

**Stage 1 & 2 Archaeological Assessment  
Proposed Aggregate Pit  
Amiens Road  
Part of Lots 1 and 2, Concession 2  
Geographic Township of Lobo  
Middlesex County, Ontario**

Submitted to

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and

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## Executive Summary

A Stage 1 and 2 archaeological assessment was conducted for a roughly 24.5 hectare (60.5 acre) rural agricultural parcel, falling within part of Lots 1 and 2, Concession 2 in the Geographic Township of Lobo, now in the Municipality of Thames Centre, Middlesex County, Ontario. Johnston Brothers Limited is proposing to license the area for aggregate extraction and hired Timmins Martelle Heritage Consultants Inc. (TMHC) to carry out an archaeological assessment as a standard condition of the aggregate licensing approval process, under the *Aggregate Resources Act*, R.S.O. 1990. The purpose of this work was to determine whether there are any archaeological resources present on the property that may be adversely affected by the proposed change in land use.

The Stage 1 background study included a review of current land use, historic and modern maps, past settlement history for the area and archaeological investigations, as well as a consideration of topographic and physiographic features, soils and drainage. This indicated that the property had potential for the recovery of archaeological resources primarily given its proximity to: a water source (Crow Creek); previously identified archaeological locations; and three historic transportation routes (Amiens Road, Glendon Drive, and the Great Western Railway). A Stage 2 field assessment was subsequently recommended.

The majority of the subject property consists of active agricultural field (86%; 21 hectares) which was subjected to pedestrian survey. The agricultural fields were comprised of well-weathered, ploughed lands and were surveyed at a five metre interval. The tree nursery and woodlot portions of the subject property (approximately 7%; 1.8 hectares) were subject to a standard test pit survey at a five metre interval. An existing extraction pit in the northeast portion of the subject property (approximately 7%; 1.6 hectares) was assessed as having low archaeological potential and was photo-documented.

The Stage 2 survey resulted in the discovery of six archaeological locations, designated Location 1 (AfHi-382; a lithic scatter identified through test pit survey), Location 2 (AfHi-384; lithic scatter identified by a surface find and adjacent positive test pits and test unit), Location 3 (AfHi-383; a large multi-component site with Middle and Late Woodland period components, with possible Middle and Late Archaic components, identified by 128 surface artifacts), Location 4 (a 20<sup>th</sup> century scatter identified by about 120 surface artifacts, and one biface), Location 5 (a lithic scatter consisting of six surface finds) and Location 6 (an isolated biface). Location 1 (AfHi-382), Location 2 (AfHi-384) and Location 3 (AfHi-383) qualify for Stage 3 testing based on provincial standards. An additional Stage 2 CSC was conducted on Location 3.

Our recommendations with respect to each of these locations and the overall property are presented below.



- 1) *Location 1 (AfHi-382)* is a pre-contact lithic scatter found solely through a test pit survey. The site has further cultural heritage value and Stage 3 testing is recommended. At this time, the proponent has decided to protect the site within the licensed area to allow for the potential to conduct the required archaeological work at a later date. The site would be protected with a 70 m buffer zone that would be demarcated by a post and wire fence that would be erected under the supervision of a licensed archaeologist. This protected area will be clearly depicted on the site operations plan. No machine travel or ground disturbance can occur within the protected area until further archaeological investigations have been completed by a licensed archaeologist and the report for the MTCS has been accepted into the provincial register.

When it is decided to conduct the additional archaeological investigations, the Stage 3 should employ a methodology suitable for large multi- or single-component lithic scatters found solely through a test pit survey (MTC 2011:51, Table 3.1). This would involve the excavation of one-metre units by hand at intervals of 10 metres across the limits of the surface scatter. This would be followed by the excavation of an additional 40% infill units placed in areas of interest. It is recognized that this strategy may not generate enough information to fully inform a Stage 4 recommendation and propose an adequate work strategy; therefore a finer testing interval may be desirable.

- 2) *Location 2 (AfHi-384)* is a pre-contact native site with no confirmed cultural or temporal affiliation. The site has further cultural heritage value and Stage 3 testing is recommended. At this time, the proponent has decided to protect the site within the licensed area to allow for the potential to conduct the required archaeological work at a later date. The site would be protected with a 70 m buffer zone that would be demarcated by a post and wire fence that would be erected under the supervision of a licensed archaeologist. This protected area will be clearly depicted on the site operations plan. No machine travel or ground disturbance can occur within the protected area until further archaeological investigations have been completed by a licensed archaeologist and the report for the MTCS has been accepted into the provincial register.

When it is decided to conduct the additional archaeological investigations, the Stage 3 strategy should follow that established for sites where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4 (MTC 2011:51, Table 3.1). This will involve the excavation of one metre units across a 5 metre grid throughout the site, with an additional 20% of infill units placed in areas of interest. As the site is partially located within active agricultural fields, a controlled surface collection (CSC) should be completed prior to the unit excavation.



- 3) *Location 3 (AfHi-383)* is a large scatter of native artifacts, with a Middle and Late Woodland affiliation, as well as possible Middle and Late Archaic components. The site has further cultural heritage value and Stage 3 testing is recommended. At this time, the proponent has decided to protect the site within the licensed area to allow for the potential to conduct the required archaeological work at a later date. The site would be protected with a 20 m buffer zone that would be demarcated by a post and wire fence that would be erected under the supervision of a licensed archaeologist. This protected area will be clearly depicted on the site operations plan. No machine travel or ground disturbance can occur within the protected area until further archaeological investigations have been completed by a licensed archaeologist and the report for the MTCS has been accepted into the provincial register.

When it is decided to conduct the additional archaeological investigations, the Stage 3 strategy should employ a methodology suitable for small pre-contact and post-contact sites where it is clearly evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4 (MTC 2011:51, Table 3.1). As the surface collection of artifacts has already been completed this would involve the excavation of one-metre units by hand at intervals of 10 metres across the limits of the surface scatter. This would be followed by the excavation of an additional 40% infill units placed in areas of interest.

- 4) *Location 4* is a scatter of 20<sup>th</sup>-century artifacts. Based on the recovery of fewer than 20 artifacts that date to before 1900 (MTC 2011:41; Section 2.2, Standard 1.c), Location 4 does not meet provincial standards for Stage 3 assessment and no further work is recommended. The pre-contact component of Location 4 is an isolated biface fragment of indeterminate cultural or temporal affiliation. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10 metre by 10 metre area, the pre-contact component of Location 4 does not meet provincial standards for Stage 3 assessment and no further work is recommended.
- 5) *Location 5* is an isolated pre-contact find spot of indeterminate cultural or temporal affiliation. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10 metre by 10 metre area (MTC 2011:41; Section 2.2, Standard 1.a.ii), Location 5 does not meet provincial standards for Stage 3 assessment no further work is recommended.
- 6) *Location 6* is an isolated pre-contact find spot of indeterminate cultural or temporal affiliation. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10 metre by 10 metre area (MTC 2011:41; Section 2.2, Standard 1.a.i), Location 6 does not meet provincial standards for Stage 3 assessment and no further work is recommended.



The areas within the subject property that were not found to contain archaeological resources are considered free of archaeological concern and no further work is recommended for these. If the boundaries of the proposed licensing area change to incorporate lands not investigated during this study, further assessment will be required.

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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**William Bradshaw**                      *Licensed Professional Engineer, Project Planner*  
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**Lloyd Johnston**                      *Johnston Brothers (Bothwell) Limited*



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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 roughly 24.5 hectare (60.5 acre) rural agricultural parcel, falling within part of Lots 1 and 2, Concession 2 in the Geographic Township of Lobo, now in the Municipality of Thames Centre, Middlesex County, Ontario. Johnston Brothers Limited is proposing to license the area for aggregate extraction and hired Timmins Martelle Heritage Consultants Inc. (TMHC) to carry out an archaeological assessment as a standard condition of the aggregate licensing approval process, under the *Aggregate Resources Act*, R.S.O. 1990. The purpose of this work was to determine whether there are any archaeological resources present on the property that may be adversely affected by the proposed change in land use.

All archaeological consulting activities were performed under the Professional Archaeological License of Matthew Beaudoin, Ph.D. (P324) and in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). Permission to enter the property and carry out all required archaeological work, including collecting artifacts when present, was given by Johnston Brothers Limited.

#### ***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. Our archaeological assessment work is part of an environmental review which is intended to identify areas of environmental interest as specified in the *Provincial Policy Statement*. 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 (OMMAH 2014:29).*

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. Mitigative measures and/or alternative development approaches can be included in these plans and assessments (OMMAH 2014:40).

The *Aggregate Resources Act*, R.S.O. 1990, also calls for the conservation of heritage resources and all class-specific license applications filed with the Ministry of Natural Resources must provide technical reports that outline measures for the identification and mitigation of archaeological resources within proposed extraction areas. Thus, cultural heritage resources must be considered within the licensing approval process. Aggregate extraction may only take place on properties that have been cleared of archaeological concern. A Stage 1 background review is carried out to determine if there is potential for the discovery of archaeological sites within a proposed licensed area. If a property demonstrates archaeological potential, a Stage 2 field survey must be carried out. If potentially significant sites are found during the field review, subsequent Stage 3 and Stage 4 assessments may be required.

## **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 2011 *Standards and Guidelines for Consultant Archaeologists* (MTC), a Stage 1 background study must include a review of:

- an up-to-date listing of sites from the Ministry of Tourism, Culture and Sport's archaeological sites database of 1 km around the property;
- 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 of registered archaeological sites within one kilometre of the subject property was carried out with the Ministry of Tourism, Culture and Sport's PastPort system (completed May 4, 2016);
- a review of known prior archaeological reports for the property and adjacent lands (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 reviewed through ArcGIS and mapping layers provided by geographynetwork.ca; detailed mapping provided by the client was also reviewed; and
- historic maps and records related to post-1800 land settlement were studied.

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 physiography 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, this information was used to create a summary of the characteristics of the subject lands, in an effort to evaluate their archaeological potential. The Province (MTC 2011 – Section 1.3.1) has recently 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 Euro-Canadian 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 is 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 a roughly 24.5 hectare rural agricultural parcel bordering Amiens Road, on the southwestern periphery of the Community of Komoka. It is comprised of the northern parts of Lots 1 and 2, Concession 2 in the Geographic Township of Lobo, in Middlesex County. The subject property is bounded to the west by Amiens Road, to the north intermittently by the Great Western Railway and woodlot, to the east by tree cover and the wetland buffer of Crow Creek, and finally to the south by a partial tree border, beyond which are agricultural properties (Maps 1 and 2). The subject property consists primarily of cleared and cultivated fields (Image 1) and the general topography of the property is gentle rolling. A tree nursery occupies the northern corner of the subject property (Image 14). To the south of the subject property is several existing residential and farmstead properties, fronting Glendon Drive. This portion of Lobo Township is rich in aggregate resources. There is currently an active pit just to the north of the subject property border, as well as an active pit within the eastern portion of the property (Images 21 and 22)..

The subject property falls within the Caradoc Sand Plain physiographic region, as defined by Chapman and Putnam (1984: 113). The area is found nested between spillways to the east, and the Stratford Till Plain to the north (Map 3). The region consists of a series of small, light-textured sandy plains that are essentially waterlain deposits associated with former glacial spillways and deltas (Chapman and Putnam 1984: 146). For some time now the basin's sand and gravel deposits have been used for aggregate extraction (Chapman and Putnam 1984:146). Nearby, the Lucan Moraine falls roughly two kilometres to the north of the property. The soils within the subject property consist of a medley of fine sands and loamy fine sands from the Plainfield Association, developed over level to moderately sloping eolian sand plains and dunes. They were originally deposited by glaciolacustrine waters, but have since become deeper due to wind modification (Hagerty and Kingston 1992:60). The western half of the property is made up of poorly draining Waterin, imperfectly draining Walsingham, and rapidly draining Plainfield Loamy Fine Sand. The eastern lobe of the property consists entirely of rapidly draining Plainfield Fine Sand (Map 4).

The subject property falls within the Thames River watershed and a major branch, the Middle Thames, is located to the southeast (Map 5). As previously mentioned, Crow Creek runs very near to the eastern border of subject property, and is the closest source of



potable water. There is a series of wetlands that are associated with Crow Creek, which exist to the north and east of the subject property.

### ***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 33 registered archaeological sites within one kilometre of the subject property (Table 1). These consist of five Late Archaic sites, three Early Woodland sites, one Middle Woodland site, five Late Woodland sites, five multi-component sites, one Woodland site and 13 indeterminate pre-contact sites. The closest site, AfHi-25 is located to the northwest of the subject property.

### ***2.2.3 Summary of Past Archaeological Investigations Within 50 Metres***

During the course of this study a record of several examples of past archaeological investigations were found within the immediate vicinity of the subject property. The closest recorded site to the property is AfHi-25 (the Cornell site), which is mapped just on the north side of the railway bordering the property. It should be noted that the exact location of this site is undetermined at this time. This site is described as a single burial pit, which contained a ceramic pot and bone beads. The site was destroyed by house construction in 1926, and was reported on by Dr. Wilfrid Jury. William Fox later examined the ceramic vessel, which is now on display at the Museum of Ontario Archaeology.

An investigation carried out by William Fox in 1982 located another site, approximately 50 metres to the north, known as the Huron Rye site (AfHi-58). It is described as a series of small artifact clusters, interpreted as campsites, dating from the Late Archaic to the Middle Woodland periods. This area was surveyed to prevent any damage to archaeological resources from the impending expansion of the Huron Construction aggregate pit.

Finally, AfHi-18 was found approximately 50 metres to the east of the subject property. It was recorded by Brad Meyers, and reported to the ASC in 1974. Though the site type has not been determined, it seems to have been a multicomponent site, including both early Woodland period and Meadowood materials.

No further records of archaeological investigations within 50 metres of the subject property were found. 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.



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

Borden Number	Site Name	Temporal Affiliation	Site Type	Researcher
AfHi-18	-	Woodland, Early	Undetermined	Meyers (1974)
AfHi-25	Cornell	Woodland, Late	Burial	Jury (n.d.)
AfHi-29	Campbell	Woodland, Late	Campsite	Fox (1980)
AfHi-33	Komoka 4	Woodland, Late	Hamlet	Archaeological Services Inc. (ASI) (1980)
AfHi-34	-	Pre-Contact	Undetermined	ASI (1980)
AfHi-58	Huron Rye	Archaic, Late, Woodland, Middle	Campsite	Fox (1982)
AfHi-59	Vandenburgt	Archaic, Late	Camp/campsite	Fox (1982)
AfHi-136	Old Barn	Other	Findspot	Archaeologix Inc. (AI) (1992)
AfHi-137	Belvoir	Woodland, Early, Woodland, Late, Woodland, Middle	Undetermined	AI (1992)
AfHi-139	Paddock	Post-Contact, Woodland, Early	Undetermined	AI (1992)
AfHi-151	Lone Goose 2	Pre-Contact	Undetermined	AI (1993)
AfHi-154	Big Ben	Woodland, Early	Findspot	AI (1993)
AfHi-155	Horse Trials	Woodland, Early	Undetermined	AI (1993)
AfHi-156	Zucarlos	Pre-Contact	Undetermined	AI (1993)
AfHi-157	Ian Miller	Pre-Contact	Undetermined	AI (1993)
AfHi-158	Stallion	Pre-Contact	Undetermined	AI (1993)
AfHi-167	Laural Kay	Woodland	Undetermined	AI (1993)
AfHi-168	Rob's Toss	Pre-Contact	Burial	AI (1993)
AfHi-169	Spool	Pre-Contact	Undetermined	AI (1993)
AfHi-181	Renwick Village	Archaic, Late, Archaic, Middle, Woodland, Middle	Village; camp/campsite	Mayer Heritage Con. (1995)
AfHi-222	Valleyview 1	Pre-Contact	Scatter	Museum of Ontario Archaeology (MOA) (1997)
AfHi-223	Valleyview 2	Pre-Contact	Scatter	MOA (1997)
AfHi-224	Valleyview 3	Pre-Contact	Findspot	MOA (1997)
AfHi-225	Valleyview 4	Woodland, Late	Scatter	MOA (1997)
AfHi-226	Valleyview 5	Pre-Contact	Scatter	MOA (1997)
AfHi-227	Valleyview 6	Archaic, Late	Camp / campsite	MOA (1997)
AfHi-228	Valleyview 7	Archaic, Late	Camp / campsite	MOA (1997)
AfHi-229	Valleyview 8	Pre-Contact	Scatter	MOA (1997)
AfHi-249	-	Archaic, Late, Woodland	Camp / campsite, short term	AI (2000)
AfHi-251	-	Archaic, Late	Findspot	AI (2000)
AfHi-326	-	Woodland, Late	Camp	AI (2003)
AfHi-327	-	Archaic, Late	Camp	AI (2003)
AfHi-338	Komoka Station 1	Pre-Contact, Woodland, Middle	Scatter	O'Neal (n.d.)





