

**APPENDIX E:
STAGE 1 ARCHAEOLOGICAL
ASSESSMENT**



**Stage 1 Archaeological Assessment
Sun-Canadian Pipe Line
NPS12 Pipeline Replacement (E16M)
Part of Lot 4, Concessions 7 and 8 New Survey
Geographic Township of Trafalgar (North)
Now the Town of Milton
Regional Municipality of Halton, Ontario**

Submitted to

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and

The Ontario Ministry of Heritage, Sport, Tourism and Culture Industries

Prepared by



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Our File: 2020-206
PIF Number: P324-0571-2020

January 2021
Original report submitted to the Ministry of Heritage, Sport, Tourism and Culture
Industries
7 January 2021

Executive Summary

Sun-Canadian Pipe Line Company Limited (SPCL) owns and operates the NPS12 pipeline which crosses East Sixteen Mile Creek in Milton. SCPL is proposing to replace the existing pipeline in the vicinity of the crossing with new deeper pipe and eliminate three areas of shallow soil cover. Part of the proposed pipeline replacement will be constructed outside of the existing right-of-way (ROW) within a new alignment to account for the installation of the pipe by a horizontal directional drill (HDD). Construction of the replacement pipeline could begin as early as Summer 2021 and be complete by the end of 2021, subject to approval by the Ontario Energy Board (OEB).

Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted to carry out a Stage 1 archaeological assessment of lands with potential for impact by proposed pipeline maintenance in the Town of Milton. The project area is roughly 1.507 ha in size and falls within Lot 4, Concessions 7 and 8 New Survey, Geographic Township of Trafalgar (North), now Regional Municipality of Halton, Ontario. The project area consists of the Drill Entry and Drill Exit Areas point on either side of Trafalgar Road, a linear Pipe Laydown Area west of Trafalgar Road, and the Drill Path beneath Trafalgar Road, East Sixteen Mile Creek and its unnamed tributary. The Stage 1 archaeological assessment was undertaken as part of SCPL's submission of the OEB. All work was done in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). The purpose of the Stage 1 archaeological assessment was to establish whether there was potential for archaeological resources to exist within the project area.

The Stage 1 background study included a review of current land use, historic and modern maps, past settlement history for the area and a consideration of topographic and physiographic features, soils, and drainage. It also involved a review of previously registered archaeological resources within 1 km of the project area, and previous archaeological assessments within 50 m. The background study indicated that the property had potential for the recovery of archaeological resources due the proximity (i.e., within 300 m) to several features that signal archaeological potential, namely: 1) a watercourse (East Branch of Sixteen Mile Creek and a tributary of the East Branch of Sixteen Mile Creek); 2) mapped 19th century structures (Sam Anderson's and John Hall's farmsteads); and, 3) previously registered archaeological sites (AjGw-60, AjGw-264, AjGw-320, AjGw-321 and AjGw-322).

A Stage 1 property inspection was also conducted to further evaluate the current conditions within the project area. Based on the information compiled in the background study and property inspection, the following recommendations are made:

- 1) The areas of woodlot, the tree farm and the manicured lawns have archaeological potential and require Stage 2 archaeological assessment (55.5%; 0.837 ha). In keeping with provincial standards, these unploughable areas are recommended for test pit survey using a 5 m transect interval.



- 2) The sloped areas (1.0%; 0.015 ha), low-lying and wet areas (0.8%; 0.016 ha), and the obviously disturbed areas (27.6%; 0.416 ha) are considered to be of low archaeological potential and were photo-documented and no further work is recommended.
- 3) The Trafalgar Road ROW and the Project area to the east of Trafalgar Road have been previously assessed and no further work is recommended (15.1%; 0.227 ha).
- 4) If the Project area is changed to incorporate lands not included in this report, additional archaeological assessment may be required.

These recommendations are subject to the conditions laid out in Section 7.0 of this report and to the Ministry of Heritage, Sport, Tourism and Culture Industries' review and acceptance of this report into the provincial register.



Table of Contents

Executive Summary	ii
Table of Contents	iv
List of Images	v
List of Maps	v
List of Tables	v
Project Personnel	vi
1.0 PROJECT CONTEXT	7
1.1 Development Context.....	7
1.1.1 Introduction.....	7
1.1.2 Purpose and Legislative Context	8
2.0 STAGE 1 BACKGROUND STUDY	8
2.1 Research Methods and Sources.....	8
2.2 Project Context: Archaeological Context.....	11
2.2.1 Project Area: Overview and Physical Setting	11
2.2.2 Summary of Registered or Known Archaeological Sites	11
2.2.3 Summary of Past Archaeological Investigations within 50m	12
2.2.4 Dates of Archaeological Fieldwork.....	14
2.3 Project Context: Historical Context	14
2.3.1 Indigenous Settlement in Milton	14
2.3.2 19 th Century and Municipal Settlement.....	17
2.3.3 Review of Historic Maps and Imagery.....	18
3.0 STAGE 1 PROPERTY INSPECTION	19
4.0 ANALYSIS AND CONCLUSIONS	20
6.0 SUMMARY	22
7.0 ADVICE ON COMPLIANCE WITH LEGISLATION.....	23
8.0 BIBLIOGRAPHY	24
9.0 IMAGES	26
10.0 MAPS	32
SUPPLEMENTARY DOCUMENTATION.....	45



List of Images

Image 1: Woodlot, Tree Farm and Paved Roadway Conditions (looking northeast)	27
Image 2: Paved Surface of Roadway in Pipe Laydown Area, Drill Exit Area and Drill Path	27
Image 3: Overview of Woodlot, Paved Roadway and Tree Farm Conditions (looking northeast)	28
Image 4: Top of Slope Leading Down to East Sixteen Mile Creek (looking northeast)	28
Image 5: Ravine and Slope Leading Down to East Sixteen Mile Creek (looking northeast)	29
Image 6: East Sixteen Mile Creek (looking northeast)	29
Image 7: Woodlot East of East Sixteen Mile Creek (looking northeast)	30
Image 8: Steeply Slope from 5636 Trafalgar Road (looking north)	30
Image 9: 5636 Trafalgar Road (looking southwest)	31
Image 10: Previously Assessed Area East of Trafalgar Road (looking northeast)	31

List of Maps

Map 1: Location of the Project Area in Milton, ON	33
Map 2: Aerial Photograph Showing the Location of the Project Area in Milton	34
Map 3: Physiography Within the Vicinity of the Project Area	35
Map 4: Soils Within the Vicinity of the Project Area	36
Map 5: Drainage Within the Vicinity of the Project Area	37
Map 6: Leslie Currie and Associates (1996) Stage 2 Project Area	38
Map 7: Project Area Shown on an 1858 Map of Halton County, ON	39
Map 8: Project Area Shown on an 1877 Map of Halton County, ON	40
Map 9: Location of the Project Area Shown on a 1954 Aerial Photograph	41
Map 10: Location of the Project Area Shown on a 2010 Aerial Photograph	42
Map 11: Location of the Project Area Shown on a 2015 Aerial Photograph	43
Map 12: Areas of Archaeological Potential	44

List of Tables

Table 1: Registered Archaeological Sites within 1 km of the Project Area	12
Table 2: Cultural Chronology for Indigenous Settlement in Milton	15
Table 3: Documentary Records	20



Project Personnel

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1.0 PROJECT CONTEXT

1.1 Development Context

1.1.1 Introduction

Sun-Canadian Pipe Line Company Limited (SPCL) owns and operates the NPS12 pipeline which crosses East Sixteen Mile Creek in Milton. SCPL is proposing to replace the existing pipeline in the vicinity of the crossing with new deeper pipe and eliminate three areas of shallow soil cover. Part of the proposed pipeline replacement will be constructed outside of the existing right-of-way (ROW) within a new alignment to account for the installation of the pipe by a horizontal directional drill (HDD). Construction of the replacement pipeline could begin as early as Summer 2021 and be complete by the end of 2021, subject to approval by the Ontario Energy Board (OEB).

Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted to carry out a Stage 1 archaeological assessment of lands with potential for impact by proposed pipeline maintenance in the Town of Milton. The project area is roughly 1.507 ha in size and falls within Lot 4, Concessions 7 and 8 New Survey, Geographic Township of Trafalgar (North), now Regional Municipality of Halton, Ontario. The project area consists of the Drill Entry and Drill Exit Areas point on either side of Trafalgar Road, a linear Pipe Laydown Area west of Trafalgar Road, and the Drill Path beneath Trafalgar Road, East Sixteen Mile Creek and its unnamed tributary. The Stage 1 archaeological assessment was undertaken as part of SCPL's submission of the OEB. All work was done in accordance with the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). The purpose of the Stage 1 archaeological assessment was to establish whether there was potential for archaeological resources to exist within the project area.

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). Legal permission to enter and conduct all necessary fieldwork activities within the assessed lands was obtained by SCPL.



1.1.2 Purpose and Legislative Context

The Stage 1 archaeological assessment work was conducted in accordance with Section 4.3.4 Cultural Heritage Resources in the *Environmental Guidelines for the Location, Construction and Operation of Hydrocarbon Pipelines and Facilities in Ontario* (OEB 2016). The purpose of a Stage 1 background study is to determine if there are known cultural resources within the proposed areas of impact or potential for such resources to exist. Subsequently, it can act as a planning tool by identifying areas of concern that, where possible, could be avoided to minimize environmental impact. It is also used to determine the need for a Stage 2 field assessment involving the search for archaeological sites. If significant sites are found, a strategy (usually avoidance, preservation or excavation) must be put forth for their mitigation.

The Regional Municipality of Halton's *Master Plan of Archaeological Resources* is a planning tool developed to implement these requirements by identifying areas where there is potential for archaeological sites to exist. If properties are deemed to have potential for archaeological sites, a Stage 1 and 2 archaeological assessment is required.

2.0 STAGE 1 BACKGROUND STUDY

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 Project area. According to the *Standards and Guidelines*, a Stage 1 background study must include a review of:

- an up-to-date listing of sites from the Ontario's Past Portal for 1 km around the Project area;
- reports of previous archaeological fieldwork within a radius of 50 m around the Project area;
- topographic maps at 1:10,000 (recent and historical) or the most detailed scale available;
- historic settlement maps (e.g., historical atlas, surveys);
- archaeological management plans or other archaeological potential mapping (when available); and
- commemorative plaques or monuments on or near the Project area.

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

- a database search was completed through the Ministry of Heritage, Sport, Tourism and Culture Industries' Past Portal (PastPort) system that compiled a list of registered archaeological sites within 1 km of the Project area (completed November 20th, 2020);



- a review of known prior archaeological reports for the Project area and adjacent lands
(note: the Ministry of Heritage, Sport, Tourism and Culture Industries 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 providing by the client was also reviewed;
- a series of historic maps and photographs was reviewed related to post-1800 land settlement; and,
- 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.

There are no commemorative plaques or monuments within the immediate vicinity of the Project area.

The Project area falls within the Regional Municipality of Halton's *Master Plan of Archaeological Resources* (ASI 2008). This document provides an archaeological site potential model based on the mapped locations of registered archaeological sites, local environmental characteristics and other features indicating archaeological potential.

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, plateau);
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground;
- distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases; there



- may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings;
- resource areas, including:
 - food or medicinal plants (e.g., migratory routes, spawning areas, prairie);
 - scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert);
 - early Euro-Canadian industry (e.g., fur trade, logging, prospecting, mining);
 - areas of early 19th century settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.
 - early historical transportation routes (e.g., trails, passes, roads, railways, portage routes);
 - property listed on a municipal register or designated under the *Ontario Heritage Act* or that is a federal, provincial, or municipal historic landmark or site; and
 - property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

In southern Ontario (south of the Canadian Shield), any lands within 300 m 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 Indigenous 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 *Standards and Guidelines* 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 Project Area: Overview and Physical Setting

The Project area is roughly 1.5 hectares in size and falls within Lot 4, Concessions 7 and 8 New Survey, Geographic Township of Trafalgar (North), Halton County, Ontario. (Map 1 and 2). The Project area consists of the Drill Entry and Drill Exit Areas point on either side of Trafalgar Road, a linear Pipe Laydown Area west of Trafalgar Road, and the Drill Path beneath Trafalgar Road and the watercourses.

The Project area falls within the Peel Plain physiographic region, as defined by Chapman and Putnam (1984; Map 3). The Peel Plain is a relatively flat tract of clay soils that covers large portions of the Regional Municipalities of York, Peel, and Halton. The plain is dominated by till soils that contain large amounts of shale and limestone. The Project area occurs within a sand plain surrounded by bevelled till plains. The extreme southwestern end of the Project area falls within the bevelled till plain. The soil types within the Project area are Chinguacousy Clay Loam, Jeddo Clay Loam and Bottom Land (Map 4). The most prominent soil type is Chinguacousy Clay Loam, an imperfectly drained calcareous clay loam (Gillespie et al. 1971:27). To the west of Trafalgar Road, small pockets of Jeddo Clay Loam, which is a poorly drained soil, are present. The ravine associated with East Sixteen Mile Creek is identified as Bottom Land.

The Project area is located within the East Sixteen Mile Creek watershed (Map 5). East Sixteen Mile Creek is located west of Trafalgar Road between the Drill Entry Area and Drill Exit Area portions of the Project area. A tributary of East Sixteen Mile Creek is located approximately 100 m to the west of the western edge of the Project area. The Drill Entry Area is adjacent to a ravine which features two small, unnamed tributaries of East Sixteen Mile Creek.

A general reconstruction of 19th-century vegetation is made possible through the consultation of mapping which visually depicts the descriptive and anecdotal accounts contained in early surveyors' log books. The early 19th-century vegetation in both Lot 4, Concessions 7 and 8 have been described as predominantly maple-beech forest with hemlock and basswood (Findlay 1974).

2.2.2 Summary of Registered or Known Archaeological Sites

According to the Ministry of Heritage, Sport, Tourism and Culture Industries' registered site database (accessed November 20th, 2020), there are 20 registered archaeological sites within 1 km of the Project area.



Of the 20 registered sites, four are 19th-century settler homesteads, one is a Late Archaic period Indigenous findspot, one is Late Archaic period Indigenous artifact scatter, one is a Middle Archaic period Indigenous findspot, one is a Late Archaic and Early Woodland period Indigenous artifact scatter, and the remaining 12 are Indigenous findspots or artifact scatters which cannot be dated. A total of five sites are located within 300 m of the Project area: AjGw-60, AjGw-264, AjGw-320, AjGw-321 and AjGw-322.

