1.0 PROJECT REPORT COVER PAGE

LICENSEE INFORMATION:

Contact Information:	Michael B. Henry CD BA FRAI FRSA Marilyn E. Cornies BA CAHP Southwestern District Office 553 Dufferin Avenue London, ON N6B 2A5 Phone: (519) 432-4435 Email: mhenry@amick.ca/mcornies@amick.ca www.amick.ca
Licensee:	Michael B. Henry CD BA FRAI FRSA
Ontario Archaeology Licence:	P058

PROJECT INFORMATION:

Corporate Project Number:	18569
MTCS Project Number:	P058-1717-2018
Investigation Type:	Stage 1 Archaeological Background Assessment
Project Name:	Mountain Road.
Project Location:	Part of Lot 45, Concession 11 (Geographic Township of Nottawasaga), Town of Collingwood, County of Simcoe
Project Designation Number:	Not Currently Available

MTCS FILING INFORMATION:

Site Record/Update Form(s):	N/A
Date of Report Filing:	TBD
Type of Report:	**ORIGINAL**

2.0 EXECUTIVE SUMMARY

This report describes the results of the 2018 Stage 1 Archaeological Background Assessment of Part of Lot 45, Concession 11 (Geographic Township of Nottawasaga), Town of Collingwood, County of Simcoe, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P058 issued to Michael Henry by the Minister of Tourism, Culture and Sport for the Province of Ontario. This assessment was undertaken as a requirement under the Planning Act (RSO 1990) and the Provincial Policy Statement (2014) in order to support a Draft Plan of Subdivision, an Official Plan amendment and companion Zoning By-law Amendment application as part of the pre-submission process. Within the land use planning and development context, Ontario Regulation 544/06 under the Planning Act (1990b) requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Tourism, Culture and Sport (MTCS). Policy 2.6 of the Provincial Policy Statement (PPS 2014) addresses archaeological resources. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Study of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation on 30 September 2018. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTCS) on behalf of the government and citizens of Ontario.

STAGE 1 RECOMMENDATIONS:

The study area has been identified as a property where at least part of it exhibits potential to yield archaeological deposits of Cultural Heritage Value or Interest (CHVI). The sections of the study area that demonstrate archaeological potential are illustrated in Maps 7&8. The objectives of the Stage 1 Background Study have therefore been met and in accordance with the results of this investigation, the following recommendations are made:

1. *Further archaeological assessment of the study area is warranted;*
2. *The Provincial interest in archaeological resources with respect to the proposed undertaking remains to be addressed;*
3. *At least part of the proposed undertaking has a potential for archaeological resources and a Stage 2 Archaeological Assessment is recommended for these areas;*
4. *A pedestrian survey at an interval of 5 metres between individual transects is recommended for any areas with archaeological potential where ploughing is*

viable. In the areas where ploughing is viable, the land can be prepared by mowing the existing grass, clearing brush and cutting trees down to surface level to prepare for ploughing;

5. *A test pit survey at 5 metre intervals between individual test pits is recommended in all areas that hold archaeological potential that are not viable to be ploughed and are at a less than (<) 20 degree change in elevation;*

3.0 TABLE OF CONTENTS

4.0 PROJECT PERSONNEL

AMICK CONSULTANTS LIMITED PARTNERS
Michael Henry (MTCS Professional Archaeologist Licence #P058)
Marilyn Cornies (MTCS Professional Archaeologist Licence #P038)

AMICK CONSULTANTS LIMITED BUSINESS MANAGER
Melissa Maclean BBA email mmaclean@amick.ca

PROJECT COORDINATOR
Melissa Maclean

PROJECT LICENSEE ARCHAEOLOGIST
Michael Henry (MTCS Professional Archaeologist Licence #P058)

PROJECT FIELD DIRECTORS
Michael Henry (MTCS Professional Archaeologist Licence #P058)
Marilyn Cornies (MTCS Professional Archaeologist Licence #P038)

PROJECT REPORT PREPARATION
Nick Kaluzny

PROJECT GRAPHICS
Nick Kaluzny

PROJECT PHOTOGRAPHY
Michael Henry (MTCS Professional Archaeologist Licence #P058)

5.0 PROJECT CONTEXT

5.1 DEVELOPMENT CONTEXT

This report describes the results of the 2018 Stage 1 Archaeological Background Assessment of Part of Lot 45, Concession 11 (Geographic Township of Nottawasaga), Town of Collingwood, County of Simcoe, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P058 issued to Michael Henry by the Minister of Tourism, Culture and Sport for the Province of Ontario. This assessment was undertaken as a requirement under the Planning Act (RSO 1990) and the Provincial Policy Statement (2014) in order to support a Draft Plan of Subdivision, an Official Plan amendment and companion Zoning By-law Amendment application as part of the pre-submission process. Within the land use planning and development context, Ontario Regulation 544/06 under the Planning Act (1990b) requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Tourism, Culture and Sport (MTCS). Policy 2.6 of the Provincial Policy Statement (PPS 2014) addresses archaeological resources. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Study of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation on 30 September 2018. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTCS) on behalf of the government and citizens of Ontario.

The proposed development of the study area includes 122 single detached residential units, 74 townhouse units, 458 stacked townhouse units, 56 back to back townhouse units, 4 4-storey apartment blocks with a total of 219 units, a park, a stormwater management pond and four streets to access all of these units. A preliminary plan of the proposed development has been submitted together with this report to MTCS for review and reproduced within this report as Map 4.

5.2 HISTORICAL CONTEXT

5.2.1 GENERAL HISTORICAL OUTLINE

In the seventeenth century Simcoe County was home to the Huron. With the arrival of French priests and Jesuits, missions were established near Georgian Bay. After the destruction of the missions by the Iroquois and the British, Algonquin speaking peoples occupied the area.

After the war of 1812, the government began to invest in the military defences of Upper Canada, through the extension of Simcoe's Yonge Street from Lake Simcoe to Penetanguishene on Georgian Bay (Garbutt 2010).

Thomas Kelly first surveyed the Township of Nottawasaga in 1832 and Charles Rankin continued this work in 1833. By 1834 settlers had already begun to take up land within the Township's borders. H.C. Yong was appointed the local immigrant agent in 1834, and by this time there was already 3 settlements, Duntroon which was settled by the Highland Scotch, a Irish Catholic settlement on the forth line and a small German settlement close to Batteau. The first settlers in the area began to settle in the Sunnidale area, however due to poor conditions due to marshy characteristics of the area within 2 years the settlers moved west. The major settlements within the township are Duntroon, Stayner, Collingwood, Nottawa, Creemore and Batteau (Hunter 2010).

Map 2 is a facsimile segment from Hogg's Map of the County of Simcoe (Hogg 1871). Map 2 illustrates the location of the study area and environs as of 1871. The study area is shown to belong to W. Miller; there are no structures within or near to the study area. This map does depict two settlement roads as adjacent to the study area to the south and east. These roads are the current Mountain Road and Tenth Line, respectively.

Map 3 is a facsimile segment of the Township of Nottawasaga map reproduced from The Simcoe Supplement in Illustrated Atlas of the Dominion of Canada (Belden, H. & Co. 1881). Map 3 illustrates the location of the study area and environs as of 1881. The study area is not shown to belong to anyone and there are no structures within or near to the study area. This map does depict two settlement roads as adjacent to the study area to the south and east. These roads are the current Mountain Road and Tenth Line, respectively.

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

5.2.2 CURRENT CONDITIONS

The present use of the study area is as an empty lot. The study area is roughly 20.67 hectares in area. The study area includes within it mostly brush and small tree stands. A gravel lane enters the study area from the south toward the centre, before looping back on itself to form a small circuit. In many places the gravel lane may be narrow enough to not affect the test pitting grid. Adjacent to the land are multiple derelict vehicles, piles of equipment and piles of landscaping stone. It is possible to complete a test pit survey around these objects without much interference of the survey grid. A steep ridge is in the eastern part of the study area, stretching across the study area. To the west of the gravel lanes is an area of open field where the vegetation is sparse enough that it can be mowed and have the vegetation removed before

ploughing and disking. The remainder of the study area is scrub and tree stands that will require test pitting. The study area is bounded on the north by open field, on the east by the Tenth Line, on the west by woodlot and on the south by Mountain Road. The study area is adjacent and to the northwest of the intersection of the Tenth Line and Mountain Road. A plan of the study area is included within this report as Map 4. Current conditions encountered during the Stage 1 Archaeological Background Assessment are illustrated in Maps 5 & 6.

5.2.3 SUMMARY OF HISTORICAL CONTEXT

The brief overview of readily available documentary evidence indicates that the study area is situated within an area that was close to historic transportation routes.