## 2.2.4 Dates of Archaeological Fieldwork

The Stage 2 fieldwork was conducted on May 5<sup>th</sup>, 6<sup>th</sup>, and 17<sup>th</sup>, 2016. The weather was clear, sunny and warm on each of the field days. A follow-up CSC for Location 3 was conducted on May 9, 2017 under sunny and warm weather conditions.

## 2.3 Project Context: Historical Context

### 2.3.1 Pre- and Early Post-Contact First Peoples Settlement in Middlesex County

Our knowledge of First Peoples occupation of the general area is incomplete. Nevertheless, using province-wide and region-specific data, a generalized cultural chronology for First Peoples settlement in the area can be proposed (Table 2). A summary of the themes and temporal periods of native occupation is provided below.

**Table 2: Cultural Chronology for First Peoples Settlement in Middlesex 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	
	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	
Terminal		1500 - 1100 B.C.	small points	Crawford Knoll	
		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	Saugeen
	Transitional		A.D. 500 - 900	first corn, cord-wrapped stick pottery	Princess Point
Late	Early Iroquoian	A.D. 900 - 1300	first villages, corn horticulture, longhouses	Glen Meyer	
	Middle Iroquoian	A.D. 1300 - 1400	large villages and houses	Uren, Middleport	
	Late Iroquoian	A.D. 1400 - 1650	tribal emergence, territoriality, first Europeans	Neutral Iroquois	
Contact	Aboriginal	A.D. 1700 - 1875	treaties, mixture of Native & European items	Chippewa, Ojibway, Oneida, Delaware	
	Euro-Canadian	A.D. 1796 - present	English goods, homesteads	European settlement, pioneer life	

### *Paleoindian*

The first human populations to inhabit the area came to the region 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 first peoples would have crossed the landscape in small groups (i.e. bands or family units) searching for food, particularly migratory game species. In the 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 white-gray chert named "Fossil Hill" after the geological formation, or "Collingwood." Located near the escarpment on "Blue Mountain," this source was exploited by populations from as far south as the London area, who would have traveled here as part of their seasonal round.

### *Archaic*

The archaeological record of early native life in Southern Ontario indicates a change in lifeways beginning circa 8000 B.C. at the start of what archaeologists call the Archaic Period. The Ontario populations are better known than their Paleoindian predecessors, with numerous sites found throughout the area. The characteristic projectile points of early Archaic populations appear similar in some respects to early varieties and are likely a continuation of early trends. Archaic populations continued to rely heavily on game, particularly caribou, but diversified their diet and exploitation patterns with changing environmental conditions. 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, 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 environs 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 resource abundance. The change to more preferable environmental circumstances led to a rise in population density. As a result, Archaic sites are more abundant 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 and waste flakes, a by-product of the tool making process.

### *Woodland Period*

Significant changes in cultural and environmental patterns are witnessed in the Woodland Period (circa 950 B.C to historic times). The coniferous forests of earlier times were replaced by stands of mixed and deciduous species. Occupations became increasingly more permanent 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. The earliest pottery was rather crudely made by the coiling method and house structures were simple enclosures.

#### *Iroquoian Period*

The primary Late Woodland occupants of the area were the Neutral Nation or Attawandaron, an Iroquoian speaking population described by European missionaries. Like other known Iroquoian groups including the Huron (Wendat) and Tionontate (Petun), the Neutral practiced a system of intensive horticulture based on three primary subsistence crops (corn, beans and squash). Neutral 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 precontact Neutral 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 Neutral were dispersed and their population decimated by the arrival of epidemic European diseases and inter-tribal warfare.

#### **2.3.2 19<sup>th</sup> Century and Municipal Settlement**

The subject property is situated within Lots 1 and 2, Concession 2 in the Geographic Township of Lobo, on the periphery of the Komoka Community, Middlesex County, Ontario. A brief discussion of early Euro-Canadian settlement in these places is provided below, together with a consideration of features that would otherwise indicate historic era archaeological potential.

It was Lieut.-Governor John Graves Simcoe who first drew attention to the bounties of the wilderness that is now Middlesex County. On his journey to Detroit from Niagara, Simcoe came to admire the countryside (H.R. Page 1878:5). In fact, Simcoe was so taken by the Thames River and its environs that he aspired to make it the capital of Canada. Although his vision was never realized, the Thames attracted European settlement early in the 19<sup>th</sup> century.

Lobo Township was surveyed in 1820 by Mahlon Burwell and the following year an act was passed that declared Lobo, Mosa, Ekfrid and Caradoc townships as part of Middlesex County. An influx of settlers, many of Scottish descent, came shortly thereafter and by 1825 there were 40 heads of household in the township (LTHS 1995). The Township was known for its fertile agricultural land and natural resources. Some of the earliest settlers were the McKellars, Zavitzs, McArthurs, Pattersons, Walters,



Woodwards and Shipleys (H.R. Page & Co. 1878:11). In 1878 the population was 3,500 (H.R. Page & Co. 1878:11).

The community of Komoka was established through three formal surveys: 1) the Wellington Survey of 1854 that established lots on the west side of Main Street; 2) the Geddes Survey of 1854 that laid out lots on the east side of Main Street; and 3) the Komoka Survey of 1855. Patrick Geddes and Benjamin Springer played key roles in these surveys. The planning of the settlement was encouraged by the arrival of the Great Western Railway in 1853 and for some time Komoka was touted as a potential capital of Middlesex County (LTHS 1995). The community grew as a major station site at the juncture of the main railway line and the Sarnia branch (H. R. Page & Co. 1878:11). The Komoka Post Office (formerly named Lobo Station) opened in 1855. By 1888 the community had a population of 276 (Goodspeed 1889:56) and boasted a post office, merchants, hotel, woolen mill, saw mill, flour mill, carriage shop, blacksmith, dressmaker, tailor, carpenter, hardware and grocery store, cabinet maker, shingle and lath factory.

The subject property is located in the northern halves of Lots 1 and 2. An 1878 map (Map 6) shows that Amiens Road and Glendon Drive were established roadways, and the Great Western Railway was established along the northwest border of the subject property. Additionally, Lot 1 had been divided by that time: the western half owned by W. Dunn, while the eastern half fell under the ownership of J. Cassidy. Finally, Lot 2 was owned by a James McIntosh. James McIntosh is listed in the 1871 census as a 67-year-old farmer of Scottish background residing in Lobo Township. While the map depicts a house on the Dunn and the McIntosh property, as well as an orchard on the Cassidy and the McIntosh properties, all of these features fall well south of the subject property. The land parcel has remained in agricultural use since the time it was cleared in the 19<sup>th</sup> century.

## 2.4 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 the following features that signal archaeological potential:

- 1) a water source (Crow Creek);
- 2) previously identified archaeological locations; and,
- 3) three historic transportation routes (Amiens Road, Glendon Drive, and the Great Western Railway).

Generally, the high density of archaeological sites in vicinity increases the likelihood for artifacts to be found on the property. A review of project maps and aerial photographs revealed that most of the subject property has not witnessed prior development and, except for the active pit to the east, is only minimally disturbed by ploughing and therefore retains its archaeological potential.



## 2.5 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 active agricultural land was recommended for pedestrian survey, while any remnant grassed, treed or otherwise unploughable lands were recommended for test pit assessment. In all cases, a five metre transect interval was recommended to achieve the provincial standard. It was also surmised that any active pits within the subject property would also have low archaeological potential and would not require Stage 2 assessment due to prior disturbance. In sum, the property was considered to have archaeological potential pending Stage 2 field inspection and therefore a separate map detailing zones of archaeological potential is not provided herein (as per Section 7.7.4 Standard 1 and 7.7.6, Standards 1 and 2).

## 3.0 STAGE 2 ARCHAEOLOGICAL ASSESSMENT

### 3.1 Field Methods

All fieldwork was undertaken in good weather (sunny and warm) 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 proximity to landscape features, and fenced/treed property lines.

Because of the varied surface conditions a combined pedestrian and test pit survey was undertaken. A pedestrian survey was conducted of the active agricultural fields (approximately 86%; 21 hectares) at a five metre interval (Images 2-11) under conditions of good to excellent surface visibility (80% or greater). The field had been ploughed and was allowed to weather under rain prior to assessment. Soils in the field were a brown sandy loam, and fragments of fire-cracked or frost fractured rocks and clinker were noted throughout the property. When cultural material was identified during pedestrian survey the survey transects were reduced to one metre or less and a minimum of 20 metre radius around each find was intensively examined to determine the spatial extent of each site (Image 12). The number of artifacts collected was sufficient to adequately date the location, with the general aim to leave some in the field for site re-identification. If a location obviously did not meet the requirements for a Stage 3 archaeological assessment at the time of the field survey, all of the surface artifacts were collected. The artifact finds were mapped using a hand held WAAS-enabled GPS unit manufactured by Garmin (Image 13). Landscape markers were also tied in using the same instruments.

A controlled surface collection (CSC) for Location 3 was carried out in accordance with the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consultant Archaeologists* (MTC 2011) on May 9, 2017. The weather during the



CSC was sunny and warm. Lighting conditions provided good visibility of land features in accordance with MTCS standards (MTC 2011:29, Section 2.1, Standard 3).

The CSC was conducted to gather more information that will assist in documenting the characteristics and the extent archaeological site at Location 3. The agricultural field was well weathered with excellent visibility (90%) (Images 24 and 25). The sites were re-located using GPS coordinates and the Stage 2 mapping. The CSC was conducted at a one metre interval and extended a minimum of 20 metre radius around the site area. Each artifact, or immediate cluster of artifacts, was mapped and given a unique station or point identifier for use in cataloguing and in preparing a detailed surface distribution map. All surface artifacts were collected.

The tree nursery and woodlot portions of the subject property (approximately 7%, or 1.8 hectares) were subject to a standard test pit survey at a five metre interval (Images 15-16; 18-19). 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 one metre from all standing features, including trees. The test pits dug on the tree nursery portion of the subject property generally contained between 0-45 cm of light brown sandy loam topsoil on top of orange silty sand subsoil (Image 16). The test pits dug in the woodlot portion of the subject property generally contained between 15-40 cm of brown to black loamy sand topsoil on top of yellow to white sandy subsoil (Image 19). Toward the centre of the woodlot, some of the test pits were observed to be deep with very dark-coloured soils. It is believed that this area was either formerly, or seasonally, wet.

When cultural material was found during test pit survey the survey was intensified (reduced to 2.5 metres) to determine the cultural significance and size of the site (Image 17). If not enough archaeological material was identified from the intensification a one-metre test unit was hand excavated atop of the original positive test pit (Image 20).

As per Section 2.1, Standard 2 of the *Standards and Guidelines* (MTC 2011:28-29), survey was not required when encountering areas that are impacted by extensive and deep land alterations (roughly 7%; 1.6 hectares). When encountered, these areas were recorded and photo-documented to demonstrate their low archaeological potential. Areas of obvious and extensive disturbance consisted of an active pit, located in the eastern segment of the property (Images 21 and 22). Though no standardized archaeological survey was conducted in the disturbed portion of the property, one artifact was recovered from an out of context sand pile while surveying the adjacent field.

Map 7 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 8 presents the Stage 2 results on the proponent map and an unaltered version of



the same drawing appears in Map 9. The Supplementary Documentation portion of this report includes maps showing more detail on the location of archaeological finds made during this assessment. Table 3 provides an inventory of the documentary records generated during this project.

### 3.2 Record of Finds

The Stage 2 archaeological assessment resulted in identification of six artifact locations. A general description of the locations and findings at each of these is provided below. More precise information regarding the geographic location of the sites is provided in the “Supplementary Documentation” portion of this report.

**Table 3: Documentary Record**

<b>Field Notes And Field Maps</b>	May 5, 6, and 17, 2016, and May 9, 2017
<b>Photo Catalogue</b>	May 5 (P1010265-293), 6 (P1060406-416), 17 (P1080252-265), May 9 (P1010630-5)
<b>Artifact Collection</b>	<p>Artifact bags contain individually bagged artifacts sorted by context and organized by catalogue number with paper labels:</p> <ul style="list-style-type: none"> <li>• Bag 1: <b>Bradshaw – Amiens Road Pit</b>, 2016-032, Stage 1 &amp; 2, AfHi-382, Location 1, All Artifacts</li> <li>• Bag 2: <b>Bradshaw – Amiens Road Pit</b>, 2016-032, Stage 1 &amp; 2, AfHi-384, Location 2, All Artifacts</li> <li>• Bag 3: <b>Bradshaw – Amiens Road Pit</b>, 2016-032, Stage 1 &amp; 2, AfHi-383, Location 3, All Artifacts</li> <li>• Bag 4: <b>Bradshaw – Amiens Road Pit</b>, 2016-032, Stage 1 &amp; 2, Location 4, All Artifacts</li> <li>• Bag 5: <b>Bradshaw – Amiens Road Pit</b>, 2016-032, Stage 1 &amp; 2, Location 5, All Artifacts</li> <li>• Bag 6: <b>Bradshaw – Amiens Road Pit</b>, 2016-032, Stage 1 &amp; 2, Location 6, All Artifacts</li> <li>• Bag 7: <b>Bradshaw – Amiens Road Pit</b>, 2016-032, Stage 1 &amp; 2, Backdirt Pile, All Artifacts</li> </ul> <p>All within a larger project bag with project label:</p> <ul style="list-style-type: none"> <li>• Large Bag: <b>Bradshaw – Amiens Road Pit</b>, 2016-032, Stage 1 &amp; 2, All Locations, All Artifacts</li> </ul>
<b>Location of Records</b>	Timmins Martelle Heritage Consultants Inc., @ the Museum of Ontario Archaeology, 1600 Attawandaron Road, London, Ontario N6G 3M6

#### *Location 1 (AfHi-382)*

Location 1 was identified in the northeastern corner of the property. It consisted of 19 positive test pits (Test Pits 1-19) that contained a total of 22 artifacts (Image 24; Table 4). Overall, the site spans a 60 metre (north-south) by 45 metre (east-west) area. The intensification consisted of the excavation of eight additional test pits at 2.5 m intervals surrounding an initial positive test pit. As it was obvious at that time that enough archaeological materials had been collected to determine that the site would require a Stage 3 archaeological assessment a Stage 2 test unit was not excavated. The test pits contained 30cm of brown sandy silty loam topsoil over grey sand subsoil, mottled with orange and brown sand (Image 16).