The nearest of these sites is AjGw-264, which is a 19th-century homestead located approximately 125 m south of the Drill Entry Area. This site has been fully mitigated and its former location falls within what is now a large artificial pond.

Table 1: Registered Archaeological Sites within 1 km of the Project Area

Borden Number	Site Name	Time Period	Affinity	Site Type
AjGw-60	Robert Plant	19 th -Century	Settler	Homestead
AjGw-59		Pre-Contact	Indigenous	Unknown
AjGw-58		Late Archaic	Indigenous	Scatter
AjGw-57		Pre-Contact	Indigenous	Findspot
AjGw-569		Middle Archaic	Indigenous	Findspot
AjGw-568		Pre-Contact	Indigenous	Scatter
AjGw-566	H1	19 th -Century	Settler	Homestead
AjGw-56		Pre-Contact	Indigenous	Scatter
AjGw-55		Pre-Contact	Indigenous	Findspot
AjGw-52		Pre-Contact	Indigenous	Scatter
AjGw-51	Nursery 2	Pre-Contact	Indigenous	Findspot
AjGw-50	Nursery 1	Pre-Contact	Indigenous	Scatter
AjGw-393	York II	Pre-Contact	Indigenous	Unknown
AjGw-392	York I	Pre-Contact	Indigenous	Unknown
AjGw-323	Gruehl III	Late Archaic	Indigenous	Findspot
AjGw-322	Gruehl II	Pre-Contact	Indigenous	Scatter
AjGw-321	Gruehl I	Pre-Contact	Indigenous	Scatter
AjGw-320	Hall II	19 th -Century	Settler	Homestead
AjGw-264	Hall I	19 th -Century	Settler	Homestead
AjGw-19	Nielsen	Late Archaic, Early Woodland	Indigenous	Scatter

2.2.3 Summary of Past Archaeological Investigations within 50m

During the course of this study, records of four archaeological investigations within 50 m of the Project area were identified. Each of these investigations involved the assessment of areas that fall within the current Project area. However, it should be noted that the Ministry of Heritage, Sport, Tourism and Culture Industries currently does not provide an inventory of archaeological assessments to assist in this determination.

In 1996, Leslie Currie undertook a Stage 1 assessment of the east and west Trafalgar Road right-of-way (ROW) between Highway 403 and a point 500 m north of the intersection of Trafalgar Road and Britannia Road ahead of a proposed widening of Trafalgar Road from two lanes to four. The Stage 1 background research determined that



the Project area retained archaeological potential and would therefore require a Stage 2 survey. In keeping with provincial standards, any ploughed agricultural lands were recommended for pedestrian survey, using a 5 m transect interval. Any non-ploughable lands are recommended for a test pit survey at a 5 m transect interval. The details of this Stage 1 archaeological assessment were presented in a report entitled *The Stage 1 Archaeological Assessment, Trafalgar Road (RR3) Widening and Reconstruction, Highway 403 to North of Britannia Road, Regional Municipality of Halton* (Currie 1996; licensee Leslie Currie; PIF 95-073).

In 1996, Leslie Currie and Associates undertook a Stage 2 assessment of the east and west Trafalgar Road ROW between Highway 403 and a point 500 m north of the intersection of Trafalgar Road and Britannia Road ahead of a proposed widening of Trafalgar Road from two lanes to four. The Stage 2 assessment methodology consisted of a pedestrian survey at a 5 m transect interval of any ploughed agricultural lands and a test pit survey at a 5 m transect interval of any non-ploughable lands. The area assessed included the portions of the Drill Path within the current Trafalgar Road ROW (Maps 6 and 12). The Stage 2 survey resulted in the discovery of three archaeological sites: AjGw-263 (Site 1), AjGw-264 (Site 2), and AjGw-265 (Smith). AjGw-263 and AjGw-264 were both recommended for Stage 3 assessment to evaluate their cultural and archaeological significance as well as to identify the portion of these sites which would be impacted by the road widening. AjGw-265 was recommended for Stage 3 and Stage 4 assessment to evaluate their cultural and archaeological significance as well as to identify the portion of these sites which would be impacted by the road widening. According to MHSTCI's registered site database AjGw-264 is located approximately 125 m south of the Drill Entry Area portion of the current project area. The details of this Stage 2 archaeological assessment were presented in a report entitled: *The Stage 2 Archaeological Assessment, Trafalgar Road (RR3) Widening and Reconstruction, Highway 403 to North of Britannia Road, Regional Municipality of Halton* (Leslie Currie and Associates 1996; licensee Leslie Currie; PIF 96-052).

In 2001, Archaeological Assessments Ltd. undertook a Stage 1-2 assessment of an 80 hectare parcel of land forming part of Lots 4 and 5, Concession 8 New Survey, Geographic Township of Trafalgar (North) prior to the development of the land for use as a golf course (SD Map 1). The Stage 1 background research determined that the property retained archaeological potential and was therefore was subject to a Stage 2 survey. The area assessed included the entire Drill Entry Area portion of the current Project area as well as the very northeastern end of the Drill Path (Map 12). As the property at that time consisted of three separate agricultural fields it was assessed through a pedestrian survey at 5 m transect intervals. The Stage 2 survey resulted in the identification of 12 archaeological locations including: one 19th century homestead (AjGw-320, Featherstone/Hall 2); two Indigenous campsites of unknown age (AjGw-321, Greuhl I; AjGw-321, Greuhl II); one Late Archaic findspot (AgGw-323); and eight non-diagnostic Indigenous findspots. The survey also resulted in the relocation of AjGw-64 (Hall); a 19th century homestead site previously identified in 1996. AjGw-64 (Hall), AjGw-320 (Featherstone/Hall 2), AjGw-321 (Greuhl I) and AjGw-321 (Greuhl II) were recommended



for further investigation. The details of this Stage 1-2 archaeological assessment were presented in a report entitled *The Stage 1-2 Archaeological Assessment of the Proposed Trafalgar-Britannia Golf Course, Part of Lots 4 & 5, Concession 8, Town of Milton, Halton Region* (Archaeological Assessments Ltd. 2001; licensee Richard Sutton; CIF 2001-035-010).

In 2005, Archaeological Assessments Ltd. completed the Stage 4 excavations of AjGw-264 and AjGw-320 that they previously identified within the Britannia Links Golf Course. This work consisted of the mechanical topsoil removal and feature documentation at both 19th-century sites. Both sites were entirely excavated and were of no further archaeological concern. The details of this Stage 4 archaeological assessment were presented in a report entitled *The Stage 4 Excavation of the Hall Site (AjGw-264) and the Featherston Site (AjGw-320), Britannia Golf Course, Town File LOPA-01/00 and Z-03/00 Revised, Town of Milton, Halton Region* (Archaeological Assessments Ltd. 2007; licensee Richard Sutton; CIF P013-147).

2.2.4 Dates of Archaeological Fieldwork

The Stage 1 property inspection was conducted on November 19th, 2020 under sunny and clear weather conditions. The field director was Liam Browne (P1048).