5.3 ARCHAEOLOGICAL CONTEXT

The Archaeological Sites Database administered by the Ministry of Tourism, Culture and Sport (MTCS) indicates that there are three (3) previously documented sites within 1 kilometre of the study area. However, it must be noted that this is based on the assumption of the accuracy of information compiled from numerous researchers using different methodologies over many years. AMICK Consultants Limited assumes no responsibility for the accuracy of site descriptions, interpretations such as cultural affiliation, or location information derived from the Archaeological Sites Database administered by MTCS. In addition, it must also be noted that a lack of formerly documented sites does not indicate that there are no sites present as the documentation of any archaeological site is contingent upon prior research having been conducted within the study area.

Background research shows that one (1) previous study has taken place within 50m of the study area. For further information see:

Archaeological Services Inc. (2003). *Stage 1-2 Archaeological Assessment for Part of Lot 44 & 45, Conc. 11, Proposed Mair Mills Subdivision (Cw-T-0201), Town of Collingwood, County of Grey, Ontario*.

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

> *"Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area,* ***as documented by all available reports that include archaeological fieldwork carried out on the lands to be impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50 m) to those lands****."*
>
> (MTCS 2011: 126 Emphasis Added)

In accordance with data supplied by MTCS for the purposes of completing this study, the above cited report does not detail, *"archaeological fieldwork carried out on the lands to be impacted by this project"*, nor does it document known archaeological sites within 50 metres of the study area.

The Standards and Guidelines for Consultant Archaeologists stipulates that the necessity to summarize the results of previous archaeological assessment reports, or to cite MTCS File Numbers in references to other archaeological reports, is reserved for reports that are directly relevant to the fieldwork and recommendations for the study area (S & Gs 7.5.7, Standard 2, MTC 2011: 125). This is further refined and elaborated upon in Section 7.5.8, Standards 4 & 5, MTC 2011:

> *"4. Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area, as documented by all available* ***reports that include archaeological fieldwork carried out on the lands to be impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50m) to those lands."***
>
> *"5.* ***If previous findings and recommendations are relevant*** *to the current stage of work, provide the following:*
>
> a. *a brief summary of previous findings and recommendations*
> b. *documentation of any differences in the current work from the previously recommended work*
> c. *rationale for the differences from the previously recommended work"*
>
> ***(Emphasis Added)***

The above-noted report does not have any relevance to the lands to be potentially impacted by the proposed undertaking, does not include fieldwork or recommendations relevant to the study area, and does not document any sites within 50 metres of the study area. Therefore, there is no requirement to include any summary data for the previous report.

The study area is situated in area for which there is no archaeological master plan.

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

5.3.1 PRE-CONTACT REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MTCS. As a result it was determined that there are no (0) archaeological sites relating directly to Pre-contact habitation/activity formally registered within the immediate vicinity of the study area. However, the lack of formally documented archaeological sites does not mean that Pre-

contact people did not use the area; it more likely reflects a lack of systematic archaeological research in the immediate vicinity. Even in cases where one or more assessments may have been conducted in close proximity to a proposed landscape alteration, an extensive area of physical archaeological assessment coverage is required throughout the region to produce a representative sample of all potentially available archaeological data in order to provide any meaningful evidence to construct a pattern of land use and settlement in the past.

There are also no natural surface water features within 300 metres of the study area.

Table 1 illustrates the chronological development of cultures within southern Ontario prior to the arrival of European cultures to the area at the beginning of the 17th century. This general cultural outline is based on archaeological data and represents a synthesis and summary of research over a long period of time. It is necessarily generalizing and is not necessarily representative of the point of view of all researchers or stakeholders. It is offered here as a rough guideline and as a very broad outline to illustrate the relationships of broad cultural groups and time periods.

TABLE 1 PRE-CONTACT CULTURAL CHRONOLOGY FOR SOUTHERN ONTARIO

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

5.3.2 POST-CONTACT REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MTCS. As a result it was determined that three (3) archaeological sites relating directly to Post-contact habitation/activity had been formally registered within the immediate vicinity of the study area. All previously registered Post-contact sites are briefly described below in Table 2:

TABLE 2 POST-CONTACT SITES WITHIN 1KM

Site Name	Borden #	Site Type	Cultural Affiliation
Cunningham	BcHb-51	Homestead	Post-Contact
Kells	BcHb-52	Homestead	Post-Contact

	BdHb-5	Homestead	Post-Contact

One of the above noted archaeological sites (BcHb-51) is situated within 300 metres of the study area. Therefore, it demonstrates archaeological potential for further archaeological resources related to Post-Contact activity and occupation with respect to the archaeological assessment of the proposed undertaking.

5.3.3 Location and Current Conditions

The study area is described as Part of Lot 45, Concession 11 (Geographic Township of Nottawasaga), Town of Collingwood, County of Simcoe, conducted by AMICK Consultants Limited. This assessment was undertaken as a requirement under the Planning Act (RSO 1990) and the Provincial Policy Statement (2014) in order to support a Site Plan application and companion Zoning By-law Amendment application as part of the pre-submission process.

The present use of the study area is as an empty lot. The study area is roughly 20.67 hectares in area. The study area includes within it mostly brush and small tree stands. A gravel lane enters the study area from the south toward the centre, before looping back on itself to form a small circuit. In many places the gravel lane may be narrow enough to not affect the test pitting grid. Adjacent to the land are multiple derelict vehicles, piles of equipment and piles of landscaping stone. It is possible to complete a test pit survey around these objects without much interference of the survey grid. A steep ridge is in the eastern part of the study area, stretching across the study area. To the west of the gravel lanes is an area of open field where the vegetation is sparse enough that it can be mowed and have the vegetation removed before ploughing and disking. The remainder of the study area is scrub and tree stands that will require test pitting. The study area is bounded on the north by open field, on the east by the Tenth Line, on the west by woodlot and on the south by Mountain Road. The study area is adjacent and to the northwest of the intersection of the Tenth Line and Mountain Road. A plan of the study area is included within this report as Map 4. Current conditions encountered during the Stage 1 Archaeological Background Assessment are illustrated in Maps 5 & 6.

5.3.4 Physiographic Region

The study area is situated within the Simcoe Lowlands physiographic region. For the most part, at one time, this restricted basin was part of the floor of glacial Lake Algonquin, and its surface beds are deposits of deltaic and lacustrine origin, and not glacial outwash. As a small basin shut in by the Edenvale Moraine, the Minesing flats represent an annex of the glacial Lake Nipissing plains. (Chapman and Putnam 1984: 177-182).

5.3.5 Surface Water

Sources of potable water, access to waterborne transportation routes, and resources associated with watersheds are each considered, both individually and collectively to be the

highest criteria for determination of the potential of any location to support extended human activity, land use, or occupation. Accordingly, proximity to water is regarded as the primary indicator of archaeological resource potential. The Standards and Guidelines for Consultant Archaeologists stipulates that undisturbed lands within 300 metres of a water source are considered to have archaeological potential (MTC 2011: 21).

There are no natural surface water features within 300 metres of the study area.

5.3.6 CURRENT PROPERTY CONDITIONS CONTEXT

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

5.3.6.1 BUILDINGS AND STRUCTURAL FOOTPRINTS

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

The study area contains no buildings or structural footprints.

5.3.6.2 DISTURBANCE

Areas that have been subjected to extensive and deep land alteration that has severely damaged the integrity of archaeological resources are known as land disturbances. Examples of land disturbances are areas of past quarrying, major landscaping, and sewage and infrastructure development (MTC 2011: 18), as well as driveways made of gravel or asphalt or concrete, in-ground pools, and wells or cisterns. Surfaces paved with interlocking brick, concrete, asphalt, gravel and other surfaces meant to support heavy loads or to be long wearing hard surfaces in high traffic areas, must be prepared by the excavation and removal

of topsoil, grading, and the addition of aggregate material to ensure appropriate engineering values for the supporting matrix and also to ensure that the installations shed water to avoid flooding or moisture damage. All hard surfaced areas are prepared in this fashion and therefore have no or low archaeological potential. Major utility lines are conduits that provide services such as water, natural gas, hydro, communications, sewage, and others. These major installations should not be confused with minor below ground service installations not considered to represent significant disturbances removing archaeological potential, such as services leading to individual structures which tend to be comparatively very shallow and vary narrow corridors. Areas containing substantial and deeply buried services or clusters of below ground utilities are considered areas of disturbance, and may be excluded from Stage 2 Property Assessment. Disturbed areas are excluded from Stage 2 Property Assessment due to no or low archaeological potential and often because they are also not viable to assess using conventional methodology.

> *"Earthwork is one of the major works involved in road construction. This process includes excavation, material removal, filling, compaction, and construction. Moisture content is controlled, and compaction is done according to standard design procedures. Normally, rock explosion at the road bed is not encouraged. While filling a depression to reach the road level,* ***the original bed is flattened after the removal of the topsoil.*** *The fill layer is distributed and compacted to the designed specifications. This procedure is repeated until the compaction desired is reached. The* ***fill material should not contain organic elements,*** *and possess a low index of plasticity. Fill material can include gravel and decomposed rocks of a particular size, but should not consist of huge clay lumps. Sand clay can be used. The area is considered to be adequately compacted when the roller movement does not create a noticeable deformation.* ***The road surface finish is reliant on the economic aspects, and the estimated usage."*** *[Emphasis Added]*
>
> (Goel 2013)

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

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

A gravel lane enters the study area from the south toward the centre, before looping back on itself to form a small circuit. In many places the gravel lane may be narrow enough to not affect the test pitting grid. Maps 5 & 6 of this report illustrate the location of this feature.