A total of 21 flakes and one scraper were recovered at Location 1. The majority of flakes (n=7) were made on Onondaga chert, followed by Kettle Point chert (n=5),



indeterminate chert types (n=5), till chert (n=3), and Selkirk chert (n=1). Most chipping detritus represented flake fragments (n=9), followed by secondary flakes (n=8), and shatter (n=4). The scraper is made on an indeterminate burnt chert, and is an endscraper with a rounded retouched working edge (Image 26a). The scraper measures 21.6 mm long, 19.1 mm wide and 4.5 mm thick.

**Table 4: AfHi-382 (Location 1), Stage 2 Artifact Catalogue**

Cat.	Context	Layer/Depth	Artifact	n	Comments
1	Test Pit 1	ts, 0-35cm	chipping detritus	1	Unknown; shatter
2	Test Pit 2	ts, 0-30cm	chipping detritus	1	Onondaga; fragment
3	Test Pit 3	ts, 0-30cm	chipping detritus	2	1 Kettle Point, secondary; 1 till, secondary
4	Test Pit 4	ts, 0-30cm	chipping detritus	1	Onondaga; fragment
5	Test Pit 5	ts, 0-35cm	scraper	1	Burnt; endscraper
6	Test Pit 6	ts, 0-30cm	chipping detritus	1	Selkirk; secondary
7	Test Pit 7	ts, 0-35cm	chipping detritus	1	Unknown; fragment
8	Test Pit 8	ts, 0-30cm	chipping detritus	1	Onondaga; fragment
9	Test Pit 9	ts, 0-30cm	chipping detritus	1	Till; secondary
10	Test Pit 10	ts, 0-30cm	chipping detritus	1	Onondaga; fragment
11	Test Pit 11	ts, 0-35cm	chipping detritus	1	Unknown; shatter
12	Test Pit 12	ts, 0-30cm	chipping detritus	1	Unknown; fragment
13	Test Pit 13	ts, 0-30cm	chipping detritus	1	Onondaga; secondary
14	Test Pit 14	ts, 0-30cm	chipping detritus	1	Kettle Point; fragment
15	Test Pit 15	ts, 0-30cm	chipping detritus	1	Till; fragment
16	Test Pit 16	ts, 0-30cm	chipping detritus	1	Unknown; shatter
17	Test Pit 17	ts, 0-30cm	chipping detritus	2	1 Onondaga, shatter; 1 Kettle Point, fragment
18	Test Pit 18	ts, 0-30cm	chipping detritus	1	Onondaga; secondary
19	Test Pit 19	ts, 0-30cm	chipping detritus	2	Kettle Point; secondary
			<b>Total</b>	<b>22</b>	

*Location 2 (AfHi-384)*

Location 2 was identified near the northeastern border of the central woodlot (Images 27-28; Table 5). The site first consisted of an isolated flake and core fragment found during pedestrian survey that were roughly 20m apart, with no additional finds encountered during intensified survey. Test pit survey in the adjacent woodlot yielded additional material; the intensification process consisted of the excavation of eight test pits surrounding the positive test pits, followed by the excavation of a test unit, which was opened atop Test Pit 1. Based on the distance, the core fragment found during the pedestrian survey should be considered an outlier of the site. As such, the site spans a 20 metre (north-south) by 15 metre (east-west) area.

A total of 13 flakes, two cores, and seven pieces of faunal remains were recovered at Location 2. Both cores are made on Kettle Point chert, and represent core fragments with multidirectional flake scars. The smaller of the two cores, recovered from Test Pit 3, measures 12.3 mm in length, 17.9 mm wide, and exhibits one surface with cortex (Image 27b). The second core measures 44.0 mm long and 13.2 mm wide (Image 27a). The chipping detritus consists mainly of Kettle Point chert (n=10), followed by an indeterminate burnt chert (n=2), and Onondaga chert (n=1). The majority of debitage was





flake fragments (n=7), followed by secondary flakes (n=5) and shatter (n=1). The faunal remains consisted of seven pieces of mammal bones.

**Table 5: AfHi-384 (Location 2), Stage 2 Artifact Catalogue**

Cat.	Context	Layer/Depth	Artifact	n	Comments
1	Surface Find	surface	chipping detritus	1	Onondaga; shatter
2	Station 96	surface	core	1	Kettle Point; fragment
3	Test Pit 1	ts, 0-15cm	chipping detritus	1	Kettle Point; fragment
4	Test Pit 2	ts, 0-30cm	chipping detritus	2	Kettle Point; 1 secondary, 1 fragment
5	Test Pit 3	ts, 0-30cm	core	1	Kettle Point; fragment
6	Test Unit 1	ts, 0-15cm	chipping detritus	8	7 Kettle Point, 4 secondary, 3 fragments; 1 burnt, fragment
7	Test Unit 1	ts, 0-15cm	faunal remains	5	mammal
8	Test Unit 1	ss, 15-30cm	chipping detritus	1	Burnt; fragment
9	Test Unit 1	ss, 15-30cm	faunal remains	2	mammal
			<b>Total</b>	<b>22</b>	

*Location 3 (AfHi-383)*

Location 3 was a lithic scatter identified in the western portion of the property. It consisted of approximately 43 artifacts over a 150 metre (north-south) by 105 metre (east-west) area. With outliers, the site covers 135 metres in its east-west dimension (Images 29-34; Table 6). The site was identified during a pedestrian survey. A representative sample of 23 artifacts was collected in order to assist in the accurate assessment of the site. The Stage 2 artifact catalogue is presented in Appendix A.

A total of four ceramic sherds of pottery, three projectile points, one core, three scrapers, three bifaces, one uniface, one utilized flake, one notched flake, and seven flakes comprise the Location 3 collection. All four ceramic sherds were fragmentary in nature, and were not able to be identified to type (Image 34). Three were missing either the exterior or interior surface, and the most complete of the four sherds had a thickness of 7.3 mm with black mineral or rock inclusions. The thin wall is suggestive of a Late Woodland timeframe for the pottery.

Three projectile points were recovered at Location 3. The first (cat. 1) is a tip fragment made on Onondaga chert (Image 33a). It measures 24.1 mm long, 24.9 mm wide and 5.0 mm wide. The blade appears to be ovate in form, however, it is too fragmentary to determine as to its type. The second projectile point (cat. 16) is a small, side-notched point made on Onondaga chert, which is missing its tip (Image 33b). It measures 28.1 mm long, 21.0 mm wide and 5.7 mm thick, and has a slightly convex base. Based on the size and shape of the point, it resembles a Late Archaic period Innes Point (ca. 2800 B.P.) (Ellis et al. 1990:97), however, it also has characteristics of a Late Woodland period Dewaele type (Fox 1982). The last point (cat. 17) is another side-notched type, also made on Onondaga chert and missing its tip (Image 33c). This projectile point measures 30.3 mm long, 24.1 mm wide, and 6.4 mm thick, and features a serrated edge. Based on its shape, the point most closely resembles the Brewerton Side-



Notched type (Ritchie 1971:19) from the Middle Archaic period (ca. 5000-4500 B.P.) (Ellis et al. 1990:72). The serrated edge is an anomalous feature given the shape of the point, and is suggestive of the Early Archaic Nettling point type, although these points are usually corner-notched as opposed to side-notched. Multiple step-fractures at the broken end of the point suggest that it may have been used as a scraper or wedge after the tip was broken.

Three scrapers were collected during Stage 2 work at Location 3. The first scraper is made on Onondaga chert, and appears to have one steeply retouched edge, although the fragmentary nature of the tool makes it difficult to determine the type of scraper (Image 31c). It measures 21.0 mm long, 10.6 mm wide and 3.0 mm thick. The second scraper, also made on Onondaga chert, is an endscraper, and measures 28.8 mm long, 29.6 mm wide, and 10.8 mm thick (Image 31a). Lastly, the third scraper is made on Kettle Point chert, and measures 23.0 mm long, 17.5 mm wide and 8.6 mm thick (Image 31b). It is an end scraper, and may be reworked from a projectile point, given the flake scars on both sides, and the bifurcated base.

Three bifaces fragments were recovered at Location 3. The first biface is made on Onondaga chert, and measures 22.7 mm long, 35.3 mm wide and 9.4 mm thick (Image 32a). The second biface is made on Kettle Point chert and likely represents a midsection fragment (Image 32b). It measures 18.4 mm long, 16.3 mm wide, and 3.7 mm thick. The last biface is another midsection fragment, made on Onondaga chert (Image 32c). It measures 16.5 mm long, 17.4 mm wide and 5.1 mm thick. One unifacial tool was also recovered; this is made on Selkirk chert and is broken along one end. It measures 44.9 mm long, 34.0 mm wide and 12.5 mm thick (Image 30a).

One core was recovered from Location 3. This artifact measures 32.9 mm long and 14.2 mm wide, and is made on Kettle Point chert (Image 30b). The core appears to be a multidirectional core tool. Seven flakes were also recovered from Location 3, the majority of which were flake fragments (n=5), while two were secondary flakes. Most of the flakes were of Kettle Point chert (n=4), while two were made of an indeterminate chert type, and one of Onondaga chert. One utilized flake and one notched flake were also recovered. The utilized flake is a flake fragment of Kettle Point, and has a retouched edge on the distal surface (Image 30d). The notched flake is also a flake fragment, and is made on burnt Onondaga (Image 30c).

A Stage 2 controlled surface collection (CSC) was conducted at Location 3 in the spring of 2017. A total of 104 surface artifacts were observed, mapped, and collected during the CSC: 73 chert flakes, seven retouched flakes, six utilized flakes, six bifaces, six pieces of pottery (five fragmentary sherds and one body sherd), three projectile points, two scrapers, and one wedge.

**Table 6: AfHi-383 (Location 3), Stage 2 CSC Chipping Detritus**



Type	Onondaga	Kettle Point	Haldimand	Flint Ridge	Selkirk	Till	Indeterminate	Burnt	Total	%
Primary	2	1					1		4	4.7
Secondary	14	18	5	1	1	2	6	1	48	55.8
Fragment	6	7	3			4	9		29	33.7
Shatter		3				1	1		5	5.8
Total	22	29	8	1	1	7	17	1	86	100.0
%	25.6	33.7	9.3	1.2	1.2	8.1	19.8	1.2	100.0	

A total of 86 pieces of chipping detritus were recovered during the CSC. The chipping detritus was dominated by Kettle Point chert (n=39; 33.7%) and Onondaga chert (n=22; 25.6%). A significant amount of the chipping detritus was of locally available till chert (n=7; 8.1%) and an indeterminate chert type (n=17; 19.8%). The remainder of the chipping detritus is made up of locally available Haldimand chert (n=8; 9.3%) and Selkirk chert (n=1; 1.2%), and Flint Ridge chert (n=1; 1.2%) which is obtained from a source in the Ohio Valley. Flint Ridge chert is associated with, but not exclusive to, the Middle Woodland period. The chipping detritus is dominated by secondary flakes (n=48; 55.8%) and flake fragments (n=29; 33.7%), which suggests that tool manufacture and repair activities were ongoing at the site; however, the presence of primary flakes and pieces of shatter also suggests that people were also processing the locally available chert cobbles. Seven of the flakes show evidence of retouch along one working edge and six flake show evidence of utilization.

Three projectile points were recovered during the CSC. The first (cat. 40) is a deeply side notched point made on Onondaga chert that is missing its tip and measures 38.3 mm in length, 20.0 mm in width, and 4.9 mm in thickness. The lateral edges are straight and the cross section is bi-convex. The notches are deep, with a notch width of 7.6 mm. The base is straight and has been thinned. There is some regular flaking along one of the lateral edges, but overall the point is irregularly flaked. Morphologically, this projectile point best resembles a Late Woodland period (c. A.D. 1250-1400) Middleport style projectile point (MIA nd:29). The second projectile point (cat. 60) is a side notched point made on Haldimand chert that is missing its tip and a corner of the base, which measures 39.4 mm long, 19.4 mm wide, and 7.2 mm thick. The lateral edges are straight-to-convex and not heavily retouched. The cross section is bi-convex. The notch width is 13.5 mm and the base is slightly concave. Morphologically, this projectile point is most likely a Late Woodland period style point; however, it cannot be further refined at this time. The third projectile point (cat. 87) is a reworked corner notched projectile point made on Kettle point chert, which measures 29.8 mm long, 28.1 mm wide, and 4.7 mm thick. The lateral edges are convex and angular, and the cross section is bi-convex. The tip has been heavily retouched to create a new point. The notches are angled towards the tip, creating sharply barbed shoulders and a notch width of 14.4 mm. The base is thinned and slightly concave. Morphologically, this projectile point best resembles a Late Middle Woodland period (ca. A.D 400-600) Jack's Reef corner-notched style point (MIA nd:26).

Two scrapers were recovered during the CSC. The first (cat. 83) is an endscraper made on burnt Onondaga chert that measures 16.2 mm long, 17.3 mm wide, and 5.8 mm



thick. The lateral edges have been bifacially retouched and the bit end is convex. The bit angle is roughly 60°. The second (cat. 114) is an expedient scraper that is made on a large secondary flake of Onondaga chert that measures 22.7 mm long, 23.3 mm wide, and 5.6 mm thick. The distal end of this flake has been retouched to create a relatively shallow bit (roughly 45°) angle.

Six bifaces were recovered from the CSC. The first (cat. 41) is a tip fragment made on Onondaga chert that measures 15.9 mm long, 15.5 mm wide, and 4.7 mm thick. The lateral edges are straight and the cross section is bi-convex. The second (cat. 48) is a complete roughly triangular shaped biface made on Selkirk chert that measures 51.6 mm long, 38.3 mm wide, and 9.9 mm thick. All edges have been coarsely bifacially worked. The third (cat. 49) is a biface end fragment made on Kettle Point chert that measures 17.2 mm long, 25.0 mm wide, and 7.1 mm thick. The fourth (cat. 69) is a large secondary flake of Onondaga chert that is bifacially worked on one lateral and the distal margin. It measures 55.7 mm long, 35.3 mm wide, and 11.8 mm thick. The fifth biface (cat. 70) is an end fragment made on possible Flint Ridge chert that measures 30.3 mm long, 26.0 mm wide, and 7.6 mm thick. This biface is possibly the stem portion of a tool that has tapered lateral edges and a flat base. The final biface is an edge fragment of Onondaga chert that measures 27.7 mm long, 19.5 mm wide, and 6.7 mm thick. The wedge is made on a large secondary flake of a burnt indeterminate chert type and measures 26.9 mm long, 17.9 mm wide, and 9.1 mm thick.

The native pottery sherds recovered during the CSC are all small fragmentary sherds; four of which have possible decoration and surface treatment. The first two (cat. 31 and cat. 32) are fragmentary sherds that measure up to 12.0 mm thick and have possible rocker stamping on the surface. There are white and black inclusions in the paste that measure up to 3.0 mm. The third (cat. 84) is a fragmentary sherd that measures 7.5 mm thick and has an impression on the exterior surface. The paste has small (<1.0 mm) black and white inclusions. The final decorated sherd (cat. 119) is a body sherd that has been cord malleated that is up to 8.1mm thick and has small (<1.0 mm) black and white inclusions.