2.3 Project Context: Historical Context

2.3.1 Indigenous Settlement in Milton

There is archaeological evidence of Indigenous settlement in Milton and vicinity since the time of glacial retreat some 12,000 years ago through to the modern era. Nonetheless, our knowledge of past Indigenous land use in the area is incomplete due primarily to a lack of archeological investigation of many areas prior to urban development. Nonetheless, using province-wide and region-specific data, a general model of Indigenous settlement in the area can be proposed. The following paragraphs provide a basic textual summary of the known general cultural trends and archaeological periods and a tabular summary appears in Table 2.



Table 2: Cultural Chronology for Indigenous Settlement in Milton

Period			Time Range (circa)	Diagnostic Features	Complexes
Paleo	Early		9000-8400 B.C.	Fluted projectile points	Gainy, 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, Stanley/Neville
	Late		2000-1800 B.C.	Narrow points	Lamoka
			1800-1500 B.C.	Broad points	Genesee, Adder Orchard, Perkiomen
			1500-1100 B.C.	Small points	Crawford Knoll
	Terminal		1100-950 B.C.	First true cemeteries	Hind
Woodland	Early		950-400 B.C.	Expanding stemmed points, Vinette pottery	Meadowood
	Middle		400 B.C.- A.D. 500	Dentate, pseudo-scallop pottery	Saugen
	Transitional		A.D. 500-900	First corn, cord-wrapped stick pottery	Princess Point
	Late		A.D. 900-1300	First villages, corn horticulture, longhouses	Glen Meyer, Pickering
			A.D. 1300-1400	Large villages and houses	Uren, Middleport
			A.D. 1400-1650	Tribal emergence, territoriality	Neutral Iroquois, Wendat
Contact		Indigenous	A.D. 1650 - present	Treaties, mixture of Indigenous & European items	Mississauga, Six Nations
		Settler	A.D. 1796 - present	English goods, homesteads	European settlement, pioneer life

Paleo Period

The first human populations to inhabit the area came to the region between 10,000 and 12,000 years ago, coincident with the end of the last period of glaciation. Climate and environmental conditions were significantly different than they are today; local environs would not have been welcoming to anything but short-term settlement. Termed Paleo by archaeologists, Ontario's first peoples would have crossed the landscape in small groups (i.e., bands or family units) searching for food, particularly migratory game species. In this area, caribou may have provided the staple of Paleo diet, supplemented by wild plants, small game and fish. Given the low density of populations on the landscape at this time and their mobile nature, Paleo sites are small and ephemeral. They are usually identified by the presence of distinctive fluted projectile points, usually manufactured on high quality raw materials, including Onondaga chert from the Niagara Escarpment and Fossil Hill chert from Blue Mountains. Paleo sites have commonly been found in association with relic glacial lakeshores throughout Ontario.

Archaic Period

Settlement and subsistence patterns changed significantly during the Archaic period as both the landscape and ecosystem adjusted to the retreat of the glaciers. Building on earlier patterns, early Archaic populations continued the mobile lifestyle of their predecessors. Through time and with the development of more resource rich local environments, these groups gradually reduced the size of the territories they exploited on a regular basis. A seasonal pattern of warm season riverine or lakeshore settlements and interior cold weather occupations has been documented in the archaeological record. The large cold-weather mammals that formed the basis of the Paleo subsistence pattern became extinct or moved northward with the onset of warmer climate conditions. Thus, Archaic populations had a more varied diet, exploiting a range of plant, bird, mammal and fish



species. Over time, reliance on specific food resources like fish, deer and nuts became more pronounced and the presence of more hospitable environments and resource abundance led to the expansion of band and family sizes. This is evident in the archaeological record in the form of larger sites and aggregation camps, where several families or bands would come together in times of plenty. The change to more preferable environmental circumstances led to a rise in population density. As a result, Archaic sites are more plentiful than those from the earlier period. Artifacts typical of these occupations include a variety of stemmed and notched projectile points, chipped stone scrapers, ground stone tools (e.g., celts, adzes) and ornaments (e.g., bannerstones, gorgets), bifaces or tool blanks, animal bone (where and when preserved) and waste flakes, a by-product of the tool making process.

Early, Middle and Transitional Woodland Periods

Significant changes in cultural and environmental patterns are witnessed in the Early, Middle and Transitional Woodland periods (ca. 950 B.C. to A.D. 1000). Occupations became increasingly more permanent in this period, culminating in major semi-permanent villages by 1,000 years ago. Archaeologically, one of the most significant changes by Woodland times is the appearance of artifacts manufactured from modeled clay and the emergence of more sedentary villages. The Woodland Period is often defined by the occurrence of pottery, storage facilities and residential areas similar to those that define the early agricultural or Neolithic period in Europe. The earliest pottery was crudely made by the coiling method and early house structures were simple oval enclosures. Both the Early and Middle Woodland sub-periods are characterized by an elaborate burial complex that in some areas in Ontario involved the construction of large burial mounds. Trade in exotic items, including rare stone and shell objects, became common at this time, reflecting interconnections between Ontario populations and those in the Ohio and Mississippi river valleys to the south.

Late Woodland Period

Beginning circa A.D. 1000 the archaeological record documents the emergence of more substantial, semi-permanent settlements and the adoption of corn horticulture. These developments are most often associated with Iroquoian-speaking populations, the ancestors of the Wendat (Huron), Tionontati (Petun) and Attawandaron (Neutral) nations who were known to have resided in the province at the time of the arrival of the first European explorers and missionaries. Iroquoian villages incorporated a number of longhouses, multi-family dwellings that contained several families related through the female line. Precontact Iroquoian sites may be identified by a predominance of well-made pottery decorated with various simple and geometric motifs, triangular projectile points, clay pipes and ground stone artifacts. 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 missionaries (e.g., finger rings, stoneware, rosaries, and glassware).



Large Iroquoian village sites, many presumably Huron-Wendat, are known along the upper and middle areas of the Humber and Don rivers, which clearly demonstrates the Iroquoian use of the waterfront on the north shore of Lake Ontario prior to European contact. When European explorers and missionaries arrived in Ontario in the 17th century, the Huron-Wendat no longer inhabited the lakeshore and instead occupied a vast area between Lake Simcoe and Georgian Bay. By 1650, many Wendat had fled their 17th century homeland due to the onset of epidemic disease and increasing raids by Five Nations Iroquois groups who had established an increasing presence along Lake Ontario. At least two major Seneca villages were established on the Rouge River later that century. At the same time, Algonquian-speaking populations were utilizing the watershed for hunting and trapping.

By the 17th century, the Seneca no longer inhabited the Lake Ontario shores and the Algonquin-speaking Mississaugas began moving southward into the area. It was the Mississaugas who had settled the area by the time the British arrived in the late 18th century and from whom the Crown secured land for settlement.

2.3.2 19th Century and Municipal Settlement

Halton County

Halton County was named after Major William Mathew Halton, a British Army officer, who was appointed in 1805 as Secretary to Lieutenant-Governor Sir Francis Gore. Settlers started to arrive in the county in the early 1780s. The south portion of the county was first settled by United Empire Loyalists, while the north part mainly by immigrants from the British Isles. Along with Wentworth County, Halton County was created in 1816 as part of the Gore District consisting of the townships of Trafalgar, Nelson, Flamborough and Beverly, among other lands and was further expanded in 1821. When the Gore District was abolished in 1850, some townships were withdrawn from its boundaries with only the townships of Esquesing, Trafalgar, Nassageweya and Nelson remaining. As settlement progressed, several towns and villages developed mainly within the south portion of the county (Walker & Miles 1877).