5.3.6.3 Low-Lying and Wet Areas

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

The study area does not contain low-lying and wet areas.

5.3.6.4 Steep Slope

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

Generally, steep slopes are not assessed because steep slopes are interpreted to have low potential, not due to viability to assess, except in cases where the slope is severe enough to become a safety concern for archaeological field crews. In such cases, the Occupational Health and Safety Act takes precedence as indicated in the introduction to the Standards and Guidelines. AMICK Consultant Limited policy is to assess all slope areas whenever it is safe to do so. Assessment of slopes, except where safety concerns arise, eliminates the invariably subjective interpretation of what might constitute a steep slope in the field. This is done to minimize delays due to conflicts in such interpretations and to increase the efficiency of review.

A steep ridge is in the eastern part of the study area, stretching across the study area. Maps 5 & 6 of this report illustrate the location of this feature.

5.3.6.5 Wooded Areas

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

The study area does not contain any wooded areas.

5.3.6.6 Ploughable Agricultural Lands

Areas of current or former agricultural lands that have been ploughed in the past are considered ploughable agricultural lands. Ploughing these lands regularly turns the soil, which in turn brings previously buried artifacts to the surface, which are then easily identified during visual inspection. Furthermore, by allowing the ploughed area to weather

sufficiently through rainfall, soil is washed off of exposed artifacts at the surface and the visibility of artifacts at the surface of recently worked field areas is enhanced markedly. Pedestrian survey of ploughed agricultural lands is the preferred method of physical assessment because of the greater potential for finding evidence of archaeological resources if present.

To the west of the gravel lanes is an area of open field where the vegetation is sparse enough that it can be mowed and have the vegetation removed before ploughing and disking. This area could then undergo pedestrian survey. Maps 5 & 6 of this report illustrate the location of this feature.

5.3.6.7 LAWN, PASTURE, MEADOW

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

The majority of the study area is open field with scrub and small tree stands that cannot be ploughed and will have to undergo test pit survey. Maps 5 & 6 of this report illustrate the locations of these features.

5.3.7 SUMMARY

Background research suggests potential for archaeological resources of Post-contact origins based on proximity to previously registered archaeological sites of Post-contact origins, and proximity to a historic roadway.

Current conditions within the study area indicate that some areas of the property may have no or low archaeological potential and do not require Stage 2 Property Assessment or should be excluded from Stage 2 Property Assessment. These areas would include areas under gravel, and areas that are not accessible due to the presence of steep slopes. A significant proportion of the study area does exhibit archaeological potential and therefore a Stage 2 Property Assessment is required.

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

6.0 PROPERTY INSPECTION

A detailed examination and photo documentation was carried out on the study area in order to document the existing conditions of the study area to facilitate the Stage 2 Property Assessment. All areas of the study area were visually inspected by Michael Henry and Marilyn Cornies, and select features were photographed as a representative sample of each area defined within Maps 5 & 6. Observations made of conditions within the study area at the time of the inspection were used to inform the requirement for Stage 2 Property Assessment for portions of the study area as well as to aid in the determination of appropriate Stage 2 Property Assessment strategies. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Maps 5 & 6 of this report.

6.1 PROPERTY INSPECTION DOCUMENTATION

The documentation produced during the field investigation conducted in support of this report includes: one sketch map, one page of photo log, one page of field notes, and 16 digital photographs.

7.0 ANALYSIS AND CONCLUSIONS

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1 Archaeological Background Study of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation by Michael Henry and Marilyn Cornies on 30 September 2018. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTCS) on behalf of the government and citizens of Ontario.

7.1 STAGE 1 ANALYSIS AND CONCLUSIONS

As part of the present study, background research was conducted in order to determine the archaeological potential of the proposed project area.

"A Stage 1 background study provides the consulting archaeologist and Ministry report reviewer with information about the known and potential cultural heritage resources within a particular study area, prior to the start of the field assessment." (OMCzCR 1993)

The evaluation of potential is further elaborated Section 1.3 of the Standards and Guidelines for Consultant Archaeologist (2011) prepared by the Ontario Ministry of Tourism and Culture:

" The Stage 1 background study (and, where undertaken, property inspection) leads to an evaluation of the property's archaeological potential. If the evaluation indicates that there is archaeological potential anywhere on the property, the next step is a Stage 2 assessment."
(MTC 2011: 17)

Features or characteristics that indicate archaeological potential when documented within the study area, or within close proximity to the study area (as applicable), include:

" - previously identified archaeological sites
- *water sources (It is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees.):*
    - *primary water sources (lakes, rivers, streams, creeks)*
    - *secondary water sources (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 the 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 Post-contact industry (e.g., fur trade, logging, prospecting, mining)*
- *areas of early Post-contact 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 Actor that is a federal, provincial or municipal historic landmark or site*
- *property that local histories or informants have identified with possible archaeological sties, historical events, activities, or occupations"*

(MTC 2011: 17-18)

The evaluation of potential does not indicate that sites are present within areas affected by proposed development. Evaluation of potential considers the possibility for as yet undocumented sites to be found in areas that have not been subject to systematic archaeological investigation in the past. Potential for archaeological resources is used to determine if property assessment of a study area or portions of a study area is required.

> *"Archaeological resources not previously documented may also be present in the affected area. If the alternative areas being considered, or the preferred alternative selected, exhibit either high or medium potential for the discovery of archaeological remains an archaeological assessment will be required."*
>
> (MCC & MOE 1992: 6-7)

> *"The Stage 1 background study (and, where undertaken, property inspection) leads to an evaluation of the property's archaeological potential. If the evaluation indicates that there is archaeological potential anywhere on the property, the next step is a Stage 2 assessment."*
>
> (MTC 2011: 17)

In addition, archaeological sites data is also used to determine if any archaeological resources had been formerly documented within or in close proximity to the study area and if these same resources might be subject to impacts from the proposed undertaking. This data was also collected in order to establish the relative cultural heritage value or interest of any resources that might be encountered during the conduct of the present study. For example, the relative rarity of a site can be used to assign an elevated level of cultural heritage value or interest to a site that is atypical for the immediate vicinity. The requisite archaeological sites data of previously registered archaeological sites was collected from the Programs and Services Branch, Culture Programs Unit, MTCS and the corporate research library of AMICK Consultants Limited. The Stage 1 Background Research methodology also includes a review of the most detailed available topographic maps, historical settlement maps, archaeological management plans (where applicable) and commemorative plaques or monuments. When previous archaeological research documents lands to be impacted by the proposed undertaking or archaeological sites within 50 metres of the study area, the reports documenting this earlier work are reviewed for pertinent information. AMICK Consultants Limited will often modify this basic methodology based on professional judgment to include additional research (such as, local historical works or documents and knowledgeable informants).

Section 7.7.3 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 132) outlines the requirements of the Analysis and Conclusions component of a Stage 1 Background Study.

1) *"Identify and describe areas of archaeological potential within the project area.*
2) *Identify and describe areas that have been subject to extensive and deep land alterations. Describe the nature of alterations (e.g., development or other activity)*

that have severely damaged the integrity of archaeological resources and have removed archaeological potential."

CHARACTERISTICS INDICATING ARCHAEOLOGICAL POTENTIAL

Section 1.3.1 of the Standards and Guidelines for Consultant Archaeologists specifies the property characteristics that indicate archaeological potential (MTC 2011: 17-18). Factors that indicate archaeological potential are features of the local landscape and environment that may have attracted people to either occupy the land or to conduct activities within the study area. One or more of these characteristics found to apply to a study area would necessitate a Stage 2 Property Assessment to determine if archaeological resources are present. These characteristics are listed below together with considerations derived from the conduct of this study.

1) *Previously Identified Archaeological Sites*
Previously registered archaeological sites have been documented within 300 metres of the study area.

2) *Water Sources*
Primary water sources are described as including lakes, rivers streams and creeks. Close proximity to primary water sources (300 metres) indicates that people had access to readily available sources of potable water and routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are no identified primary water sources within 300 metres of the study area.

Secondary water sources are described as including intermittent streams and creeks, springs, marshes, and swamps. Close proximity (300 metres) to secondary water sources indicates that people had access to readily available sources of potable water, at least on a seasonal basis, and in some cases seasonal access to routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are no identified secondary water sources within 300 metres of the study area.

3) *Features Indicating Past Water Sources*
Features indicating past water resources are described as including 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 the topography, shorelines of drained lakes or marshes, and cobble beaches. Close proximity (300 metres) to features indicating past water sources indicates that people had access to readily available sources of potable water, at least on a seasonal basis, and in some cases seasonal access to routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are no identified features indicating past water sources within 300 metres of the study area.