#### *Location 4*

Location 4 was identified in the southwestern corner of the subject property. It consisted of a scatter of about 120 20<sup>th</sup> century artifacts over a 52 metre (north-south) by 30 metre (east-west) area (Image 33; Table 7). All refined ceramics, as well as a representative sample of other artifact types were collected in order to assist in the accurate dating of the site. Roughly 60 artifacts were left in the field, which consisted mostly of glass objects. These were left in the field in order to assist with future site relocation if further assessment is necessary at the site.

A total of 55 artifacts and items were collected from Location 4. By function, most artifacts were classed as food & beverage (n=31). Of these 15 were ceramic and 16



were glass. Ceramic types included refined white earthenware (RWE; n=2), ironstone (n=3), semiporcelain (n=5), porcelain (n=1), and glazed coarse earthenware (n=1). There were also two sherds of unidentified white earthenware and one sherd identified only as RWE or semiporcelain. RWE was the dominant ceramic type on dining tables for much of the 19<sup>th</sup> century until it was slowly replaced by the more robust ironstone. RWE did not disappear entirely, however. Developed in 1842, ironstone rose to popularity after the Wheat pattern was introduced in 1859 (Sussman 1985:7). Ironstone dominated in tableware, teaware and toiletry ceramics during the fourth quarter of the 19<sup>th</sup> century. Production of ironstone continued into the 20<sup>th</sup> century, although by this time its manufacture was largely restricted to toiletries and hotel ware (Wetherbee 1996:10). Semiporcelain was a shift back to a delicate ware after the heaviness of ironstone. It was popular c.1890 to the 1920s (Majewski and O'Brien 1987:123, 155). The only decoration style observe on any ceramic type was transfer print. Transfer print décor was introduced in the mid-18<sup>th</sup> century. For the first time, potters could easily apply complex and intricate designs to ceramic. Hundreds of patterns were produced and pattern styles generally enjoyed popularity periods of ten to thirty years. Transfer print was probably the most enduring decoration style and was available throughout the 19<sup>th</sup> century and into the 20<sup>th</sup> century.

**Table 7: Location 4, Artifacts by Function**

Function	Total
Food & beverage	31
Architectural	6
Modified	6
Activities	2
Native	1
Unassigned material	1
Unknown	8
<b>Total</b>	<b>55</b>

Glass food & beverage artifacts were two sherds of a machine-made pop bottle and 14 sherds of tableware glass. The tableware glass included colourless machine-made sherds and opaque white sherds. Opaque white glass became widely used for tableware, containers and lighting in the late 19<sup>th</sup> century (Jones & Sullivan 1989:14).

Other artifacts and items were window glass, a porcelain interior insulator, a coarse earthenware flower pot sherd, a CHAMPION spark plug, utilized glass, glass containers, and a piece of zinc. Utilized glass sherds and container sherds were machine made, opaque white and manganese decoloured. Production of wide-mouthed containers (example: canning jars) by semi-automatic machines began in the 1890s (Lindsey 2016). The first fully automatic machine for narrow and wide-mouthed containers was the Owen's machine, introduced in 1904 (Jones & Sullivan 1989:38-39). Machines did not immediately replace the mould-blown method due to cost and worker resistance, but by 1915 glass machines became common (Lindsey 2016). Glassmakers added manganese to



the glass mixture to counteract iron oxides to make the glass colourless. The method worked, but resulted in a purplish tint after sustained exposure to sunlight (Jones & Sullivan 1989:13). The date range for this method is c.1870 to the 1920s. Broken glass was sometimes used as expedient tools to cut, scrape, smooth, saw, and chisel. The reuse of glass sherds as tools has been observed around the world. In Canada and the United States the use of glass tools was a folk tradition used for woodworking, though there may have been other uses (Clark 1981; Brandon 2014).

Finally, one native artifact was recovered: a biface fragment made of Kettle Point chert (Image 34). Despite intensification of the survey interval and a close examination of the area for a radius of 20 metres beyond the find, no further lithic artifacts were noted.

The assemblage dates post-1900. There were no diagnostic artifacts that date exclusively pre-1900 and few diagnostic artifacts that were in production prior to 1900. Fewer than 20 artifacts that date to before 1900.

*Location 5*

Location 5 was a lithic scatter identified in the northwestern corner of the northwestern agricultural field. It consisted of six artifacts scattered over a roughly 5 metre (north-south) by 15 metre (east-west) area; with outliers, the site covers a 10 metre (north-south) by 70 metre (east-west) area (Image 35; Table 8). The site was identified during a pedestrian survey. Five pieces of chert detritus were collected, as well as one core. The core is multidirectional, and measures 37.7 mm long and 40.3 mm wide (Image 35a). Out of the five flakes, three were made of Onondaga chert, and two were made on Kettle Point chert. Two flake fragments, two secondary flakes and one piece of shatter comprised the chert debitage. The utilized flake displayed retouching on the lateral edges (Image 35b).

**Table 8: Location 5, Stage 2 Artifact Catalogue**

Cat.	Context	Artifact	n	Comments
1	surface	utilized flake	1	Onondaga; secondary
2	surface	chipping detritus	1	Onondaga; fragment
3	surface	chipping detritus	1	Onondaga; secondary
4	surface	chipping detritus	1	Kettle Point; shatter
5	surface	chipping detritus	1	Kettle Point; fragment
6	surface	core	1	Kettle Point
		<b>Total</b>	<b>6</b>	

*Location 6*

Location 6 was an isolated find identified in the northwestern portion of the northwestern agricultural field, roughly 40 metres to the southeast of Location 5 (Image 36; Table 9). The identified site consists of a single biface fragment made on Kettle Point chert. The biface is broken on two edges, and measures 30.0 mm long, 25.3 mm wide,



and 6.4 mm thick. Despite the intensification of the survey interval and a close examination of the area for a radius of 20 metres beyond the find, no further artifacts were noted.

**Table 9: Location 6, Stage 2 Artifact Catalogue**

Cat.	Context	Artifact	n	Comments
1	surface	biface	1	Kettle Point; fragment
		<b>Total</b>	<b>1</b>	

*Backdirt Pile*

The artifact recovered from a backdirt pile during Stage 2 survey consists of a broken projectile point made on an indeterminate burnt chert type (Image 37). The projectile point is a tip fragment, that measures 30.6 mm long, 17.6 mm wide, and 8.4 mm thick. The blade shape is concave. A more detailed age and cultural affiliation cannot be assigned to the piece given it is a fragment. Unfortunately, due to nature of this artifact, which was found out of context, no further work is recommended for this find.

**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* (MTC 2011). This demonstrated that the majority of the lands had not been heavily disturbed by prior activity. The Stage 2 field assessment resulted in the discovery of six archaeological locations. Section 2.2 of the *Standards and Guidelines for Consultant Archaeologists* establishes criteria whereby the cultural heritage value of archaeological finds can be evaluated and the need for follow up Stage 3 testing and/or Stage 4 mitigation of construction impacts established. Each archaeological location is evaluated below.

*Location 1 (AfHi-382)* is a pre-contact lithic scatter consisting of 22 artifacts recovered from 19 positive test pits. As none of the artifacts were diagnostic, no cultural or temporal affiliation can be confirmed for the site at this time. Based on the presence of at least five non-diagnostic artifacts within a 10m by 10m test pit area (MTC 2011:40; Section 2.2, Standard 1a.ii.2), AfHi-382 qualifies for Stage 3 assessment.

*Location 2 (AfHi-384)* is a site identified by 13 flakes, two cores, and seven pieces of faunal remains, recovered from one test pit, one test unit, and as well as two surface finds from the adjacent field. As none of the artifacts were diagnostic, no cultural or temporal affiliation can be confirmed for the site at this time. Based on the presence of at least five non-diagnostic artifacts within a 10m by 10m test pit area (MTC 2011:40; Section 2.2, Standard 1a.ii.2), AfHi-384 qualifies for Stage 3 assessment.

*Location 3 (AfHi-383)* is a site identified during pedestrian survey by 128 artifacts over a 150m by 105m area, including a total of nine sherds of pottery, six projectile



points, one core, five scrapers, nine bifaces, one uniface, seven utilized flake, one notched flake, seven retouched flakes, one wedge, and 80 flakes. The site is a large multi-component site that contains Middle Woodland, and Late Woodland components. In addition, there are possible Middle and Late Archaic components to the site; however, these are represented by single artifacts that are less definitive. Based on the presence of native pottery (MTC 2011:40; Section 2.2, Standard 1b.i), AfHi-383 qualifies for Stage 3 assessment.

*Location 4* is a scatter of 20<sup>th</sup>-century artifacts. Based on the recovery of fewer than 20 artifacts that date to before 1900 (MTC 2011:41; Section 2.2, Standard 1.c), Location 4 does not meet provincial standards for Stage 3 assessment. The pre-contact component of Location 4 is an isolated flake of indeterminate cultural or temporal affiliation. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10m by 10m area (MTC 2011:41; Section 2.2, Standard 1a.i), the pre-contact component of Location 4 does not meet provincial standards for Stage 3 assessment.

*Location 5* is a site identified by five flakes and one core recovered during pedestrian survey. As none of the artifacts were diagnostic, no cultural or temporal affiliation can be confirmed for the site at this time. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10m by 10m area (MTC 2011:40; Section 2.2, Standard 1.a.ii.2), Location 5 does not meet provincial standards for Stage 3 assessment and has no further cultural heritage value or interest (CHVI) within the provincial framework.

*Location 6* is an isolated pre-contact find spot consisting of one biface. As the artifact was not diagnostic, no cultural or temporal affiliation can be confirmed for the site at this time. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10m by 10m area (MTC 2011:40; Section 2.2, Standard 1a.ii.2), Location 6 does not meet provincial standards for Stage 3 assessment.

### 3.4 Recommendations

A Stage 1 and 2 archaeological assessment was conducted for a proposed aggregate pit that comprises a roughly 24.5 hectare (60.5 acre) rural agricultural parcel, falling within part of Lots 1 and 2, Concession 2 in the Geographic Township of Lobo, now in the Municipality of Thames Centre, Middlesex County, Ontario. Archaeological material was reported in six locations. Our recommendations with respect to each of these locations and the overall property are presented below.

- 1) *Location 1 (AfHi-382)* is a pre-contact lithic scatter found solely through a test pit survey. The site has further cultural heritage value and Stage 3 testing is recommended. At this time, the proponent has decided to protect the site within the licensed area to allow for the potential to conduct the required archaeological work at a later date. The site would be protected with a 70 m buffer zone that





would be demarcated by a post and wire fence that would be erected under the supervision of a licensed archaeologist. This protected area will be clearly depicted on the site operations plan. No machine travel or ground disturbance can occur within the protected area until further archaeological investigations have been completed by a licensed archaeologist and the report for the MTCS has been accepted into the provincial register.

When it is decided to conduct the additional archaeological investigations, the Stage 3 should employ a methodology suitable for large multi- or single-component lithic scatters found solely through a test pit survey (MTC 2011:51, Table 3.1). This would involve the excavation of one-metre units by hand at intervals of 10 metres across the limits of the surface scatter. This would be followed by the excavation of an additional 40% infill units placed in areas of interest. It is recognized that this strategy may not generate enough information to fully inform a Stage 4 recommendation and propose an adequate work strategy; therefore a finer testing interval may be desirable.

- 2) *Location 2 (AfHi-384)* is a pre-contact native site with no confirmed cultural or temporal affiliation. The site has further cultural heritage value and Stage 3 testing is recommended. At this time, the proponent has decided to protect the site within the licensed area to allow for the potential to conduct the required archaeological work at a later date. The site would be protected with a 70 m buffer zone that would be demarcated by a post and wire fence that would be erected under the supervision of a licensed archaeologist. This protected area will be clearly depicted on the site operations plan. No machine travel or ground disturbance can occur within the protected area until further archaeological investigations have been completed by a licensed archaeologist and the report for the MTCS has been accepted into the provincial register.

When it is decided to conduct the additional archaeological investigations, the Stage 3 strategy should follow that established for sites where it is not yet evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4 (MTC 2011:51, Table 3.1). This will involve the excavation of one metre units across a 5 metre grid throughout the site, with an additional 20% of infill units placed in areas of interest. As the site is partially located within active agricultural fields, a controlled surface collection (CSC) should be completed prior to the unit excavation.

- 3) *Location 3 (AfHi-383)* is a large scatter of native artifacts, with a Middle and Late Woodland affiliation, as well as possible Middle and Late Archaic components. The site has further cultural heritage value and Stage 3 testing is recommended. At this time, the proponent has decided to protect the site within the licensed area to allow for the potential to conduct the required archaeological work at a later date. The site would be protected with a 20 m buffer zone that would be



demarcated by a post and wire fence that would be erected under the supervision of a licensed archaeologist. This protected area will be clearly depicted on the site operations plan. No machine travel or ground disturbance can occur within the protected area until further archaeological investigations have been completed by a licensed archaeologist and the report for the MTCS has been accepted into the provincial register.

When it is decided to conduct the additional archaeological investigations, the Stage 3 strategy should employ a methodology suitable for small pre-contact and post-contact sites where it is clearly evident that the level of cultural heritage value or interest will result in a recommendation to proceed to Stage 4 (MTC 2011:51, Table 3.1). As the surface collection of artifacts has already been completed this would involve the excavation of one-metre units by hand at intervals of 10 metres across the limits of the surface scatter. This would be followed by the excavation of an additional 40% infill units placed in areas of interest.

- 4) *Location 4* is a scatter of 20<sup>th</sup>-century artifacts. Based on the recovery of fewer than 20 artifacts that date to before 1900 (MTC 2011:41; Section 2.2, Standard 1.c), Location 4 does not meet provincial standards for Stage 3 assessment and no further work is recommended. The pre-contact component of Location 4 is an isolated biface fragment of indeterminate cultural or temporal affiliation. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10 metre by 10 metre area, the pre-contact component of Location 4 does not meet provincial standards for Stage 3 assessment and no further work is recommended.
- 5) *Location 5* is an isolated pre-contact find spot of indeterminate cultural or temporal affiliation. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10 metre by 10 metre area (MTC 2011:41; Section 2.2, Standard 1.a.ii), Location 5 does not meet provincial standards for Stage 3 assessment no further work is recommended.
- 6) *Location 6* is an isolated pre-contact find spot of indeterminate cultural or temporal affiliation. Based on the recovery of fewer than ten non-diagnostic artifacts within a 10 metre by 10 metre area (MTC 2011:41; Section 2.2, Standard 1.a.i), Location 6 does not meet provincial standards for Stage 3 assessment and no further work is recommended.

The areas within the subject property that were not found to contain archaeological resources are considered free of archaeological concern and no further work is recommended for these. If the boundaries of the proposed licensing area change to incorporate lands not investigated during this study, further assessment will be required.



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 proposed aggregate pit that comprises a roughly 29 hectare (70 acre) rural agricultural parcel, falling within part of Lots 1 and 2, Concession 2 in the Geographic Township of Lobo, now in the Municipality of Thames Centre, Middlesex County, Ontario. The Stage 1 assessment revealed that the property had high potential for the discovery of archaeological resources based on the proximity of watercourses, previously identified archaeological sites, historic transportation routes, and mapped 19<sup>th</sup> century structures. The Stage 2 assessment (combined pedestrian and test pit assessment at a 5 m interval) resulted in the identification of six archaeological locations (designated 1 through 6), three of which (Location 1, AfHi-382; Location 2, AfHi-384; and Location 3, AfHi-383) qualify for Stage 3 testing based on provincial standards.