Township of Trafalgar and Crown – Indigenous Peoples Treaty Context

In 1805 a treaty was signed between the British Crown and the Anishnabeg (Mississaugas) for an estimated area of 84,000 acres, with a mile-wide strip of land on either side of the Credit River reserved for the Anishnabeg (Walker and Miles 1877:60). The Anishnabeg occupied the lands along Lake Ontario during the 17th and 18th centuries. The lands were surveyed in 1806 by Samuel Street Wilmot and divided into the townships of Toronto, Trafalgar and Nelson. The first European settlement in the Township of Trafalgar is said to have taken place in 1807. In 1818 William Claus met with the Anishnabeg to propose the purchase of an additional 648,000 acres of land which lay to the north of the land previously purchased in 1805. Faced with the continual inflow of settlers to the lands north of Lake Ontario and the accelerating erosion of their traditional



economy and resource base the Chief Ajetance, on behalf of the Anishnabeg, agreed to cede these lands to the Crown in return for £522.10 of goods paid annually. The treaty ceding these lands is known as the Ajetance Treaty, No. 19 (1818) (Durcic 2017). A portion of the land purchased was incorporated into an expanded Trafalgar Township, this land was known as the “new survey.” Like the County of Halton in general, the township was settled by immigrants who came directly from the British Isles or by United Empire Loyalist families who journeyed here from Niagara (Clarke 1955:11). Early settlement focused on Sixteen Mile Creek which provided a source of power for grist and saw mills. The earliest settlers concentrated in the then tiny communities like Milton and Oakville. By 1817 the township boasted 548 occupants. The mills soon attracted both industrial and residential growth. Smaller communities including Palermo, Postville (later Trafalgar), Sheridan, Proudfoot Hollow, Merton, Bronte Station, Glenorchy, Ash, Snider, Omaha, Auburn, Drumquin and the Boyne soon appeared through the township. By mid-century, the population of Trafalgar Township grew to over 4,000 (Walker and Miles 1877:59).

Town of Milton

The earliest settlers to what would come to be known as Milton were Jasper Martin and his wife Sarah who emigrated from England in 1821. After constructing a grist mill on Sixteen Mile Creek, Martin went on to build a sawmill, ashery, and small store, thus establishing himself as one of the most important early pioneers in the entire county. This is evidenced by the community’s earliest moniker, “Martin’s Mills”. Following his death in 1833 Jasper’s four sons suggested the town’s name be changed to Milton, after the renowned poet, which was obviously well received (Cook 1977:4-5). It should be noted that Milton hosted the first (provisional) County Council in July 1853 (Walker and Miles 1877:54).

2.3.3 Review of Historic Maps and Imagery

The project area falls within Lot 4, Concessions 7 and 8 New Survey, Geographic Township of Trafalgar (North), now Regional Municipality of Halton, Ontario.

According to the 1860 Tremaine Map (Map 7), the northeastern half of Lot 4, Concession 7 is owned by Sam Anderson. The southwestern half of Lot 4, Concession 7 is owned by Margaret Ford. The southwestern ¼ of Lot 4, Concession 8 is owned by John Hall. No structures are depicted on either property or within the vicinity of the project area. Trafalgar Road is shown as open at this time. The East Branch of Sixteen Mile Creek is shown within the Drill Path portion of the project area. The community of Drumquin is shown approximately 600 m northwest of the project area. The only structure depicted in the community is an inn is at the eastern corner of the intersection of Trafalgar Road and Britannia Road.

According to the 1877 Illustrated Historical Atlas Map (Map 8), the northeastern half of Lot 4, Concession 7 is owned by Sam Anderson. Anderson’s home and orchard are shown immediately to the southwest of Trafalgar Road near to the centre of his portion of



the lot. The southwestern half of Lot 4, Concession 7 is owned by Hamilton Ford. Ford's home and orchard are shown near to the centre of his portion of the lot, set back a distance from 6th Line. The southwestern ¼ of Lot 4, Concession 8 is owned by John R. Hall. Hall's home, a secondary structure and orchard are shown to the northeast of Trafalgar Road near to the centre of his portion of the lot. Anderson and Hall's structures are both within 300 m of the project area. There are no additional structures depicted within 300 m of the project area on adjacent lots. An unnamed tributary of the East Branch of Sixteen Mile Creek is shown approximately 65 m northwest of the Drill Entry Area portion of the project area. The community of Drumquin is shown approximately 600 m northwest of the project area. The community has grown since the drafting of the 1860 Tremaine Map (Map 7), now a post office and structures are depicted at all four corners of the intersection of Trafalgar Road and Britannia Road.

Several historical aerial photographs of the project area were also reviewed. The 1954 aerial photograph (Map 9) depicts the area currently occupied by the tree farm as a ploughed agricultural field. The project area runs along the northern edge of the field. The East Sixteen Mile Creek ravine area appears largely as it does today. It is difficult to determine the land use of the area between East Sixteen Mile Creek and Trafalgar Road however beyond the area immediately to the northeast of the creek it appears to be a ploughed agricultural field bounded by a treeline. At this time the dwelling at 5636 Trafalgar Road has not yet been built. The area to the northeast of Trafalgar Road appears to be a ploughed agricultural field. Trafalgar Road at this time is a two-lane roadway. The 2010 aerial photograph (Map 10) depicts the reforestation of the area between East Sixteen Mile Creek and Trafalgar Road as well as the dwelling at 5636 Trafalgar Road. The deposition of a large amount of soil in the Drill Entry Area to the northeast of Trafalgar Road is apparent. The 2015 aerial photograph (Map 11) depicts the conversion of the ploughed agricultural field in the southwestern half of the project area to a tree farm. A roadway is shown running along the northern edge of the former agricultural field.

3.0 STAGE 1 PROPERTY INSPECTION

A Stage 1 property inspection was conducted to document and evaluate the current conditions of the project area.

The Pipe Laydown Area contains a paved roadway running northeast-southwest with a woodlot on its northern side and a planted tree farm on its southern side (Images 1 and 2). The Drill Exit contains the paved roadway and a larger section of the tree farm (Image 3). The Drill Path contains a portion of the paved roadway, as well as an open area atop a steep slope leading down to the East Sixteen Mile Creek ravine (Image 4). The ravine at the base of the slope is dry and features some scrub brush (Image 5). The Drill Path crosses East Sixteen Mile Creek and runs along its northern bank before crossing the unnamed tributary of East Sixteen Mile Creek (Image 6). The area to the east of the creek is comprised of a woodlot (Image 7). A steep slope leads down to this woodlot from the area of the dwelling at 5636 Trafalgar Road (Image 8). The portion of the Drill Path within the 5636 Trafalgar Road is landscaped but it not clear that archaeological potential has been



removed from this area (Image 9). The northeastern end of the Drill Path and the Drill Entry Area on the eastern side of Trafalgar Road is artificially built up and is now a significantly elevated area (Image 10).