4) *Accessible or Inaccessible Shoreline*
This form of landscape feature would include high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.

There are no shorelines within 300 metres of the study area.

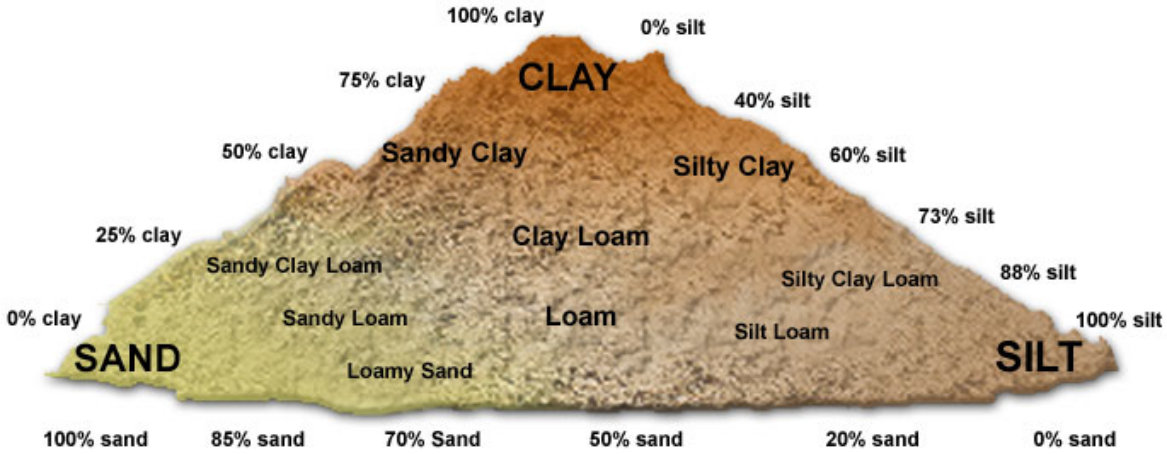
5) *Elevated Topography*
Features of elevated topography that indicate archaeological potential include eskers, drumlins, large knolls, and plateaux.

There are no identified features of elevated topography within the study area.

6) *Pockets of Well-drained Sandy Soil*
Pockets of sandy soil are considered to be especially important near areas of heavy soil or rocky ground.

The soil throughout the study area is dark brown clayish sand loam, which is consistent with the wider area surrounding the property. Therefore, the presence of this soil has no impact on potential within the study area, as the wider area is not known for clay soils or exposed bedrock.

The image below (Kuhlmann, Stacy 2017) shows the consistencies of soil types and how they compare to one another. The lower percentage of clay allows the soil to break up from the action of ploughing alone when not compacted or bound by extensive root masses.



(Kuhlmann, Stacy 2017)

7) *Distinctive Land Formations*

These are landscape features 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.

There are no identified distinctive land formations within the study area.

8) *Resource Areas*

Resource areas that indicate archaeological potential include food or medicinal plants (e.g., migratory routes, spawning areas, and prairie), scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert) and resources of importance to early Post-contact industry (e.g., logging, prospecting, and mining).

There are no identified resource areas within the study area.

9) *Areas of Early Post-contact Settlement*

These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, and 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.

The study area is not situated in close proximity to any historic structure identified on the historic atlas map.

10) *Early Historical Transportation Routes*

This includes evidence of trails, passes, roads, railways, portage routes.

The study area is situated within 100 metres of two early settlement roads that appear on the Historic Atlas Maps of 1871 and 1881. These historic roads correspond to the roads presently known as Mountain Road and the Tenth Line, which are adjacent to the study area.

11) *Heritage Property*

Property listed on a municipal register or designated under the *Ontario Heritage Act* or is a federal, provincial or municipal historic landmark or site.

There are no listed or designated heritage buildings or properties that form a part of the study area. There are no listed or designated heritage buildings or properties that are adjacent to the study area.

12) *Documented Historical or Archaeological Sites*

This includes property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations. These are properties which have not necessarily been formally recognized or for which there is additional

evidence identifying possible archaeological resources associated with historic properties in addition to the rationale for formal recognition.

There are no known heritage features, or known historic sites, or known archaeological sites within the study area in addition to those formally documented with the appropriate agencies or previously noted under a different criterion.

CHARACTERISTICS INDICATING REMOVAL OF ARCHAEOLOGICAL POTENTIAL

Section 1.3.2 of the Standards and Guidelines for Consultant Archaeologists specifies the property characteristics which indicate no archaeological potential or for which archaeological potential has been removed (MTC 2011: 18-19). These characteristics are listed below together with considerations derived from the conduct of this study.
The introduction of Section 1.3.2 (MTC 2011: 18) notes that *"Archaeological potential can be determined not to be present for either the entire property or a part(s) of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. This is commonly referred to as 'disturbed' or 'disturbance', and may include:"*

1) *Quarrying*
   There is no evidence to suggest that quarrying operations were ever carried out within the study area.

2) *Major Landscaping Involving Grading Below Topsoil*
   Unless there is evidence to suggest the presence of buried archaeological deposits, such deeply disturbed areas are considered to have lost their archaeological potential. Properties that do not have a long history of Post-contact occupation can have archaeological potential removed through extensive landscape alterations that penetrate below the topsoil layer. This is because most archaeological sites originate at grade with relatively shallow associated excavations into the soil. Pre-contact sites and early historic sites are vulnerable to extensive damage and complete removal due to landscape modification activities. In urban contexts where a lengthy history of occupation has occurred, properties may have deeply buried archaeological deposits covered over and sealed through redevelopment activities that do not include the deep excavation of the entire property for subsequent uses. Buildings are often erected directly over older foundations preserving archaeological deposits associated with the earlier occupation.

   There is evidence to suggest that major landscaping operations involving grading below topsoil were ever carried out within the study area. Surfaces paved with interlocking brick, concrete, asphalt, gravel and other surfaces meant to support heavy loads or to be long wearing hard surfaces in high traffic areas, must be prepared by the excavation and removal of topsoil, grading, and the addition of aggregate material to ensure appropriate engineering values for the supporting matrix and also to ensure that the installations shed water to avoid flooding or moisture damage. All hard

surfaced areas are prepared in this fashion and therefore have no or low archaeological potential. Disturbed areas are excluded from Stage 2 Property Assessment due to no or low archaeological potential and often because they are also not viable to assess using conventional methodology.

A gravel lane enters the study area from the south toward the centre, before looping back on itself to form a small circuit. It should be noted that in some places the gravel lane may be narrow enough to not affect the test pitting grid.

3) *Building Footprints*
Typically, the construction of buildings involves the deep excavation of foundations, footings and cellars that often obliterate archaeological deposits situated close to the surface.

There are no buildings within the study area.

4) *Sewage and Infrastructure Development*
Installation of sewer lines and other below ground services associated with infrastructure development often involves deep excavation that can remove archaeological potential.

There is no evidence to suggest that substantial below ground services of any kind have resulted in significant impacts to any significant portion of the study area. Major utility lines are conduits that provide services such as water, natural gas, hydro, communications, sewage, and others. These major installations should not be confused with minor below ground service installations not considered to represent significant disturbances removing archaeological potential, such as services leading to individual structures which tend to be comparatively very shallow and vary narrow corridors. Areas containing substantial and deeply buried services or clusters of below ground utilities are considered areas of disturbance, and may be excluded from Stage 2 Property Assessment.

"Activities such as agricultural cultivation, gardening, minor grading and landscaping do not necessarily affect archaeological potential."

(MTC 2011: 18)

"Archaeological potential is not removed where there is documented potential for deeply buried intact archaeological resources beneath land alterations, or where it cannot be clearly demonstrated through background research and property inspection that there has been complete and intensive disturbance of an area. Where complete disturbance cannot be demonstrated in Stage 1, it will be necessary to undertake Stage 2 assessment."

(MTC 2011: 18)

SUMMARY

Table 3 below summarizes the evaluation criteria of the Ministry of Tourism, Culture and Sport (MTCS) together with the results of the Stage 1 Background Study for the proposed undertaking. Based on the criteria, the property is deemed to have archaeological potential on the basis of proximity to previously registered archaeological sites and the location of early historic settlement roads adjacent to the study area.