#### **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](mailto:Nancy.Watkins@ontario.ca).

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Respectfully submitted,



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## 7.0 IMAGES



**Image 1: Overview of Northwest Corner of the Property (looking east)**



**Image 2: Surface Visibility of Southern Field**





**Image 3: Pedestrian Survey of Southern Field (looking southeast)**



**Image 4: Surface Visibility of Central Field**



**Image 5: Pedestrian Survey of Central Field (looking northeast)**



**Image 6: Surface Visibility of Eastern Field**



**Image 7: Pedestrian Survey of Eastern Field (looking northeast)**



**Image 8: Surface Visibility of Northeastern Field**



**Image 9: Pedestrian Survey of Northeastern Field (looking northeast)**



**Image 10: Surface Visibility of Northwestern Field**



**Image 11: Pedestrian Survey of Northwestern Field (looking southwest)**



**Image 12: Intensified Pedestrian Survey at One-Meter Interval (looking southeast)**



**Image 13: Recording Artifact Locations at Location 1 (looking southwest)**



**Image 14: Tree Nursery Area Overview (looking north)**



**Image 15: Test Pit Survey in Tree Nursery (looking south)**



**Image 16: Typical Test Pit in Tree Nursery**



**Image 17: Intensification at Location 1 (looking east)**



**Image 18: Test Pit Survey in Woodlot (looking east)**





**Image 19: Typical Test Pit in Woodlot**



**Image 20: Stage 2 Test Unit Excavation over Location 2**



**Image 21: Overview of Quarry Disturbance in Northeastern Portion of Property  
(looking northeast)**



**Image 22: Overview of Quarry Disturbance in Northeastern Portion of Property  
(looking northeast)**



**Image 23: Stage 2 Test Unit over Location 2**



**Image 24: Location 3 (AfHi-383), Stage 2 CSC (looking east)**



**Image 25: Location 3 (AfHi-383), Stage 2 CSC Surface Visibility**



**Image 26: Location 1 (AfHi-382), Sample of Stage 2 Artifacts**



*A) Scraper, cat.5; B) Secondary Onondaga Flake, cat.18; C) Secondary Kettle Point Flakes, cat.19;  
D) Flake Fragment of Unknown Material, cat.7; E) Kettle Point Flake Fragment, cat.14; F) Flake  
Fragment on Till Chert, cat.15*



**Image 27: Location 2 (AfHi-384), Stage 2 Cores**



*A) Kettle Point Core Fragment, cat.2; B) Kettle Point Core Fragment, cat.5.*

**Image 28: Location 2 (AfHi-384), Sample of Stage 2 Chipping Detritus**



*A) Kettle Point Secondary Flakes and Flake Fragments, cat.6.*



**Image 29: Location 3 (AfHi-383), Sample of Stage 2 Chipping Detritus**



A) Flake Fragment on an Unknown Material, cat.4; B) Kettle Point Secondary Flake, cat.9; C) Kettle Point Secondary Flake, cat.14; D) Kettle Point Flake Fragment, cat.20.

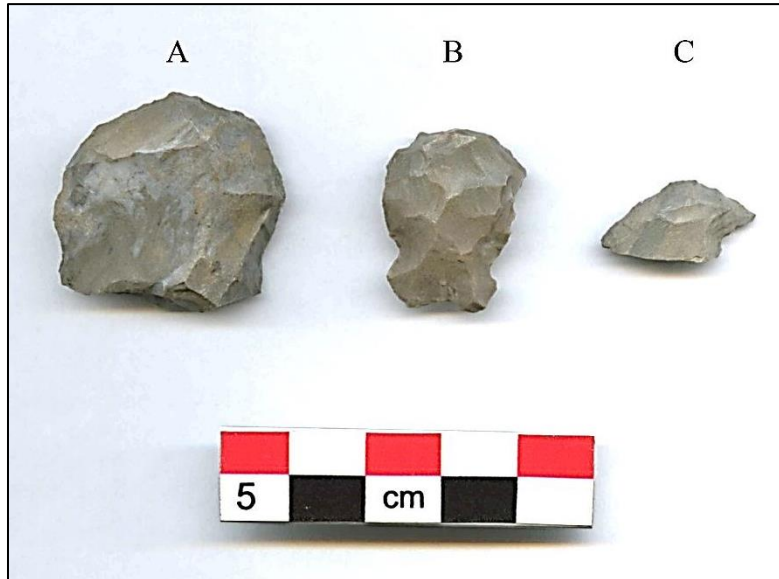
**Image 30: Location 3 (AfHi-383), Stage 2 Lithic Tools**



A) Uniface on Selkirk Chert, cat.8; B) Kettle Point Core, cat.2; C) Notched Flake on Burnt Onondaga Chert, cat.12; D) Utilized Flake on Kettle Point Chert, cat.23.



**Image 31: Location 3 (AfHi-383), Stage 2 Scrapers**



A) Onondaga Endscraper, cat.3; B) Kettle Point Endscraper, cat.6; C) Onondaga Endscraper, cat.18.

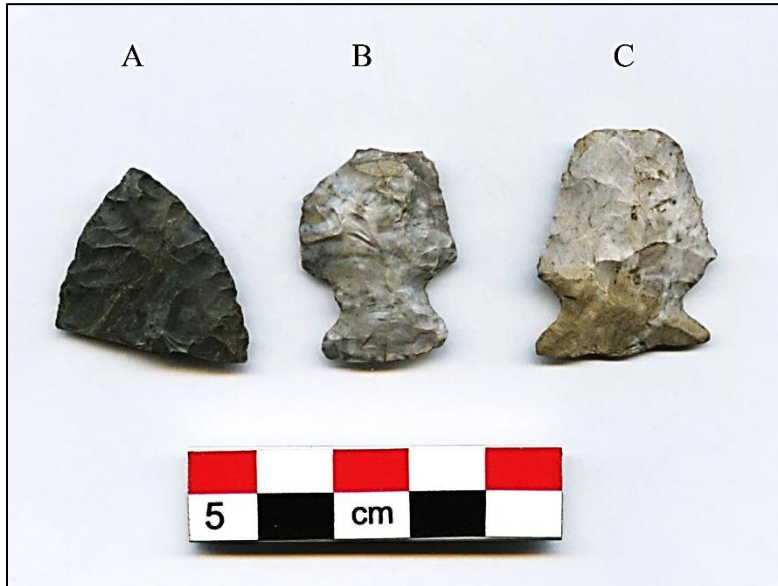
**Image 32: Location 3 (AfHi-383), Stage 2 Bifaces**



A) Onondaga Fragment, cat.7; B) Kettle Point Fragment, cat.10; C) Onondaga Fragment, cat.19.

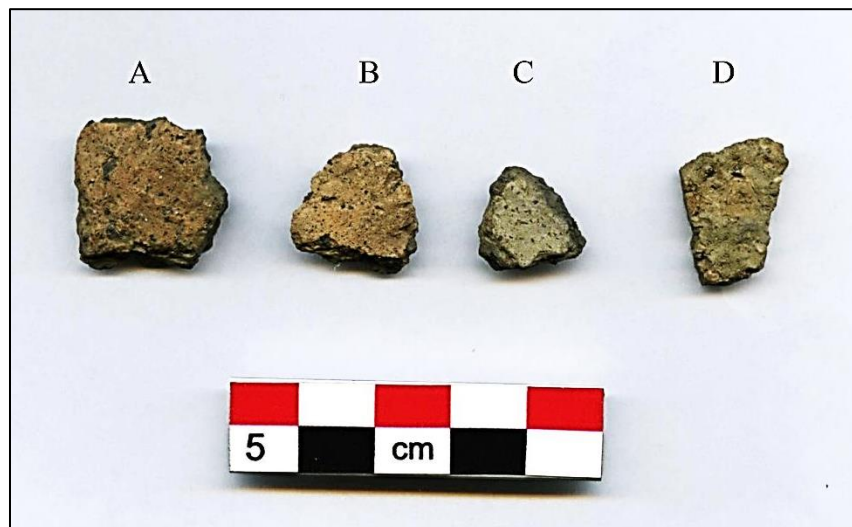


**Image 33: Location 3 (AfHi-383), Stage 2 Projectile Points**



A) Onondaga Tip Fragment, cat.1; B) Onondaga Fragment, cat.16; C) Onondaga Fragment, cat.17.

**Image 34: Location 3 (AfHi-383), Stage 2 Pottery**



A) Fragmentary Sherd, cat.22; B) Fragmentary Sherd, cat.15; C) Fragmentary Sherd, cat.11; D) Fragmentary Sherd, cat.13.





**Image 35: Location 3 (AfHi-383), Stage 2 CSC Projectile Points**



*A) Middleport Projectile point, cat.40; B) Late Woodland Projectile Point, cat.60; C) Jack's Reef Projectile Point, cat.87; D) End Scraper, cat.83; E) Expedient Scraper, cat. 114.*

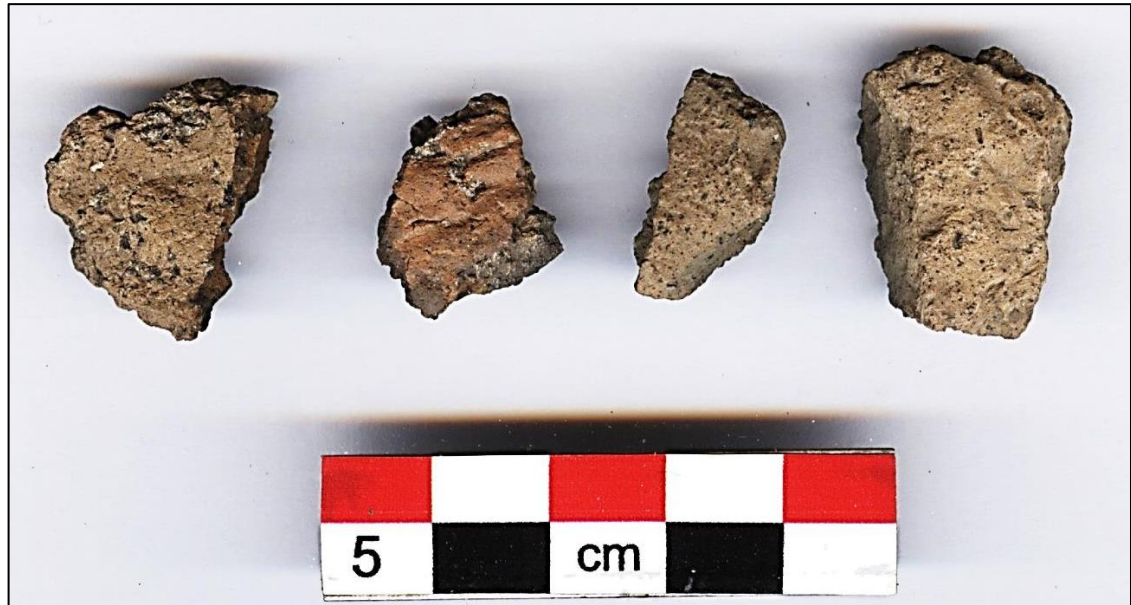
**Image 36: Location 3 (AfHi-383), Stage 2 CSC Bifaces**



*A) Biface tip, cat.41; B) Biface End Fragment, cat.70; C) Biface, cat.48; D) Biface, cat.69; E) Wedge, cat. 64.*

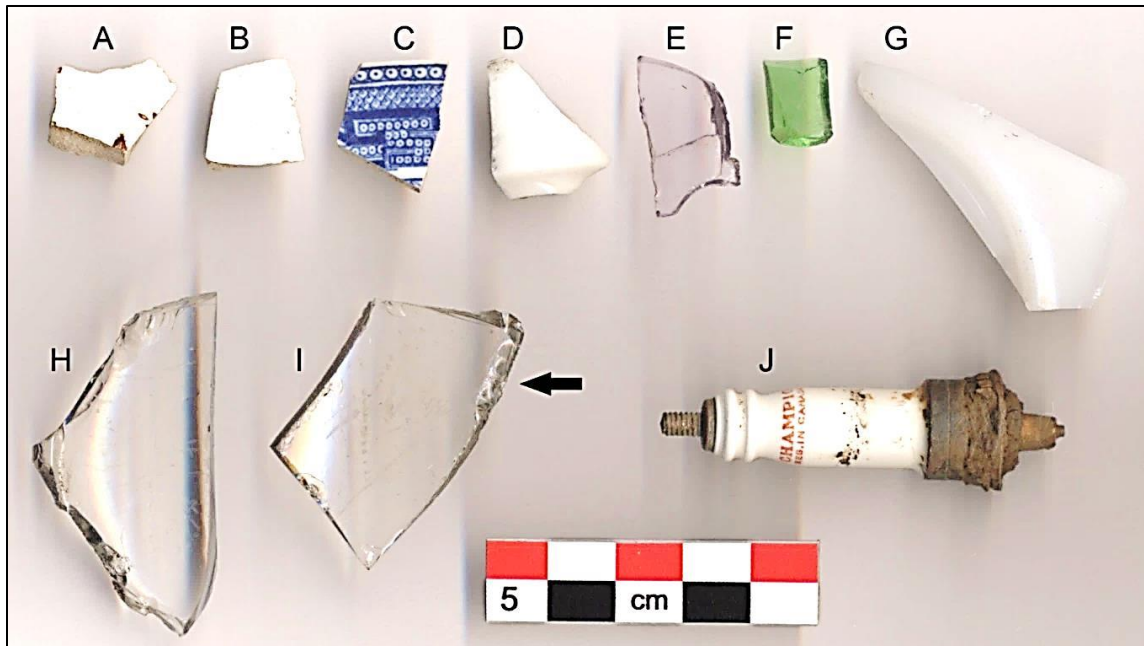


**Image 37: Location 3 (AfHi-383), Stage 2 CSC Pottery**



A) Fragmentary sherd, rocker stamping, cat.31; B) Fragmentary sherd, rocker stamping, cat.32;  
C) Fragmentary sherd, cat.84; D) Body sherd, cat.119; E) Wedge, cat. 64.