The results of the Stage 1 archaeological assessment, as well as the location and orientation of report photographs, are presented on Map 12. The proponent map was provided as a KMZ files, so we have not presented the Stage 1 results on the proponent mapping.

4.0 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. The Stage 1 background study included a review of current land use, historic and modern maps, registered archaeological sites and previous archaeological studies, past settlement history for the area and a consideration of topographic and physiographic features, soils and drainage. According to the map-based review and background research, potential for the discovery of archaeological sites is indicated by the proximity to (within 300 m):

- 1) a watercourse (East Sixteen Mile Creek and a tributary of the East Branch of Sixteen Mile Creek);
- 2) mapped 19th century structures (Sam Anderson's and John Hall's farmsteads); and,
- 3) previously registered archaeological sites (AjGw-60, AjGw-264, AjGw-320, AjGw-321 and AjGw-322).

The Stage 1 property inspection visually confirmed that the areas of woodlot, the planted tree farm area and the ravine within the Pipe Laydown Area, the Drill Exit Area and the Drill Path have archaeological potential and require Stage 2 archaeological assessment (55.5%; 0.837 ha). The sloped areas (1.0%; 0.015 ha), low-lying and wet areas (0.8%; 0.016 ha), and the obviously disturbed areas (27.6%; 0.416 ha) are considered to be of low archaeological potential and were photo-documented and no further work is recommended. The Trafalgar Road ROW and the Project area to the east of Trafalgar Road have been previously assessed and no further work is recommended (15.1%; 0.227 ha).

Table 3: Documentary Records

Field Notes and Field Maps	Dated November 19 th , 2020
Photo Catalogue	September 22 nd , 2020 (27 digital photos)
Location of Records	1600 Attawandaron Road, London, Ontario N6G 3M6



5.0 RECOMMENDATIONS

Based on the information compiled in the background study and property inspection, the following recommendations are made:

- 1) The areas of woodlot, the tree farm and the manicured lawns have archaeological potential and require Stage 2 archaeological assessment (55.5%; 0.837 ha). In keeping with provincial standards, these unploughable areas are recommended for test pit survey using a 5 m transect interval.
- 2) The sloped areas (1.0%; 0.015 ha), low-lying and wet areas (0.8%; 0.016 ha), and the obviously disturbed areas (27.6%; 0.416 ha) are considered to be of low archaeological potential and were photo-documented and no further work is recommended.
- 3) The Trafalgar Road ROW and the Project area to the east of Trafalgar Road have been previously assessed and no further work is recommended (15.1%; 0.227 ha).
- 4) If the Project area is changed to incorporate lands not included in this report, additional archaeological assessment may be required.

These recommendations are subject to the conditions laid out in Section 7.0 of this report and to the Ministry of Heritage, Sport, Tourism and Culture Industries' review and acceptance of this report into the provincial register.



6.0 SUMMARY

Timmins Martelle Heritage Consultants Inc. (TMHC) was contracted to carry out a Stage 1 archaeological assessment of lands with potential for impact by proposed pipeline maintenance in the Town of Milton. The project area is roughly 1.507 ha in size and falls within Lot 4, Concession 7 and Lot 4, Concession 8 New Survey, Geographic Township of Trafalgar (North), now Regional Municipality of Halton, Ontario. The project area consists of the Drill Entry and Drill Exit Areas point on either side of Trafalgar Road, a linear Pipe Laydown Area west of Trafalgar Road, and the Drill Path beneath Trafalgar Road, East Sixteen Mile Creek and its unnamed tributary. The Stage 1 archaeological assessment was undertaken as part of SCPL's emerging Indigenous relations program in advance of the proposed maintenance. Background research indicated that the project area was in proximity to features signalling archaeological potential and a Stage 1 property inspection was undertaken. The Stage 1 property inspection visually confirmed that the areas of woodlot, the planted tree farm area and the ravine within the Pipe Laydown Area, the Drill Exit Area and the Drill Path have archaeological potential and require Stage 2 archaeological assessment (55.5%, 0.837 ha). The sloped areas (1.0%, 0.015 ha) consisting of the steep slope leading down to the East Sixteen Mile Creek ravine and the steep slope leading down from 5636 Trafalgar Road within the Drill Path are considered to be of low archaeological potential. The low-lying and wet areas (0.8%, 0.016 ha) within the Drill Path associated with courses of East Sixteen Mile Creek and the tributary of the East Branch of Sixteen Mile Creek are considered to be of low archaeological potential. The sections of paved roadway within the Pipe Laydown Area, the Drill Exit Area and the Drill Path have been previously disturbed (27.6%, 0.416 ha). The artificially built up area on the eastern side of Trafalgar Road within the Drill Path and the Drill Entry Area and the western ROW of Trafalgar Road have been previously assessed (15.1%, 0.227 ha).



7.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Ministry of Heritage, Sport, Tourism and Culture Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, 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*.

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. Nancy Watkins is the Registrar. Her telephone number is 416 212-7499 and her e-mail address is Nancy.Watkins@ontario.ca.



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9.0 IMAGES



Image 1: Woodlot, Tree Farm and Paved Roadway Conditions (looking northeast)



Image 2: Paved Surface of Roadway in Pipe Laydown Area, Drill Exit Area and Drill Path



Image 3: Overview of Woodlot, Paved Roadway and Tree Farm Conditions (looking northeast)



Image 4: Top of Slope Leading Down to East Sixteen Mile Creek (looking northeast)



Image 5: Ravine and Slope Leading Down to East Sixteen Mile Creek (looking northeast)



Image 6: East Sixteen Mile Creek (looking northeast)



Image 7: Woodlot East of East Sixteen Mile Creek (looking northeast)



Image 8: Steeply Slope from 5636 Trafalgar Road (looking north)



Image 9: 5636 Trafalgar Road (looking southwest)