TABLE 3 EVALUATION OF ARCHAEOLOGICAL POTENTIAL

FEATURE OF ARCHAEOLOGICAL POTENTIAL		YES	NO	N/A	COMMENT
1	Known archaeological sites within 300m	**Y**			If Yes, potential determined
PHYSICAL FEATURES					
2	Is there water on or near the property?		**N**		If Yes, what kind of water?
2a	Primary water source within 300 m. (lakeshore, river, large creek, etc.)		**N**		If Yes, potential determined
2b	Secondary water source within 300 m. (stream, spring, marsh, swamp, etc.)		**N**		If Yes, potential determined
2c	Past water source within 300 m. (beach ridge, river bed, relic creek, etc.)		**N**		If Yes, potential determined
2d	Accessible or Inaccessible shoreline within 300 m. (high bluffs, marsh, swamp, sand bar, etc.)		**N**		If Yes, potential determined
3	Elevated topography (knolls, drumlins, eskers, plateaus, etc.)		**N**		If Yes, and Yes for any of 4-9, potential determined
4	Pockets of sandy soil in a clay or rocky area		**N**		If Yes and Yes for any of 3, 5-9, potential determined
5	Distinctive land formations (mounds, caverns, waterfalls, peninsulas, etc.)		**N**		If Yes and Yes for any of 3-4, 6-9, potential determined
HISTORIC/PREHISTORIC USE FEATURES					
6	Associated with food or scarce resource harvest areas (traditional fishing locations, agricultural/berry extraction areas, etc.)		**N**		If Yes, and Yes for any of 3-5, 7-9, potential determined.
7	Early Post-contact settlement area within 300 m.		**N**		If Yes, and Yes for any of 3-6, 8-9, potential determined
8	Historic Transportation route within 100 m. (historic road, trail, portage, rail corridors, etc.)	**Y**			If Yes, and Yes for any 3-7 or 9, potential determined
9	Contains property designated and/or listed under the Ontario Heritage Act (municipal heritage committee, municipal register, etc.)		**N**		If Yes and, Yes to any of 3-8, potential determined
APPLICATION-SPECIFIC INFORMATION					
10	Local knowledge (local heritage organizations, Pre-contact, etc.)		**N**		If Yes, potential determined
11	Recent disturbance not including agricultural cultivation (post-1960-confirmed extensive and intensive including industrial sites, aggregate areas, etc.)		**N**		If Yes, no potential or low potential in affected part (s) of the study area.

If **YES** to any of 1, 2a-c, or 10 Archaeological Potential is **confirmed**
If **YES** to 2 or more of 3-9, Archaeological Potential is **confirmed**
If **YES** to 11 or No to 1-10 Low Archaeological Potential is **confirmed** for at least a portion of the study area.

8.0 RECOMMENDATIONS

8.1 STAGE 1 RECOMMENDATIONS

Under Section 7.7.4 of the Standards and Guidelines for Consultant Archaeologists (MTC 2011: 133) the recommendations to be made as a result of a Stage 1 Background Study are described.

> *1) Make recommendations regarding the potential for the property, as follows:*
> *a. if some or all of the property has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.*
> *b. if no part of the property has archaeological potential, recommend that the property does not require further archaeological assessment.*
> *2) Recommend appropriate Stage 2 assessment strategies.*

The study area has been identified as a property where at least part of it exhibits potential to yield archaeological deposits of Cultural Heritage Value or Interest (CHVI). The sections of the study area that demonstrate archaeological potential are illustrated in Maps 7&8. The objectives of the Stage 1 Background Study have therefore been met and in accordance with the results of this investigation, the following recommendations are made:

1. *Further archaeological assessment of the study area is warranted;*
2. *The Provincial interest in archaeological resources with respect to the proposed undertaking remains to be addressed;*
3. *At least part of the proposed undertaking has a potential for archaeological resources and a Stage 2 Archaeological Assessment is recommended for these areas;*
4. *A pedestrian survey at an interval of 5 metres between individual transects is recommended for any areas with archaeological potential where ploughing is viable. In the areas where ploughing is viable, the land can be prepared by mowing the existing grass, clearing brush and cutting trees down to surface level to prepare for ploughing;*
5. *A test pit survey at 5 metre intervals between individual test pits is recommended in all areas that hold archaeological potential that are not viable to be ploughed and are at a less than (<) 20 degree change in elevation;*

9.0 ADVICE ON COMPLIANCE WITH LEGISLATION

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

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

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

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

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

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

10.0 BIBLIOGRAPHY AND SOURCES

Archaeological Services Inc. (2003). *Stage 1-2 Archaeological Assessment for Part of Lot 44 & 45, Conc. 11, Proposed Mair Mills Subdivision (Cw-T-0201), Town of Collingwood, County of Grey, Ontario*.

Belden, H. & Co. (1881). *Simcoe Supplement in Illustrated Atlas of the Dominion of Canada.* H. Belden & Co.: Toronto.

Chapman, L.J. & D.F. Putnam. (1984). *The Physiography of Southern Ontario (Third Edition).* Ontario Geological Survey, Special Report #2. Ontario Ministry of Natural Resources, Toronto.

Esri. "Topographic" [basemap]. Scale Not Given. "World Topographic Map". April 12, 2018. http://www.arcgis.com/home/item.html?id=30e5fe3149c34df1ba922e6f5bbf808f. (April 12, 2018).

Garbutt, Mary. (2010). About Simcoe County. *Simcoe County Branch- Ontario Genealogical Society*. Retrieved 12 May 2010, from URL: http://www.simcoebogs.com/About/ab_simcoe.html

Goel, Tarun (2013). Road Construction: History and Procedure. Bright Hub Engineering. Retrieved 24 May 2015 from URL: http://www.brighthubengineering.com/structural-engineering/59665-road-construction-history-and-procedure/

Google Earth (Version 6.0.3.2197) [Software]. (2009). Available from http://www.google.com/earth/index.html.

Google Maps. (2012). Available from: http://maps.google.ca/?utm_campaign =en&utm_source=en-ha-na-ca-bk-gm&utm_medium=ha&utm_term =google%20maps.

GSP Group. (2018). *Panorama North Concept Plan.* GSP Group, Kitchener.

Hogg, John. (1871). *Hogg's Map of the County of Simcoe* [map]. John Hogg, Collingwood. Retrieved January 23, 2017, from the Ontario Historical County Maps Project in association with University of Toronto Map and Data Library URL: http://maps.library.utoronto.ca/hgis/countymaps/simcoe/index.html.

Hunter, Andrew. (2011). *The History of Simcoe County*, URL: http://www.waynecook.com/zclearview.html, as of July 20, 2011. First published in 1909 and reproduced in 1948 by the Simcoe County Historical Society, Barrie.

Kuhlmann, Stacy. (2017). *Types of Soil.* Diagram of Soil Types available from http://www.tes.com/lessons/AKChU3fbfZKo9g/types-of-soil.

Ontario Heritage Act, RSO 1990a, Government of Ontario. (Queen's Printer, Toronto).

Ontario Heritage Amendment Act, SO 2005, Government of Ontario. (Queen's Printer, Toronto).

Ontario Ministry of Citizenship, Culture and Recreation (OMCzCR). (1993). *Archaeological Assessment Technical Guidelines, Stages 1-3 and Reporting Format.* (Queen's Printer for Ontario 1993)

Ontario Ministry of Culture (MCL). (2005). *Conserving a Future for Our Past: Archaeology, Land Use Planning & Development in Ontario (An Educational Primer and Comprehensive Guide for Non-Specialists).* (Heritage & Libraries Branch, Heritage Operations Unit: Toronto).

Ontario Ministry of Culture and Communications (MCC) & Ministry of Environment (MOE). (1992). *Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments.* (Cultural Programs Branch, Archaeology and Heritage Planning: Toronto).