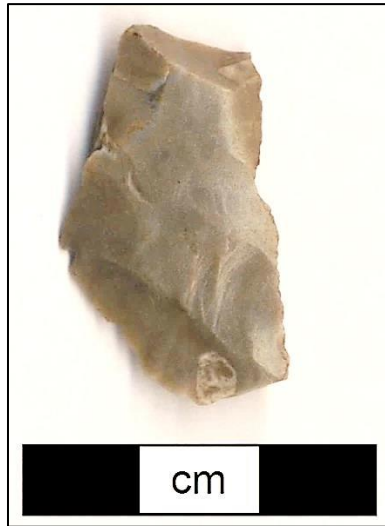
**Image 38: Location 4, Sample of Stage 2 Artifacts**



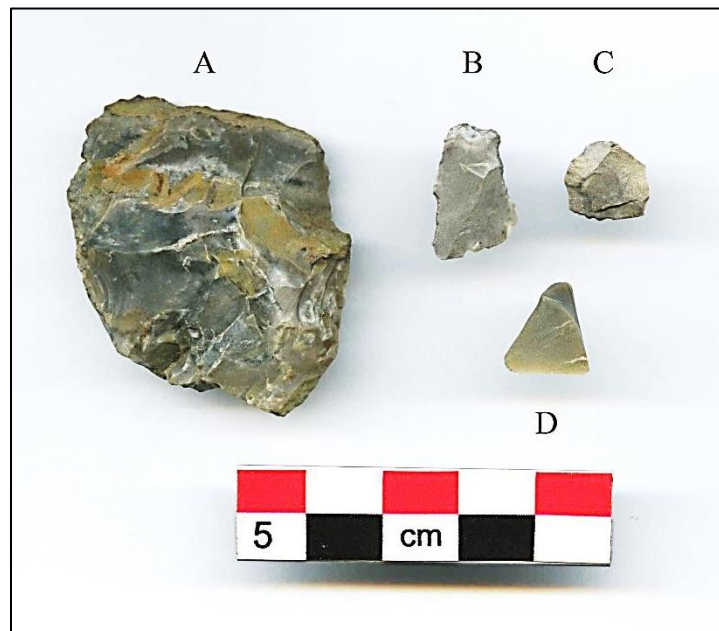
A) RWE, transfer print, cat.7; B) ironstone, cat.9; C) semiporcelain, transfer print, cat.4; D) porcelain insulator, cat.1; E) manganese-decoloured glass, cat.15; F) machine-made glass, cat.16; G) opaque white glassware, cat.21; H) machine-made glass, cat.24; I) machine-made glass with utilized edge, cat.30; J) Champion spark plug, cat.13



**Image 39: Location 4, Stage 2 Biface, cat.32**



**Image 40: Location 5, Sample of Stage 2 Artifacts**



A) *Kettle Point Core, cat.6*; B) *Onondaga Utilized Flake, cat.1*; C) *Kettle Point Flake Fragment, cat.5*; D) *Onondaga Secondary Flake, cat.3*.



**Image 41: Location 6, Stage 2 Biface**

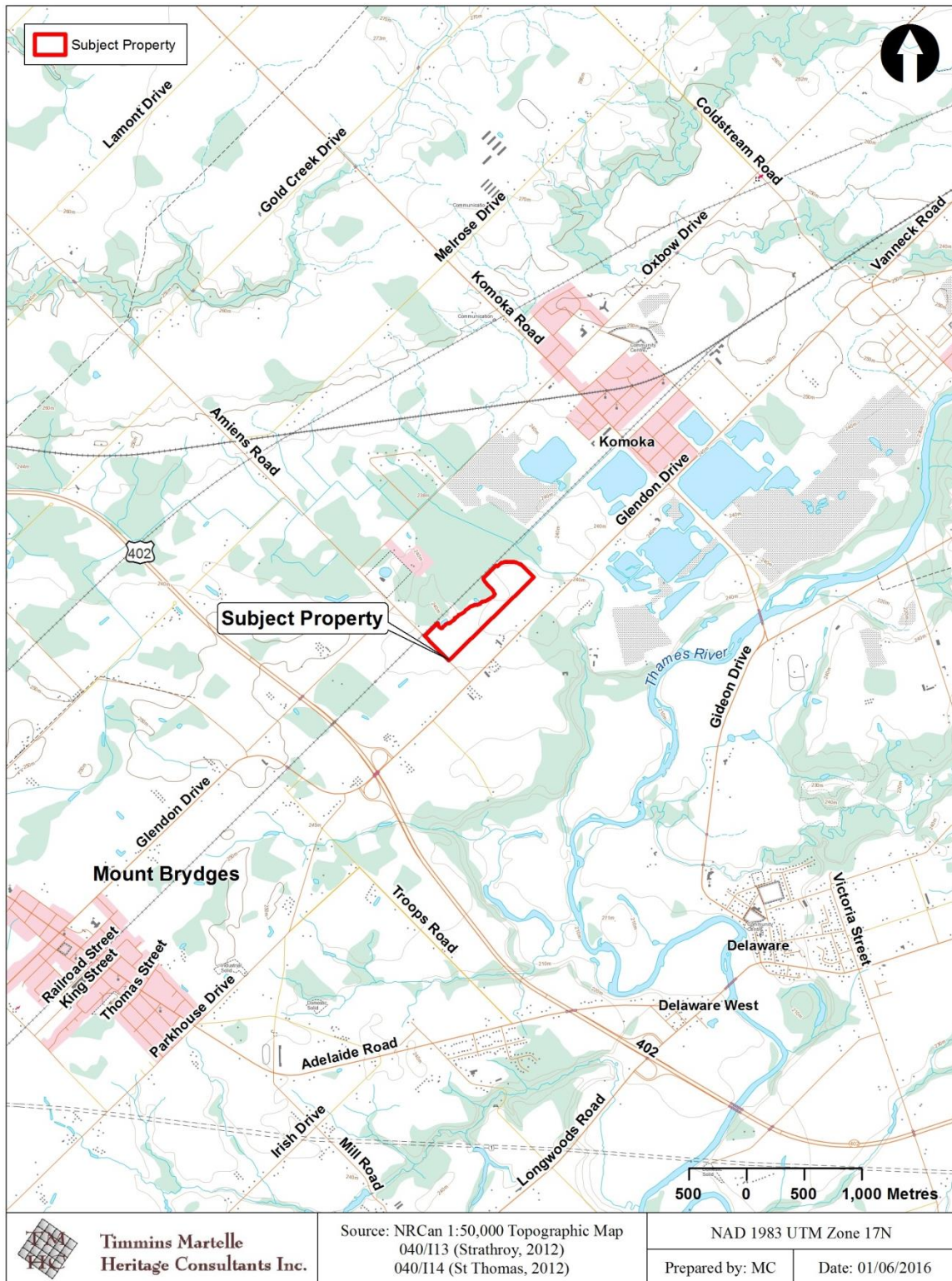


**Image 42: Projectile Point Recovered from Backdirt Pile**



## 8.0 MAPS





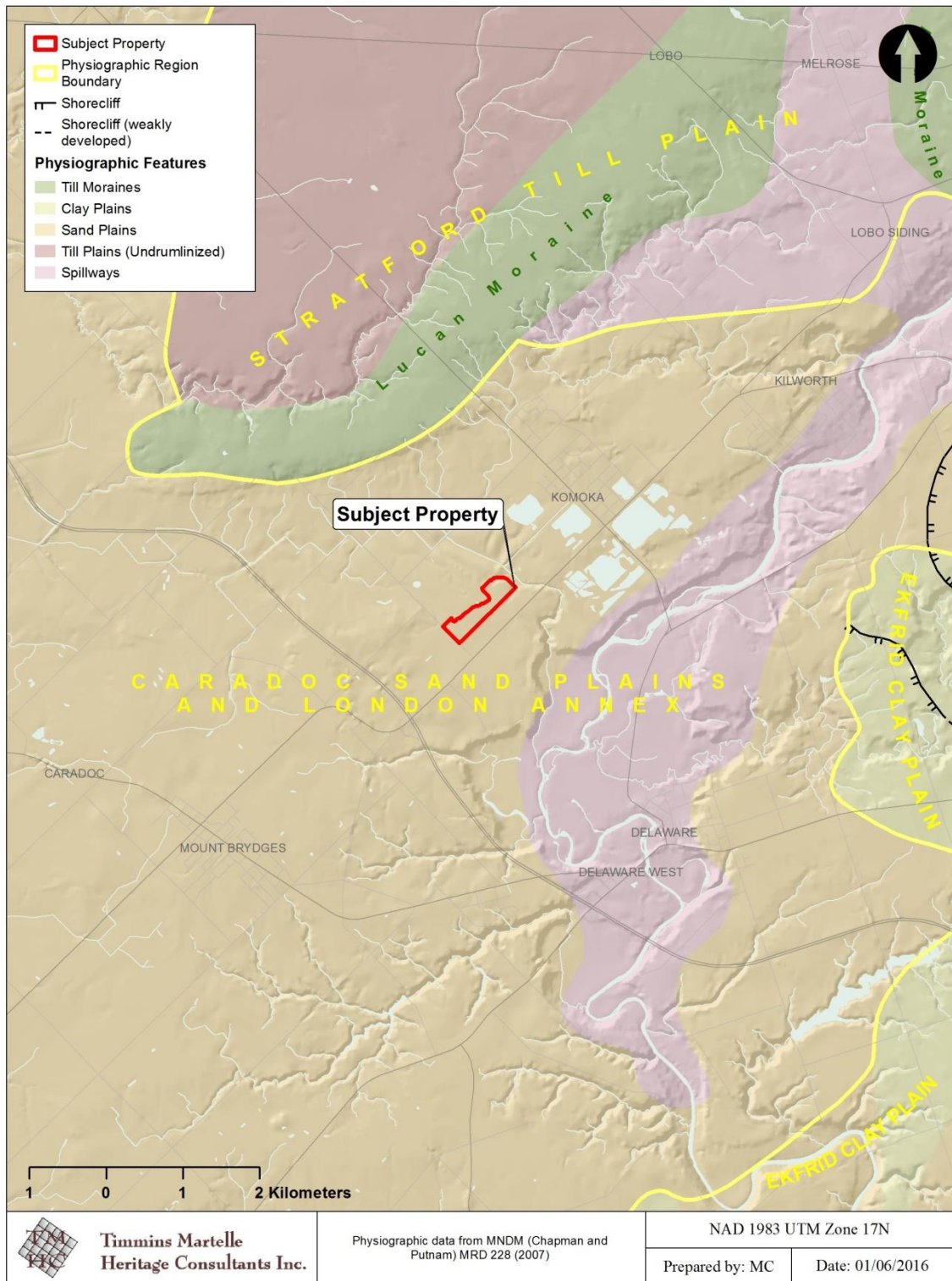
**Map 1: Location of the Subject Property in the Municipality of Middlesex Centre, ON**