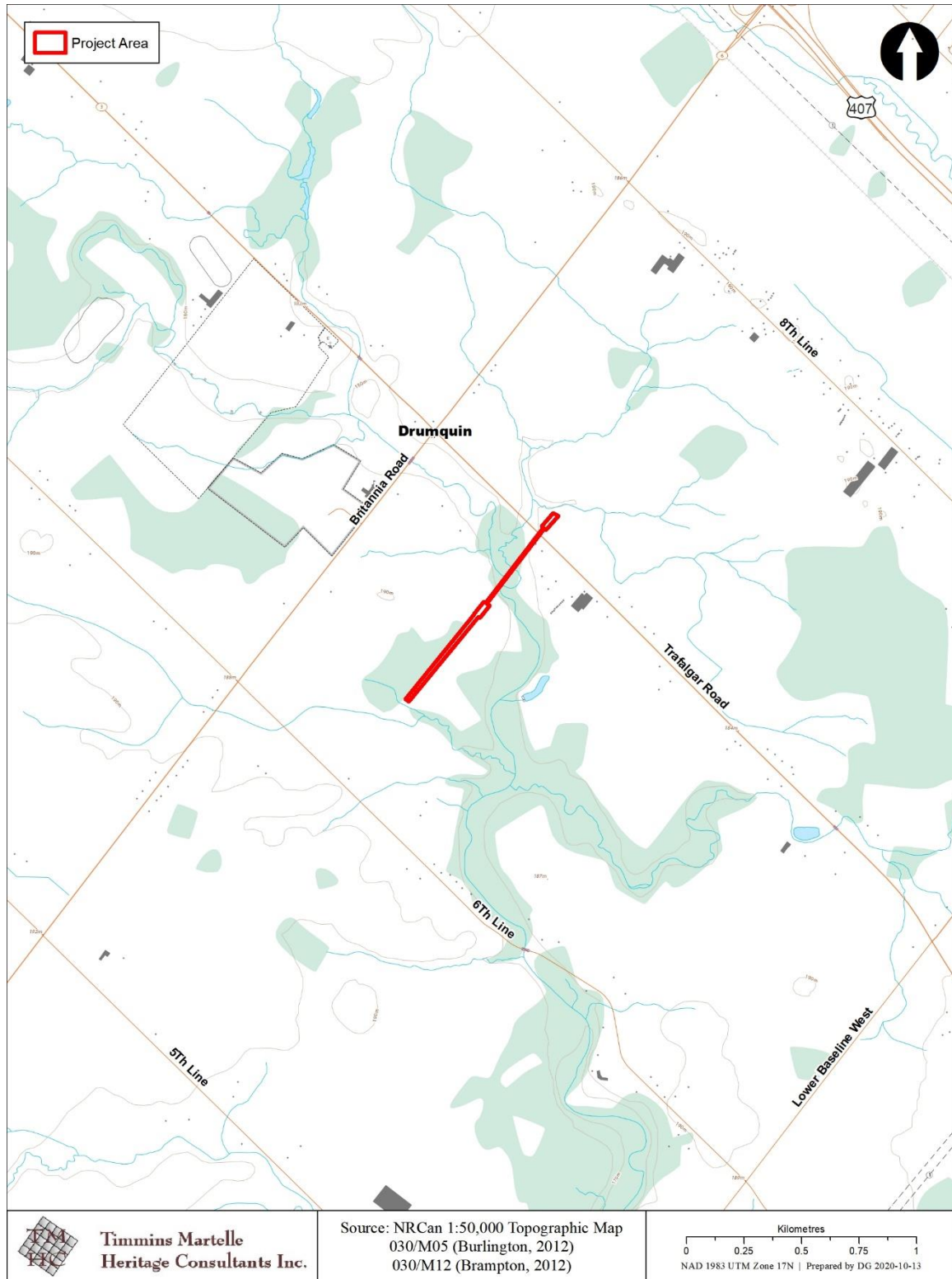


Image 10: Previously Assessed Area East of Trafalgar Road (looking northeast)