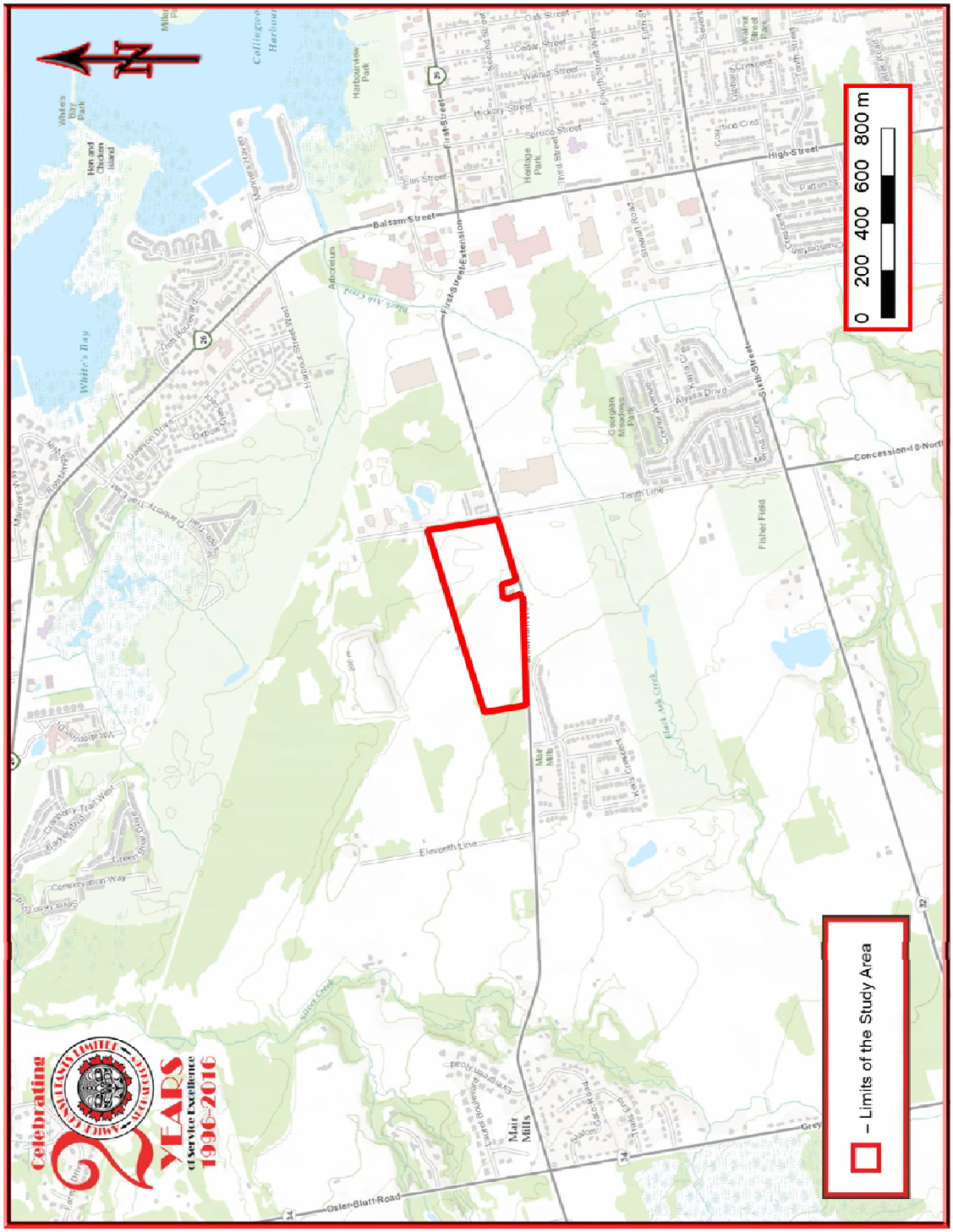
Ontario Ministry of Tourism and Culture (MTC). (2011). *Standards and Guidelines for Consultant Archaeologist.* (Programs and Services Branch: Culture Programs Unit, Toronto).

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

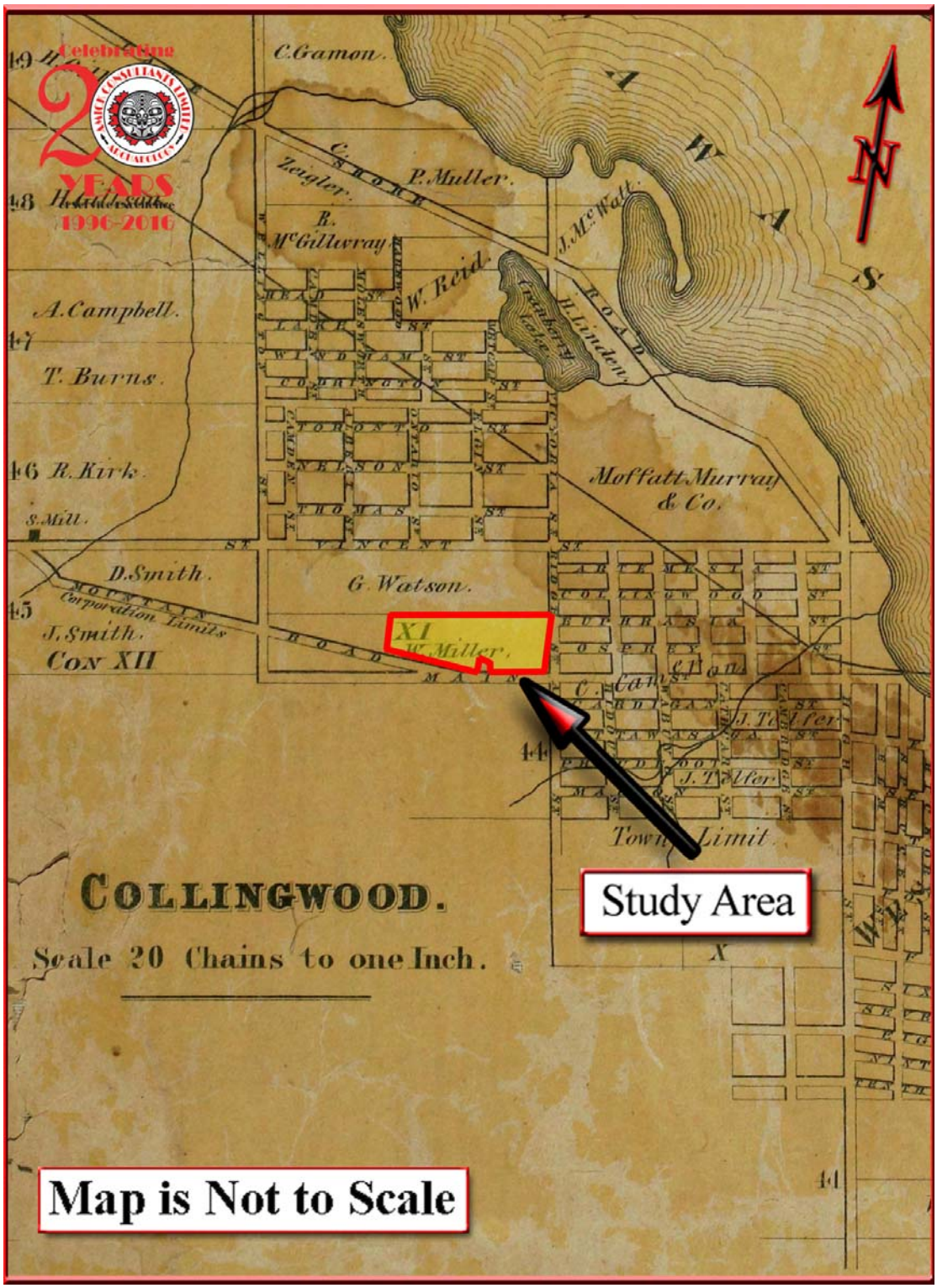
Provincial Policy Statement (2014). Government of Ontario. (Queen's Printer, Toronto).