**Map 2: Aerial Photograph Showing the Location of the Subject Property in the Municipality of Middlesex Centre, ON**

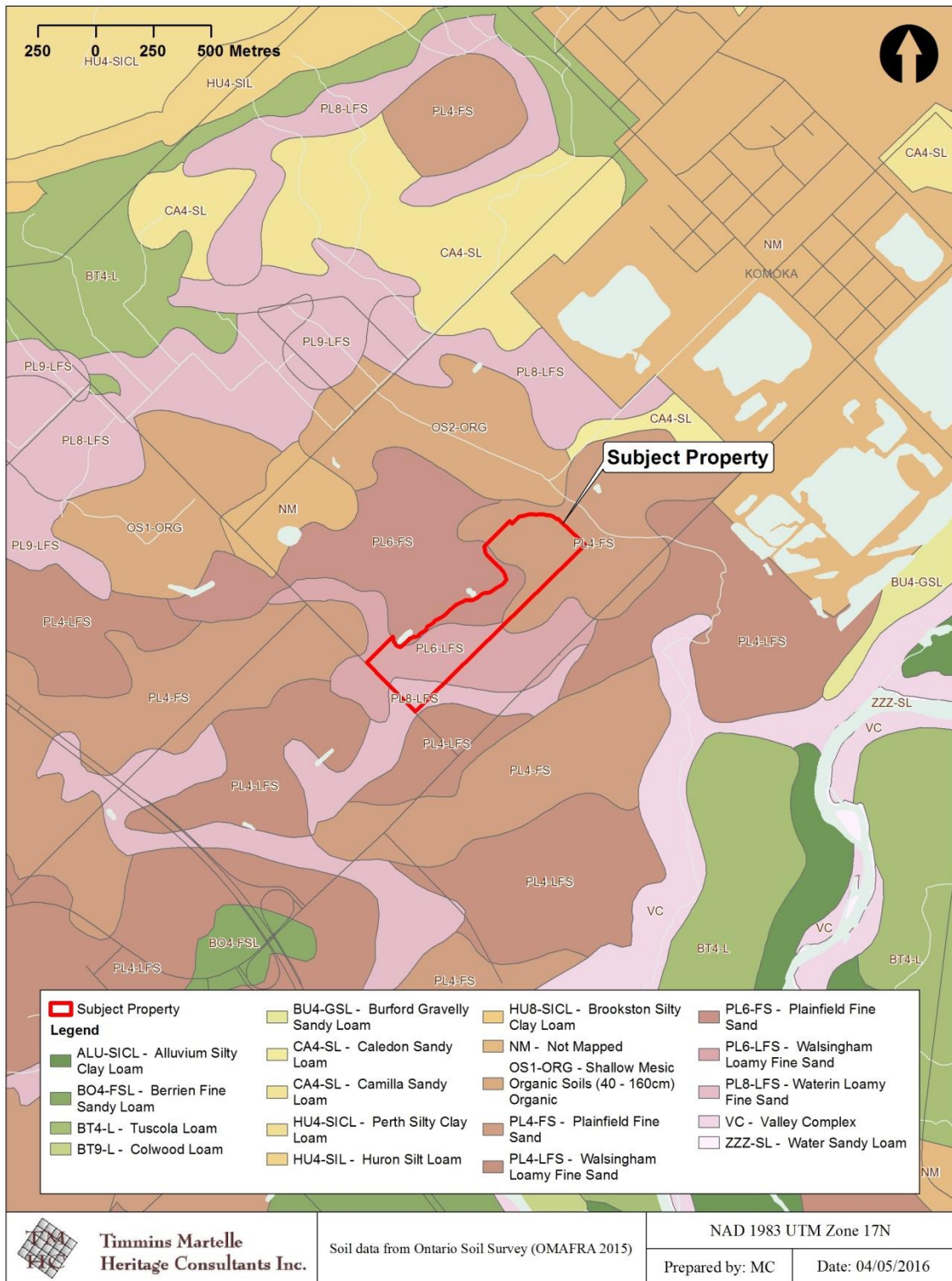




**Map 3: Physiography within the Vicinity of the Subject Property**

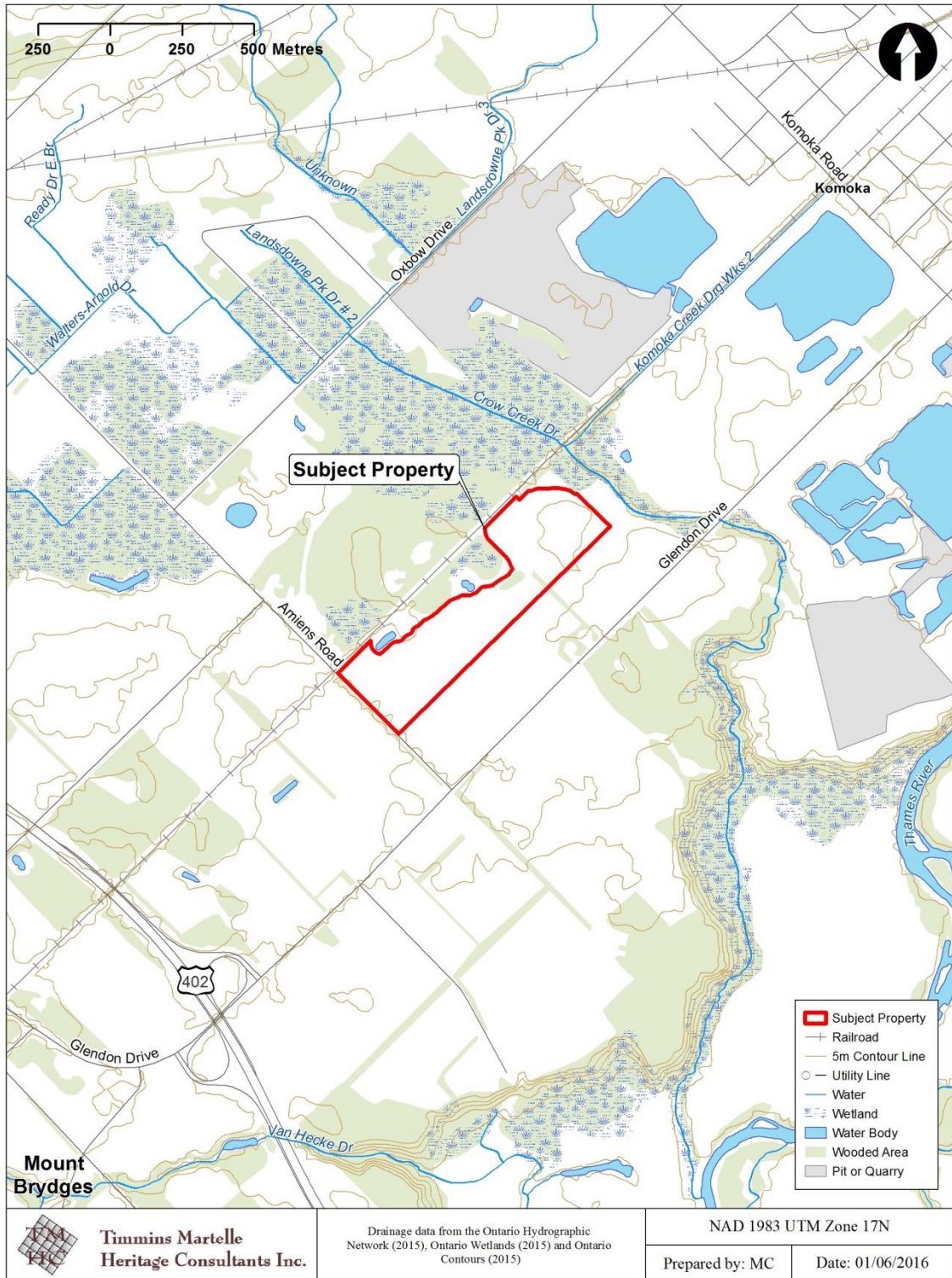






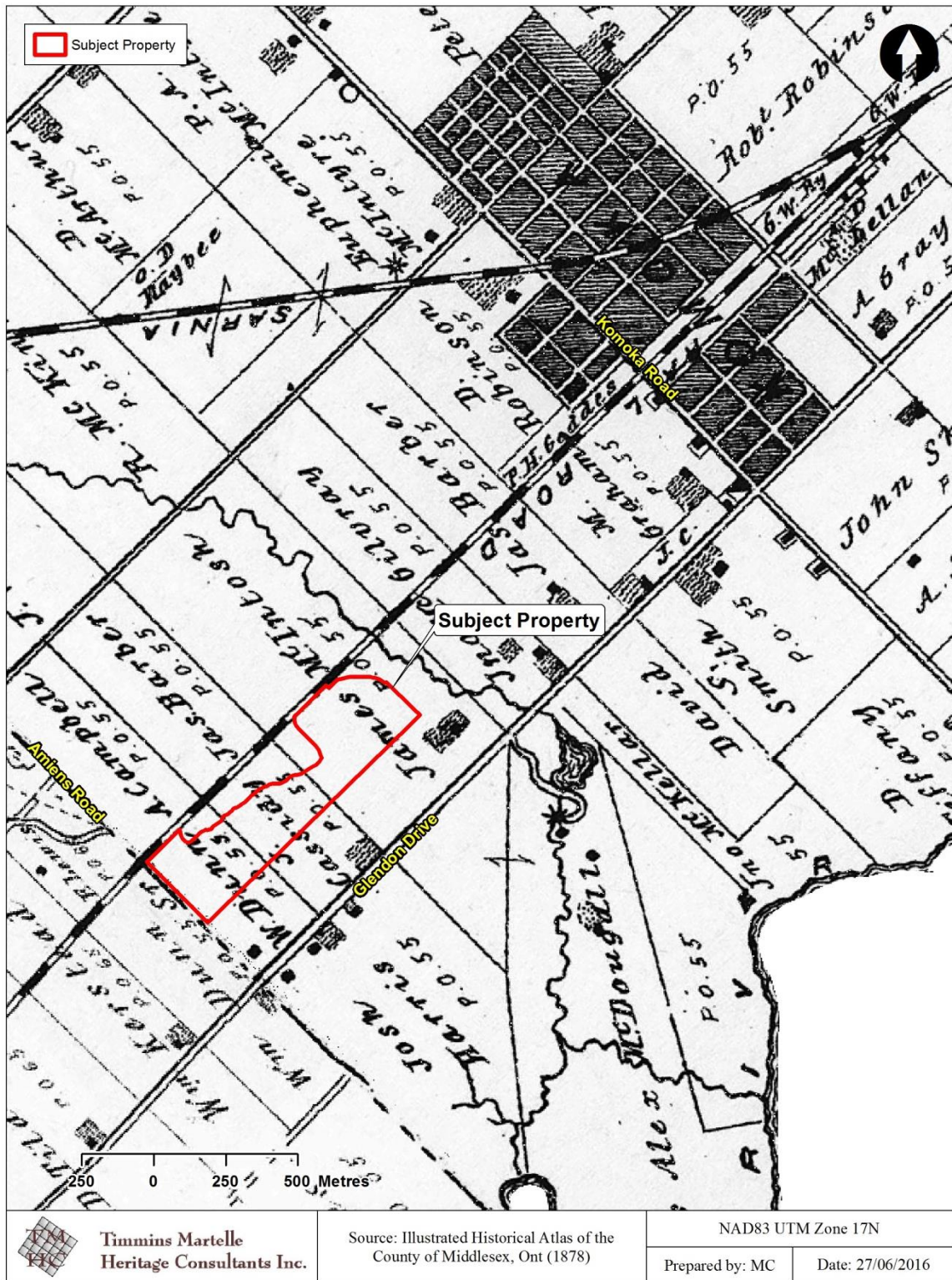
**Map 4: Soils within the Vicinity of the Subject Property**





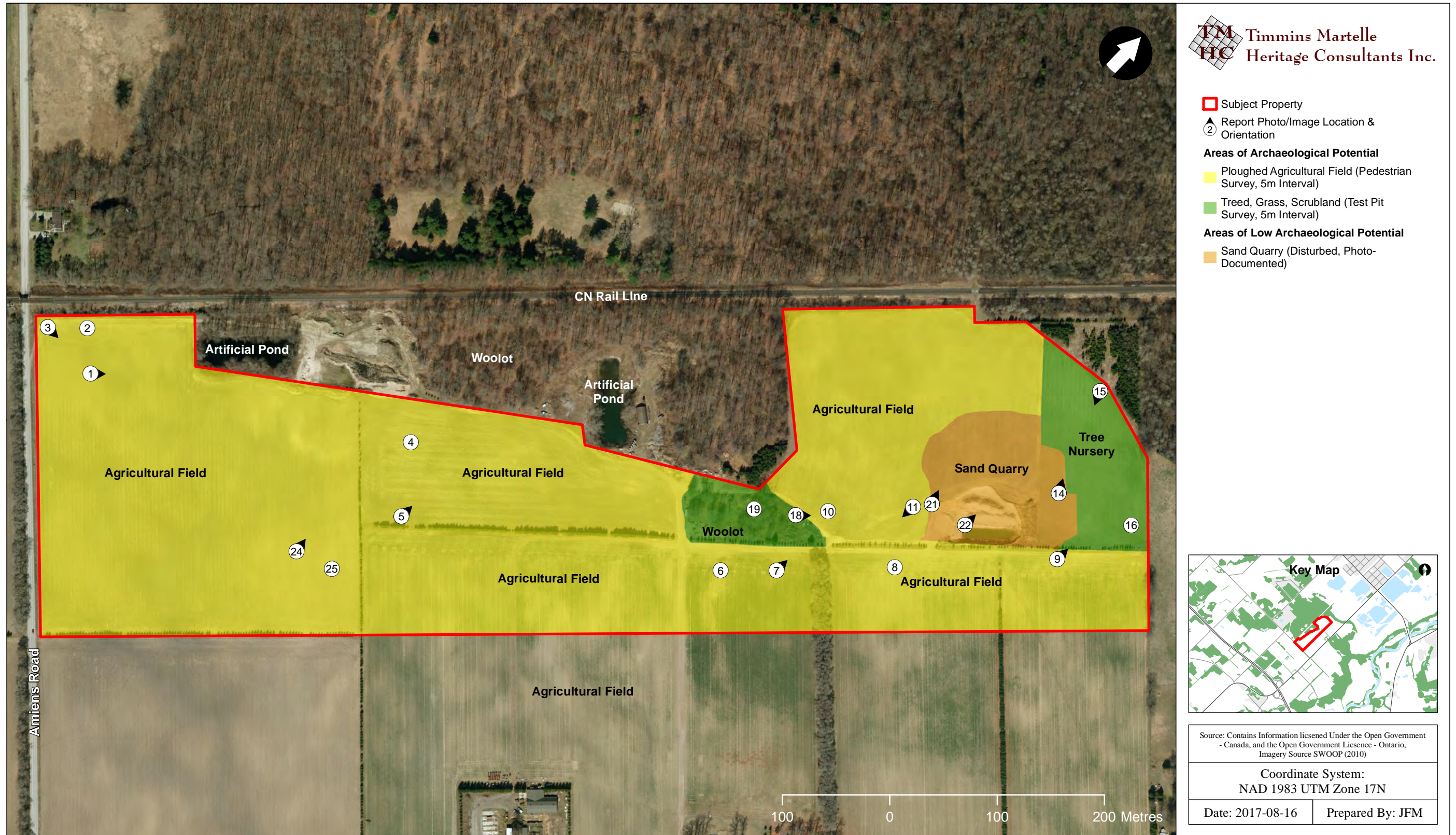
**Map 5: Drainage within the Vicinity of the Subject Property**





Map 6: Location of the Subject Property Shown on the 1878 Map of Lobo Township

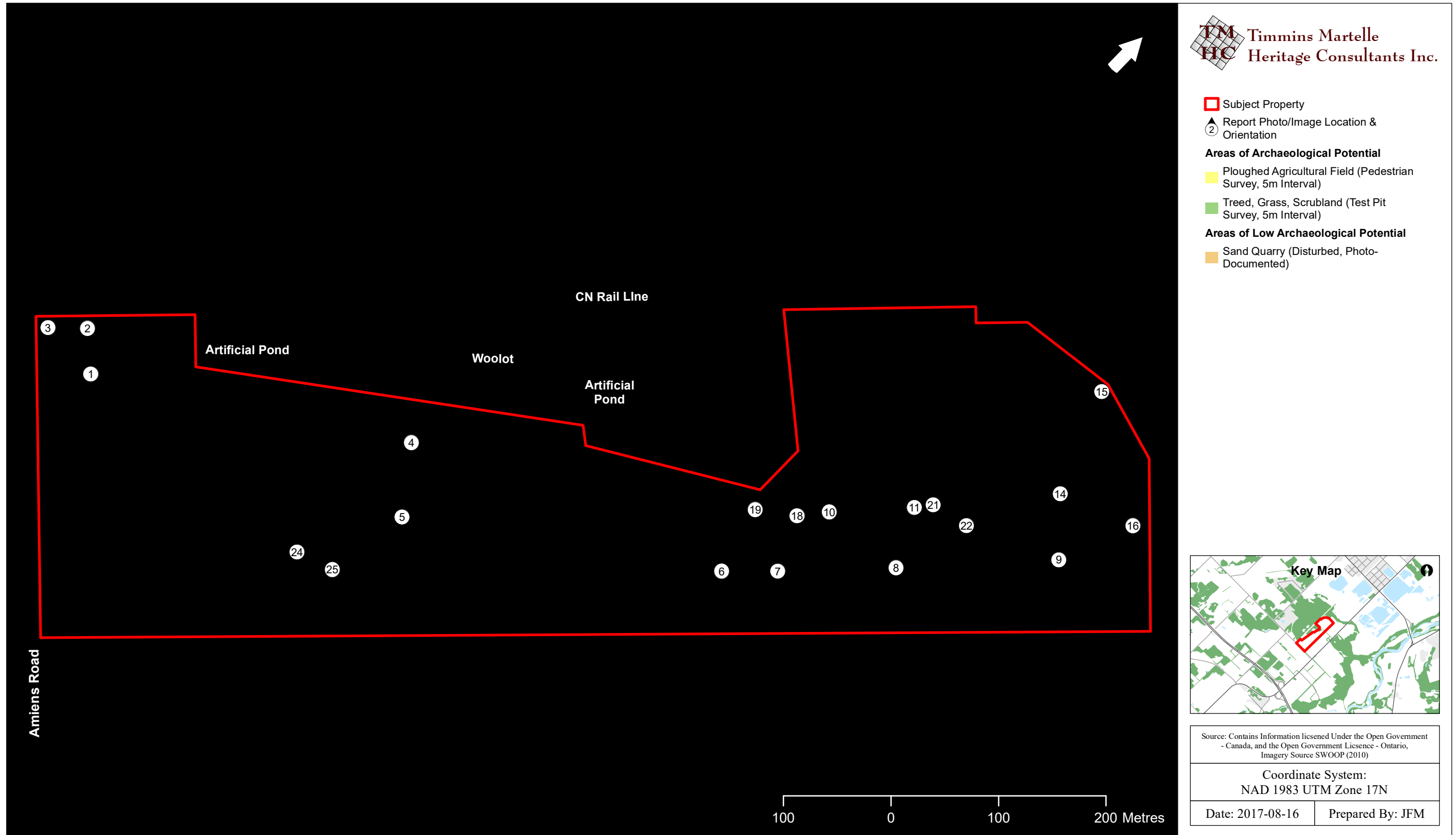




Map 7: Stage 2 Field Conditions and Assessment Methods

Z:\Desktop Mapping\Projects\2016-032 Bradshawe Amiens Pit St. 1-2\Maps\Stage 2\Methods.mxd

