Photograph of Lambton County,
ON**







Map 10: Stage 2 Field Conditions and Assessment Methods Shown on Proponent Mapping