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

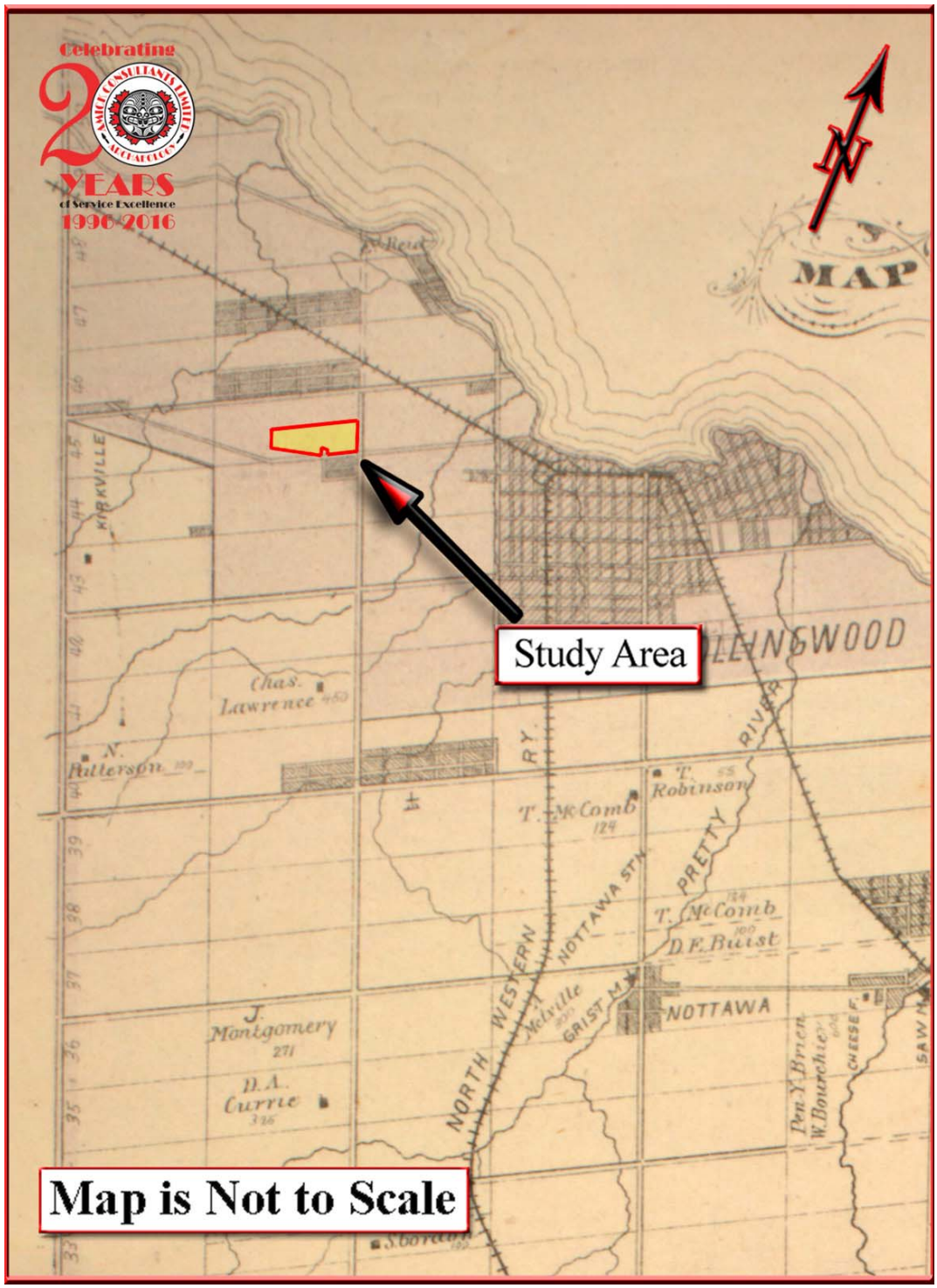
11.0 MAPS



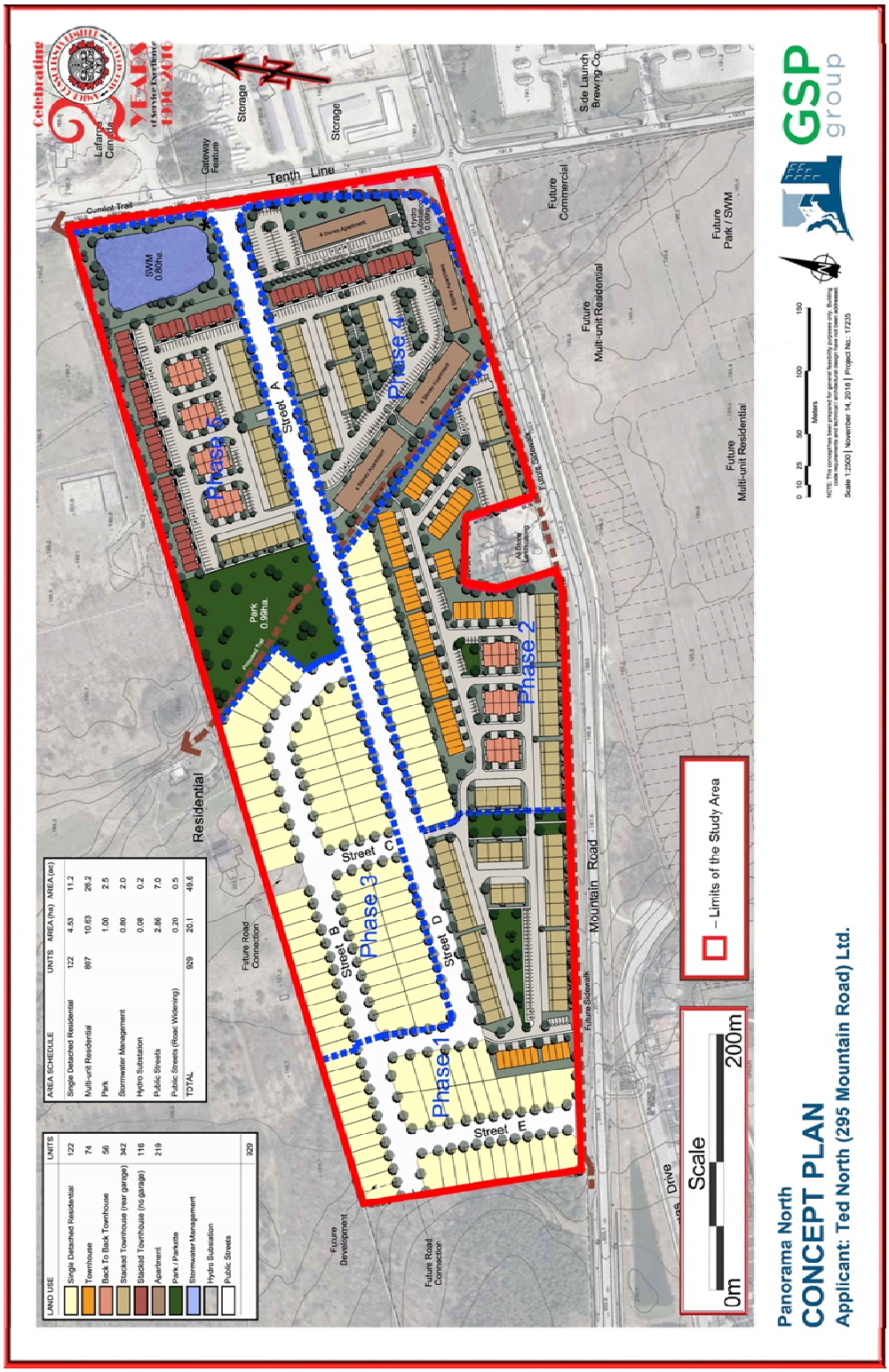
MAP 1 LOCATION OF THE STUDY AREA (ESRI 2018)



MAP 2 FACSIMILE SEGMENT OF HOGG'S MAP OF THE COUNTY OF SIMCOE (HOGG 1871)

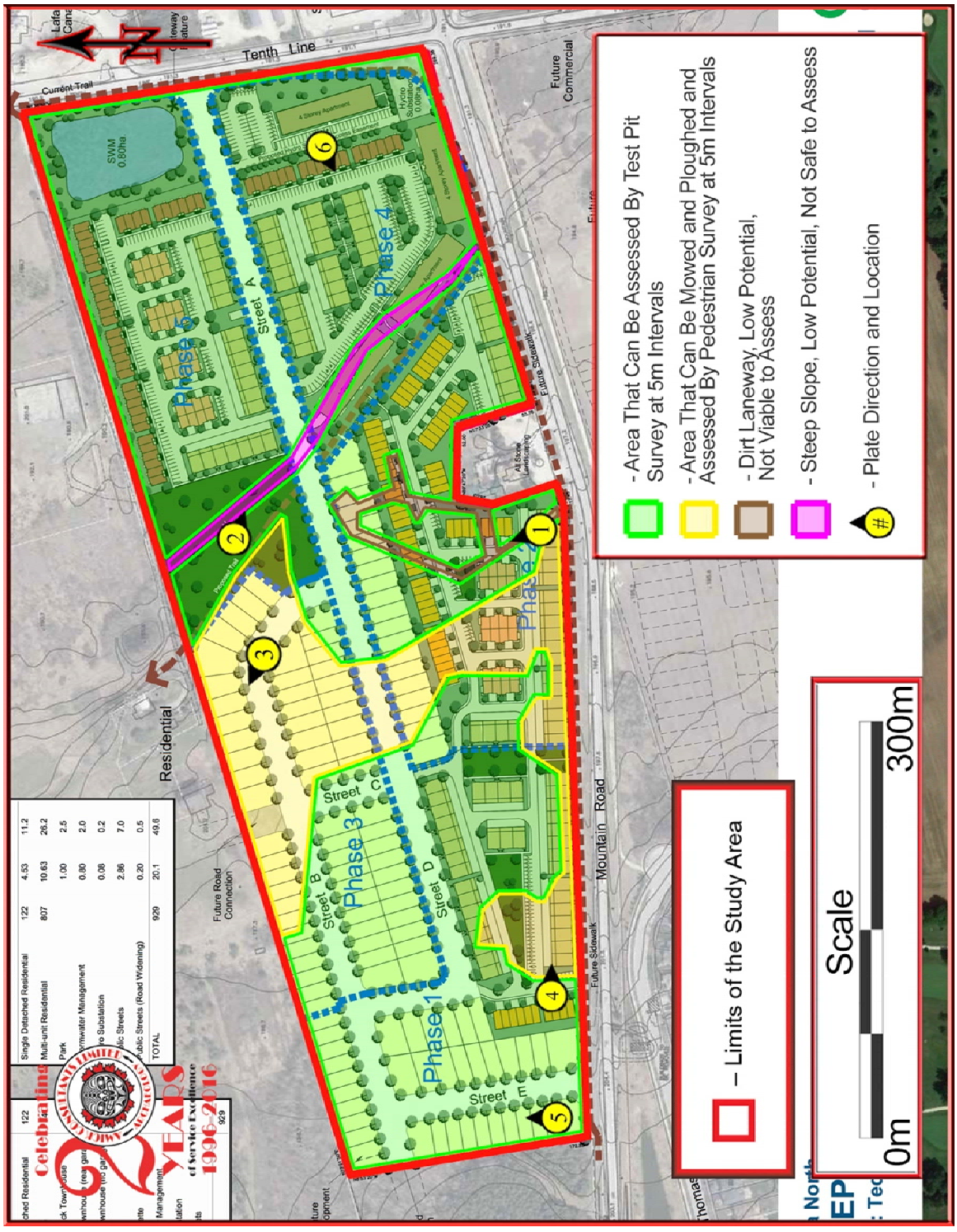


MAP 3 FACSIMILE SEGMENT OF THE HISTORIC ATLAS MAP OF THE TOWNSHIP OF NOTTAWASAGA (BELDEN, H. & CO. 1881)