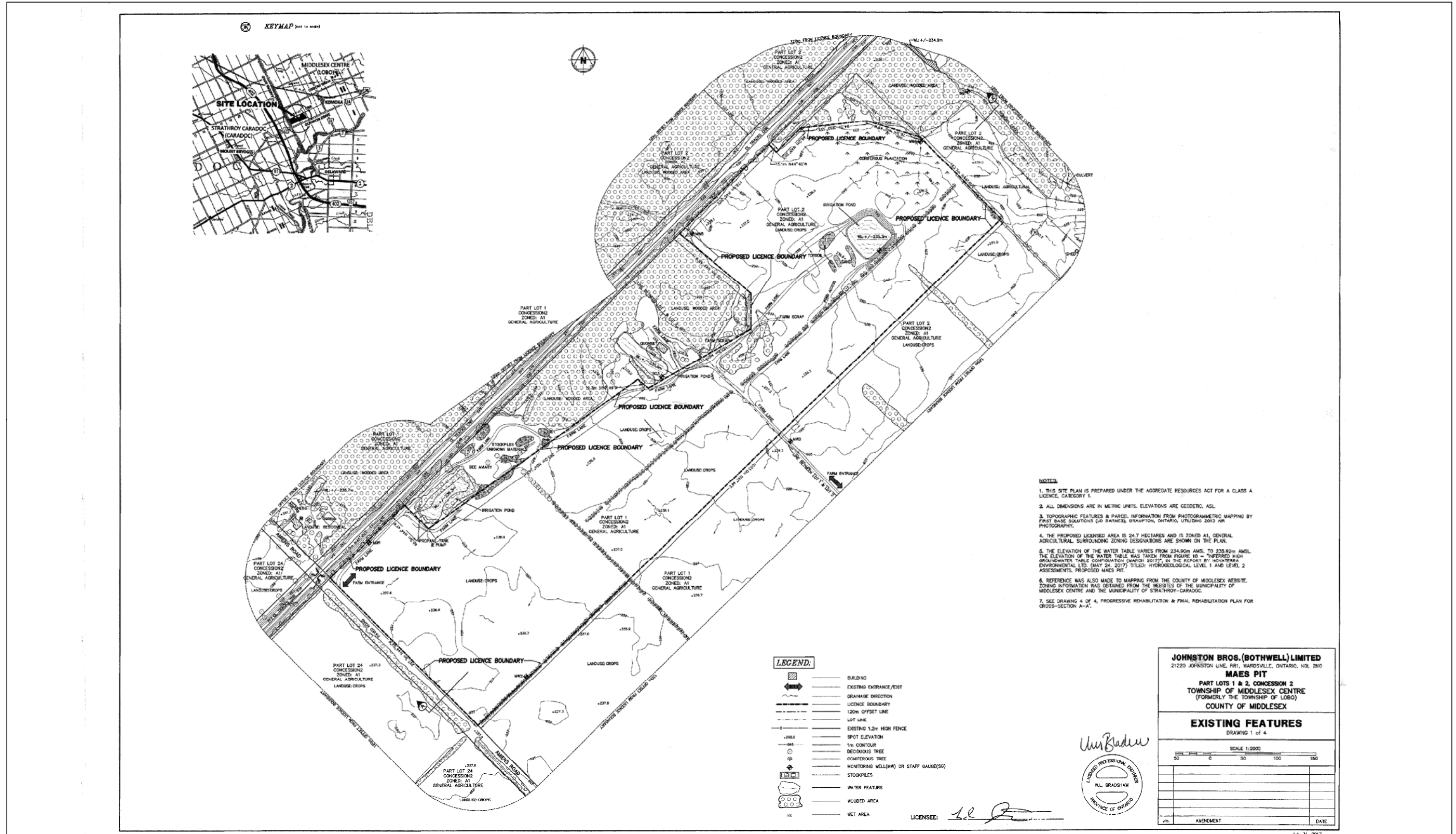




Map 8: Stage 2 Field Conditions and Assessment Methods Shown on Proponent Mapping

Z:\Desktop Mapping\Projects\2016-032 Bradshawe Amiens Pit St. 1-2\Maps\Stage 2\Methods\_Proponent.mxd





Map 9: Proponent Mapping

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**Appendix A: Location 3 Stage 2 Artifact Catalogue**

Cat.	Context	Layer/Depth	Artifact	n	Comments
1	Station 55	surface	projectile point	1	Onondaga; tip fragment
2	Station 56	surface	core	1	Kettle Point; fragment
3	Station 57	surface	scraper	1	Onondaga
4	Station 58	surface	chipping detritus	1	unknown; fragment
5	Station 59	surface	chipping detritus	1	Kettle Point; fragment
6	Station 60	surface	scraper	1	Kettle Point; reworked projectile point
7	Station 61	surface	biface	1	Onondaga; fragment
8	Station 62	surface	uniface	1	Selkirk
9	Station 63	surface	chipping detritus	1	Kettle Point; secondary
10	Station 64	surface	biface	1	Kettle Point
11	Station 65	surface	fragmentary sherd	1	
12	Station 66	surface	notched flake	1	burnt Onondaga
13	Station 67	surface	fragmentary sherd	1	
14	Station 68	surface	chipping detritus	1	Kettle Point; secondary
15	Station 69	surface	fragmentary sherd	1	
16	Station 70	surface	projectile point	1	Onondaga; notched base; missing tip
17	Station 71	surface	projectile point	1	Onondaga; side notched base; missing tip; serrated midsection
18	Station 72	surface	scraper	1	Onondaga; fragment
19	Station 73	surface	biface	1	Onondaga; midsection fragment
20	Station 74	surface	chipping detritus	1	Kettle Point; fragment
21	Station 75	surface	chipping detritus	1	unknown; fragment
22	Station 76	surface	fragmentary sherd	1	
23	Station 77	surface	utilized flake	1	Kettle Point
24	Station 95	surface	chipping detritus	1	Onondaga; fragment
25	Station 1	surface	chipping detritus	1	Kettle Point; secondary
26	Station 2	surface	chipping detritus	1	unknown; fragment
27	Station 3	surface	utilized flake	1	unknown; primary
28	Station 4	surface	retouched flake	1	Kettle Point; secondary
29	Station 5	surface	chipping detritus	1	Kettle Point; secondary
30	Station 6	surface	chipping detritus	1	Selkirk; secondary
31	Station 7	surface	fragmentary sherd, decorated	1	possible decoration
32	Station 7	surface	fragmentary sherd, decorated	1	possible decoration
33	Station 8	surface	chipping detritus	1	Kettle Point; secondary
34	Station 9	surface	chipping detritus	1	Onondaga; primary
35	Station 10	surface	chipping detritus	1	unknown; fragment
36	Station 11	surface	chipping detritus	1	unknown; secondary
37	Station 13	surface	fragmentary sherd	1	
38	Station 14	surface	utilized flake	1	Kettle Point; secondary
39	Station 15	surface	chipping detritus	1	unknown; secondary; burnt?
40	Station 16	surface	projectile point	1	Onondaga; side notched; missing tip
41	Station 17	surface	biface	1	Onondaga; tip fragment
42	Station 19	surface	chipping detritus	1	unknown; fragment
43	Station 20	surface	chipping detritus	1	unknown; fragment
44	Station 21	surface	chipping detritus	1	Onondaga; fragment



Cat.	Context	Layer/Depth	Artifact	n	Comments
45	Station 22	surface	chipping detritus	1	Kettle Point; primary
46	Station 22	surface	chipping detritus	1	Kettle Point; fragment
47	Station 22	surface	chipping detritus	1	Kettle Point; fragment
48	Station 23	surface	biface	1	Selkirk
49	Station 24	surface	biface	1	Kettle Point; fragment
50	Station 25	surface	chipping detritus	1	Kettle Point; shatter
51	Station 26	surface	chipping detritus	1	Onondaga; secondary
52	Station 27	surface	chipping detritus	1	burnt Kettle Point; secondary
53	Station 28	surface	chipping detritus	1	till; secondary
54	Station 30	surface	utilized flake	1	unknown; secondary
55	Station 31	surface	utilized flake	1	burnt Kettle Point; secondary
56	Station 32	surface	retouched flake	1	Onondaga; secondary
57	Station 33	surface	chipping detritus	1	Haldimand; fragment
58	Station 34	surface	chipping detritus	1	Kettle Point; fragment
59	Station 35	surface	chipping detritus	1	Haldimand; secondary
60	Station 36	surface	projectile point	1	Haldimand; nearly complete
61	Station 37	surface	chipping detritus	1	Onondaga; secondary
62	Station 38	surface	chipping detritus	1	Kettle Point; secondary
63	Station 39	surface	chipping detritus	1	Haldimand; secondary
64	Station 40	surface	wedge	1	burnt
65	Station 41	surface	chipping detritus	1	unknown; secondary
66	Station 42	surface	chipping detritus	1	unknown; secondary
67	Station 43	surface	chipping detritus	1	unknown; fragment
68	Station 44	surface	chipping detritus	1	Onondaga?; secondary
69	Station 45	surface	biface	1	Onondaga
70	Station 46	surface	biface	1	Flint Ridge
71	Station 47	surface	chipping detritus	1	Kettle Point; shatter
72	Station 48	surface	chipping detritus	1	till; fragment
73	Station 49	surface	chipping detritus	1	till; secondary
74	Station 50	surface	chipping detritus	1	unknown; fragment
75	Station 51	surface	chipping detritus	1	till; fragment
76	Station 52	surface	chipping detritus	1	Haldimand; secondary
77	Station 53	surface	chipping detritus	1	unknown; shatter
78	Station 54	surface	chipping detritus	1	Onondaga; secondary
79	Station 55	surface	chipping detritus	1	Haldimand; secondary
80	Station 56	surface	chipping detritus	1	Haldimand; fragment
81	Station 57	surface	chipping detritus	1	Kettle Point?; fragment
82	Station 58	surface	retouched flake	1	Haldimand; fragment
83	Station 59	surface	scraper	1	burnt Onondaga
84	Station 60	surface	fragmentary sherd, decorated	1	
85	Station 61	surface	chipping detritus	1	Onondaga; fragment
86	Station 62	surface	chipping detritus	1	Kettle Point; secondary
87	Station 63	surface	projectile point	1	Kettle Point; corner notched; complete
88	Station 64	surface	chipping detritus	1	burnt; secondary
89	Station 65	surface	utilized flake	1	Kettle Point; fragment
90	Station 65	surface	chipping detritus	1	Kettle Point; fragment
91	Station 66	surface	chipping detritus	1	Kettle Point; secondary
92	Station 67	surface	retouched flake	1	Kettle Point; secondary





Cat.	Context	Layer/Depth	Artifact	n	Comments
93	Station 68	surface	chipping detritus	1	Onondaga; secondary
94	Station 69	surface	chipping detritus	1	Kettle Point; secondary
95	Station 69	surface	chipping detritus	1	Kettle Point; secondary
96	Station 70	surface	chipping detritus	1	unknown; fragment
97	Station 71	surface	chipping detritus	1	Kettle Point; secondary
98	Station 72	surface	chipping detritus	1	Onondaga; secondary
99	Station 73	surface	chipping detritus	1	Onondaga; secondary
100	Station 74	surface	chipping detritus	1	burnt Kettle Point; secondary
101	Station 75	surface	chipping detritus	1	Kettle Point; secondary
102	Station 76	surface	chipping detritus	1	Kettle Point; shatter
103	Station 77	surface	chipping detritus	1	Onondaga; fragment
104	Station 78	surface	chipping detritus	1	till; fragment
105	Station 79	surface	chipping detritus	1	Flint Ridge; secondary
106	Station 79	surface	chipping detritus	1	till; secondary
107	Station 79	surface	chipping detritus	1	till; fragment
108	Station 80	surface	chipping detritus	1	burnt Kettle Point; secondary
109	Station 81	surface	chipping detritus	1	Kettle Point; secondary
110	Station 82	surface	retouched flake	1	Onondaga; fragment
111	Station 83	surface	chipping detritus	1	Kettle Point; fragment
112	Station 84	surface	retouched flake	1	Onondaga; primary
113	Station 85	surface	retouched flake	1	Onondaga; secondary
114	Station 86	surface	scraper	1	Onondaga
115	Station 88	surface	chipping detritus	1	unknown; secondary
116	Station 89	surface	chipping detritus	1	Onondaga; secondary
117	Station 90	surface	chipping detritus	1	Onondaga; fragment
118	Station 91	surface	fragmentary sherd	1	
119	Station 92	surface	body sherd	1	
120	Station 93	surface	chipping detritus	1	Onondaga; secondary
121	Station 94	surface	utilized flake	1	Haldimand; secondary
122	Station 95	surface	chipping detritus	1	unknown; fragment
123	Station 96	surface	chipping detritus	1	Onondaga; secondary
124	Station 97	surface	chipping detritus	1	Onondaga; fragment
125	Station 98	surface	chipping detritus	1	Onondaga?; secondary
126	Station 99	surface	chipping detritus	1	Onondaga; secondary
127	Station 100	surface	chipping detritus	1	unknown; fragment
128	Station 101	surface	biface	1	Onondaga; fragment
	Station 12	surface	natural		discarded
	Station 18	surface	natural		discarded
	Station 29	surface	natural		discarded
	Station 87	surface	natural		discarded
			<b>Total</b>	<b>128</b>	



**Appendix B: Location 4 Stage 2 Artifact Catalogue**

Cat.	Context	n	Material	Class	Object	Datable Attribute	Comment
1	surface	1	Ceramic	Architectural	Int. insulator	Porcelain	incomplete
2	surface	1	Ceramic	Activities	Flower pot	C red EW, unglazed	
3	surface	1	Ceramic	Food & Bev.	Flatware	Porcelain	
4	surface	3	Ceramic	Food & Bev.	Flatware	Semiporcelain, transfer	blue Willow
5	surface	1	Ceramic	Food & Bev.	Hollowware	RWE or semiporcelain	blue transfer print, small rim sherd
6	surface	1	Ceramic	Food & Bev.	Hollowware	Unid. white EW	blue décor
7	surface	1	Ceramic	Food & Bev.	Tableware	RWE, transfer	brown
8	surface	1	Ceramic	Food & Bev.	Tea cup	Refined White EW	
9	surface	3	Ceramic	Food & Bev.	Tableware	Ironstone	misc. sherds
10	surface	2	Ceramic	Food & Bev.	Tableware	Semiporcelain	misc. sherds
11	surface	1	Ceramic	Food & Bev.	Tableware	Unid. white EW	yellowish glaze
12	surface	1	Ceramic	Food & Bev.	Hollowware	C red EW, glazed	white-slipped int., clear glaze
13	surface	1	Composite	Activities	Spark plug	20th Century	ceramic and metal, marked in red CHAMPION H-10 MADE IN CANADA REG. IN CANADA
14	surface	1	Zinc	Unassigned material	Misc. metal	Unknown	
15	surface	1	Glass	Unknown	Unid. container glass	Manganese decoloured	
16	surface	2	Glass	Food & Bev.	Pop bottle	Machine made	bright green
17	surface	2	Glass	Unknown	Unid. container glass	Machine made	cobalt blue
18	surface	1	Glass	Unknown	Unid. container glass	Unknown	cobalt blue
19	surface	1	Glass	Unknown	Unid. container glass	Unknown	aqua
20	surface	1	Glass	Food & Bev.	Handle	Opaque white	
21	surface	9	Glass	Food & Bev.	Glassware	Opaque white	misc. sherds, some may be utilized
22	surface	5	Glass	Architectural	Pane glass	Not applicable	
23	surface	1	Glass	Unknown	Unknown	Unknown	aqua, possible thick pane glass
24	surface	2	Glass	Unknown	Unid. container glass	Machine made	colourless
25	surface	4	Glass	Food & Bev.	Glassware	Machine made	colourless, misc. sherds
26	surface	1	Glass	Modified	Utilized window	Unknown	max L 32.65mm, W 26.23mm, T 2.98mm utilized one two edges: a) 16.70mm long, concave; b) 9.69mm long, concave
27	surface	1	Glass	Modified	Utilized window	Unknown	triangular, max L 25.46mm, W 16.49mm, T 2.16mm, utilized on one short edge, 17.68mm long, concave
28	surface	1	Glass	Modified	Utilized glass	Opaque white	max L 21.48mm, W 20.40mm, T 2.07mm, utilized on one short edge, 11.23mm long, straight



Cat.	Context	n	Material	Class	Object	Datable Attribute	Comment
29	surface	1	Glass	Modified	Utilized container	Machine made	colourless, max L 35.56mm, W 29.62mm, T 3.63mm, utilized on one long edge, 24.20mm long, straight
30	surface	1	Glass	Modified	Utilized container	Machine made	colourless, max L 44.02mm, W 24.62mm, T 3.84mm, utilized on one long edge at corner, 14.56mm long, straight
31	surface	1	Glass	Modified	Utilized glassware	Machine made	colourless, max L 57.13mm, W 32.99mm, T 7.86mm, utilized on two long edges: a) 23.66mm long, straight to rim; b) 24.56mm, irregular
32	surface	1	Chert	Native	BIF	Unknown	Kettle Point chert, fragment
<b>Total</b>	<b>55</b>						