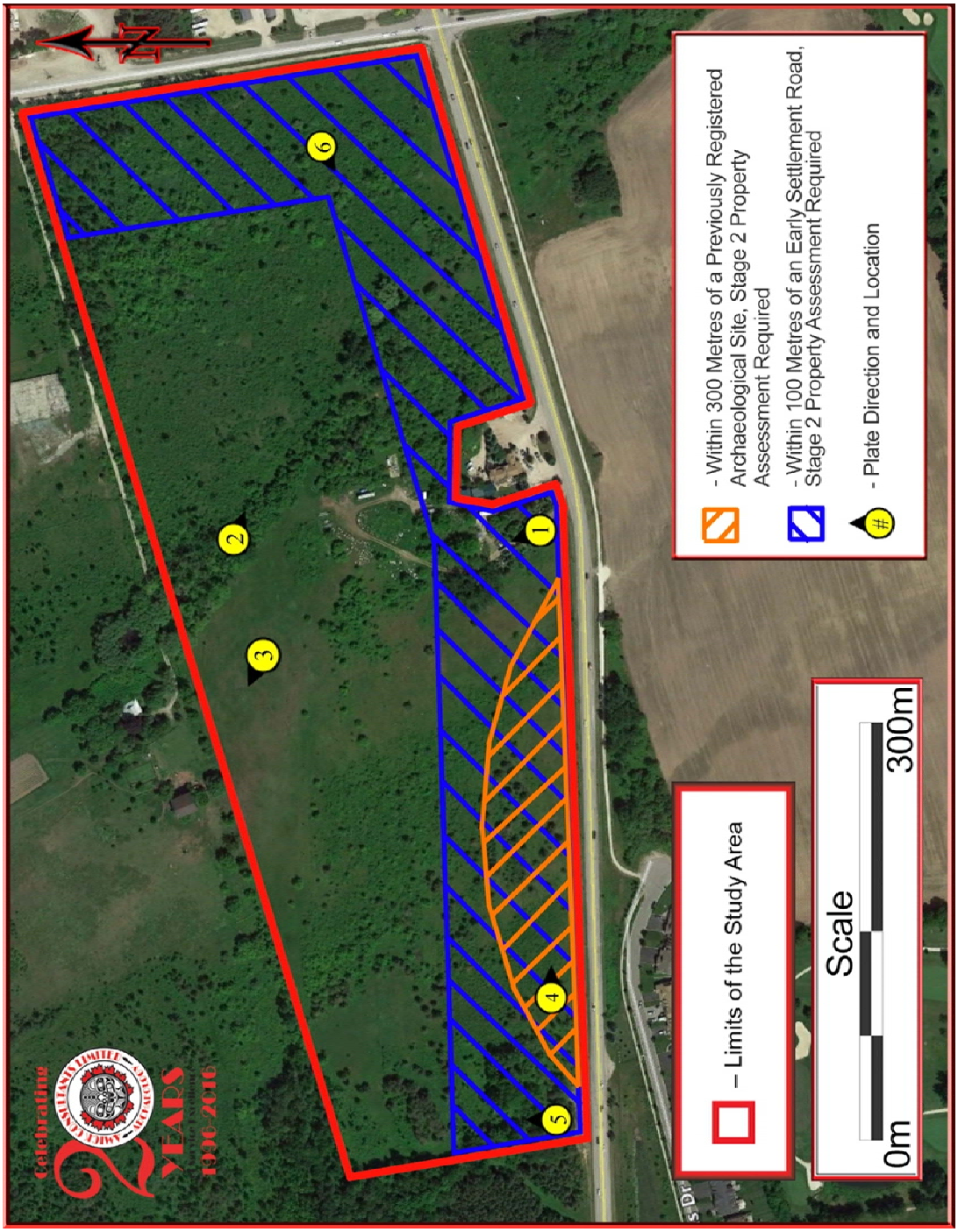


MAP 4 CONCEPT PLAN (GSP GROUP 2018)

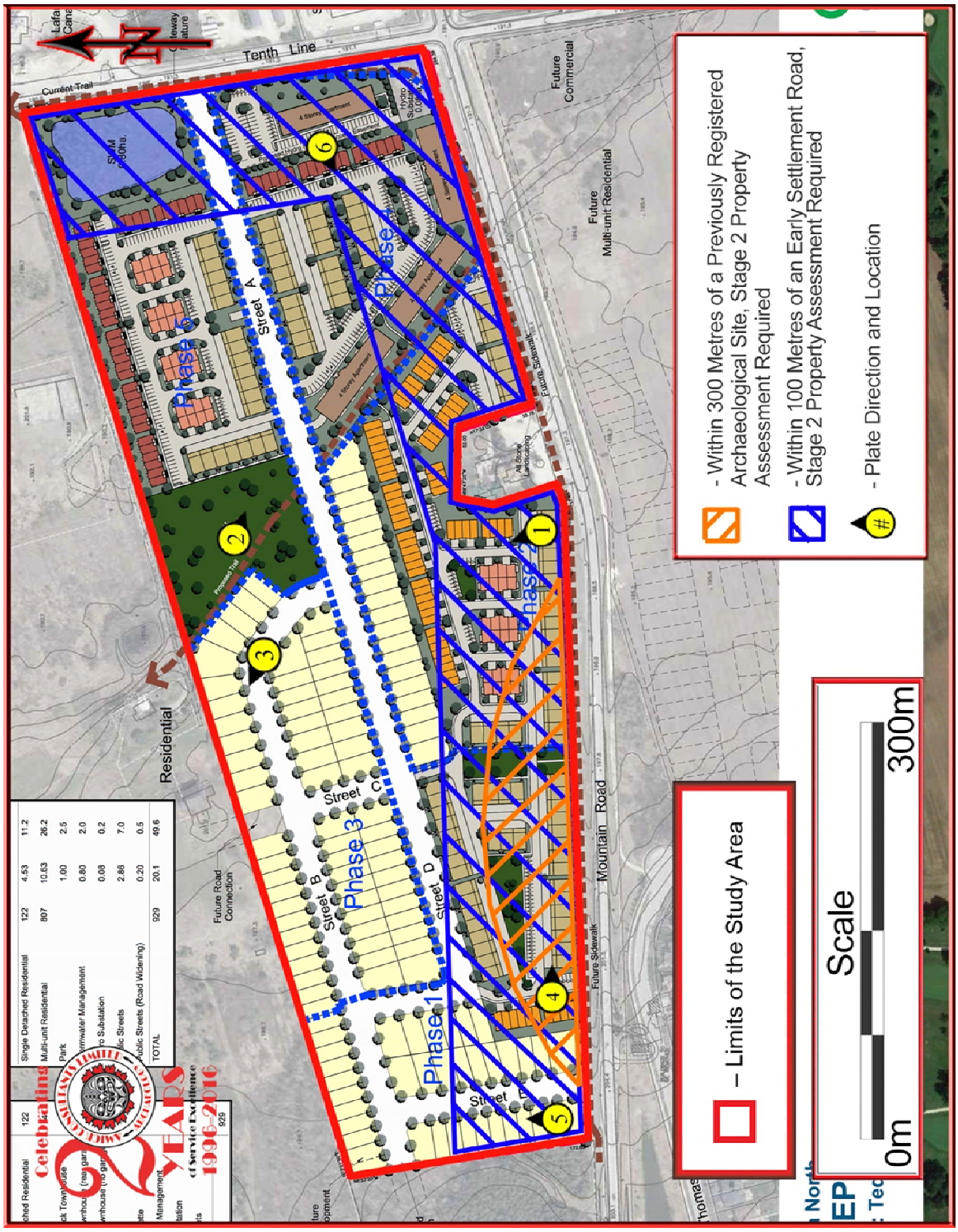
MAP 5 AERIAL PHOTO OF THE STUDY AREA (GOOGLE EARTH 2011)



MAP 6 DETAILED PLAN OF THE STUDY AREA



MAP 7 REGIONS WITHIN THE STUDY AREA THAT DEMONSTRATE ARCHAEOLOGICAL POTENTIAL



MAP 8 REGIONS WITHIN THE STUDY AREA THAT DEMONSTRATE ARCHAEOLOGICAL POTENTIAL OVER THE PLAN OF SURVEY

12.0 IMAGES

IMAGE 1 GRAVEL ROAD

IMAGE 2 STEEP SLOPE

IMAGE 3 FIELD CONDITIONS – PLOUGHABLE FIELDS

IMAGE 4 FIELD CONDITIONS – PLOUGHABLE FIELDS

IMAGE 5 FIELD CONDITIONS – TREE STAND (TEST PIT SURVEY REQUIRED)

IMAGE 6 FIELD CONDITIONS – OPEN MEADOW (TEST PIT SURVEY REQUIRED)