10.0 MAPS



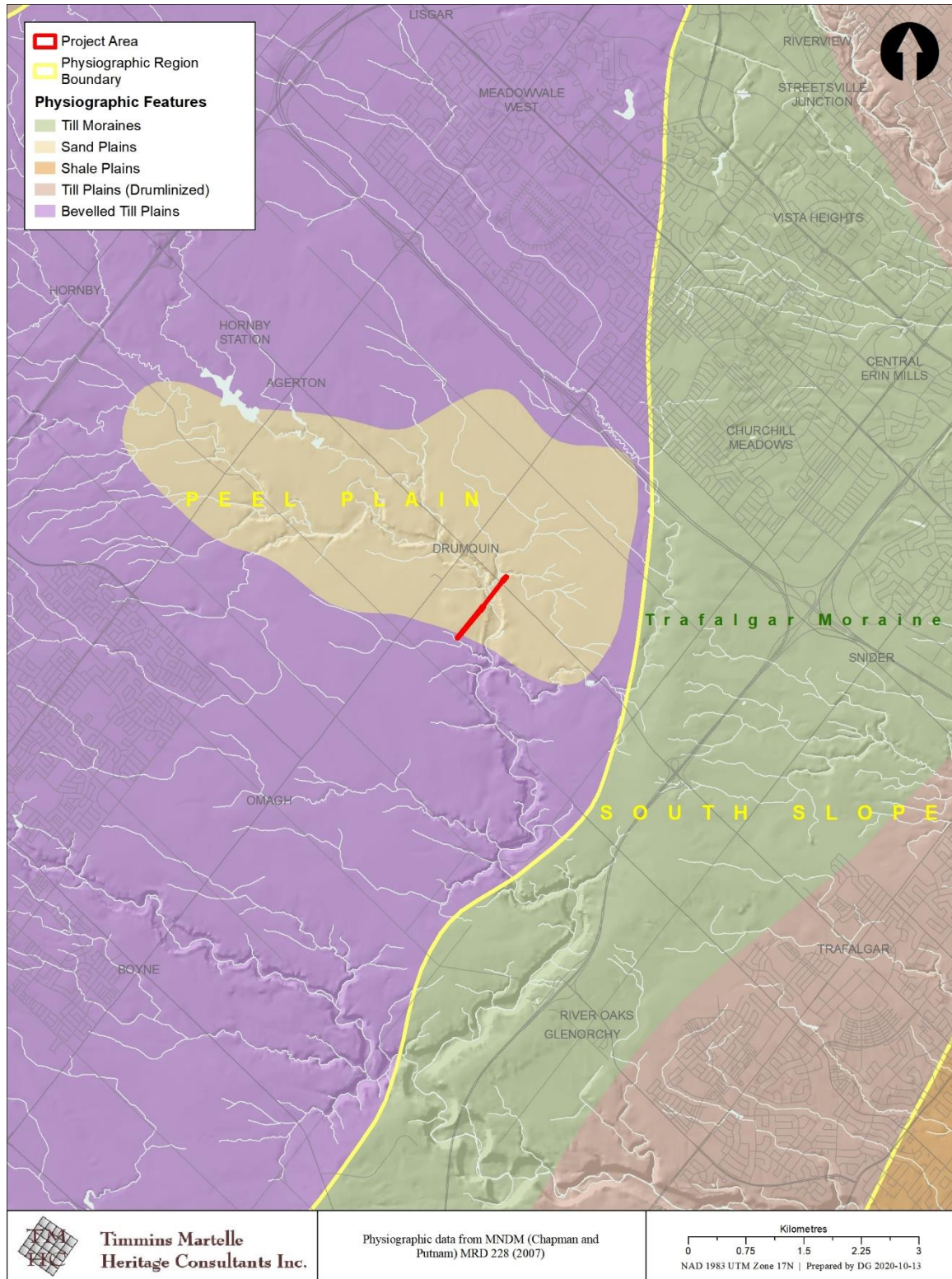


Map 1: Location of the Project Area in Milton, ON



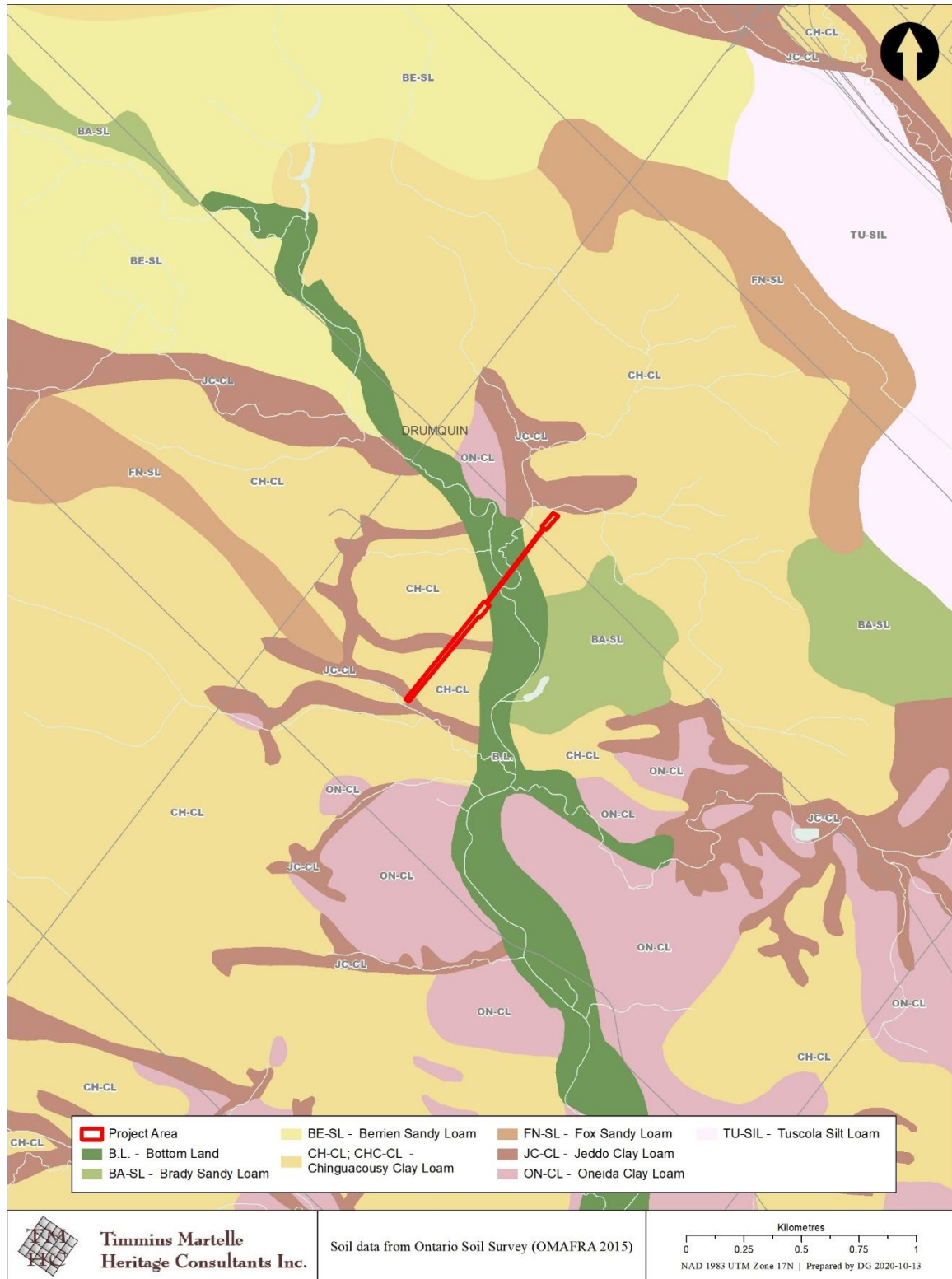
Map 2: Aerial Photograph Showing the Location of the Project Area in Milton



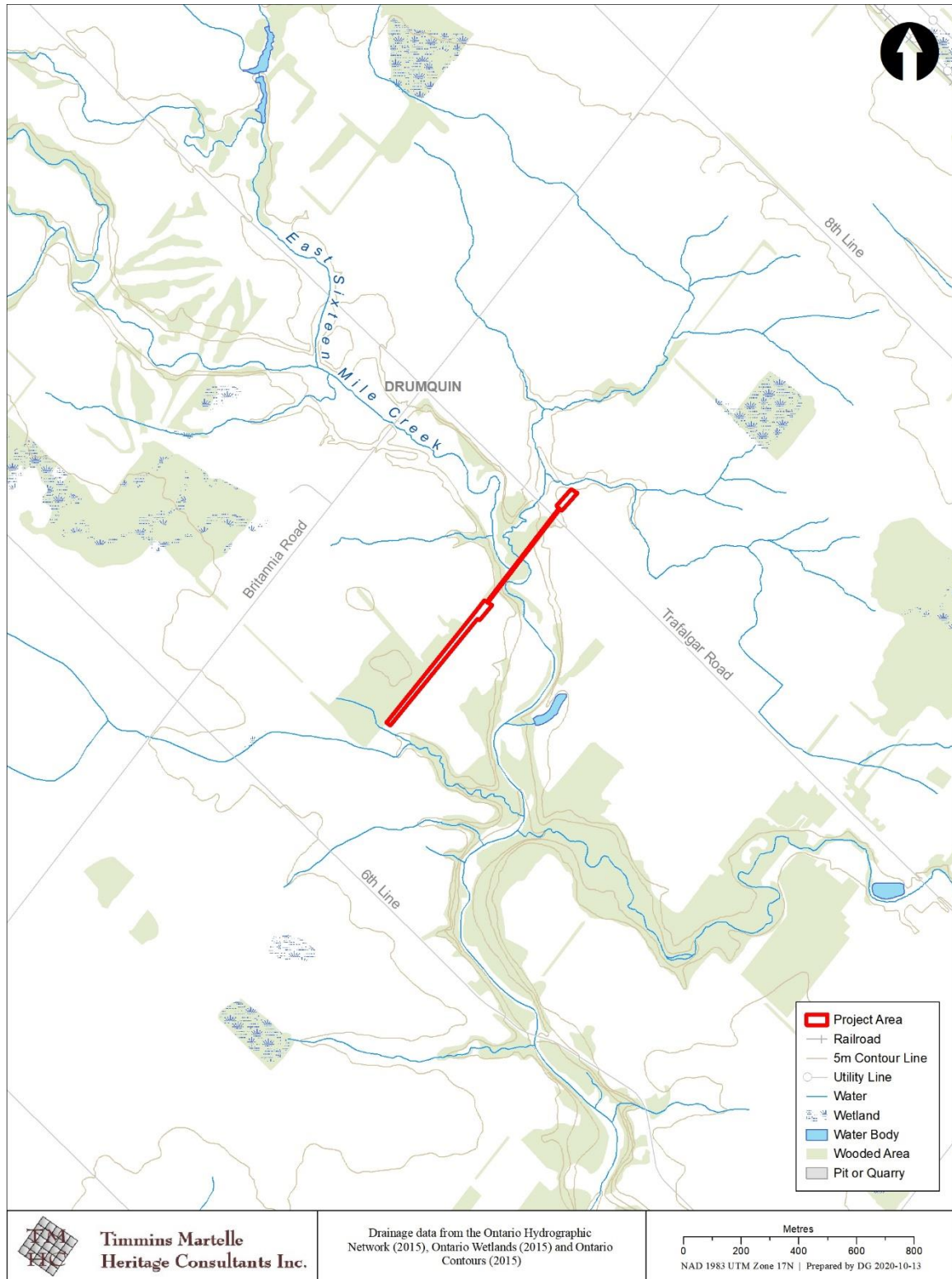


Map 3: Physiography Within the Vicinity of the Project Area

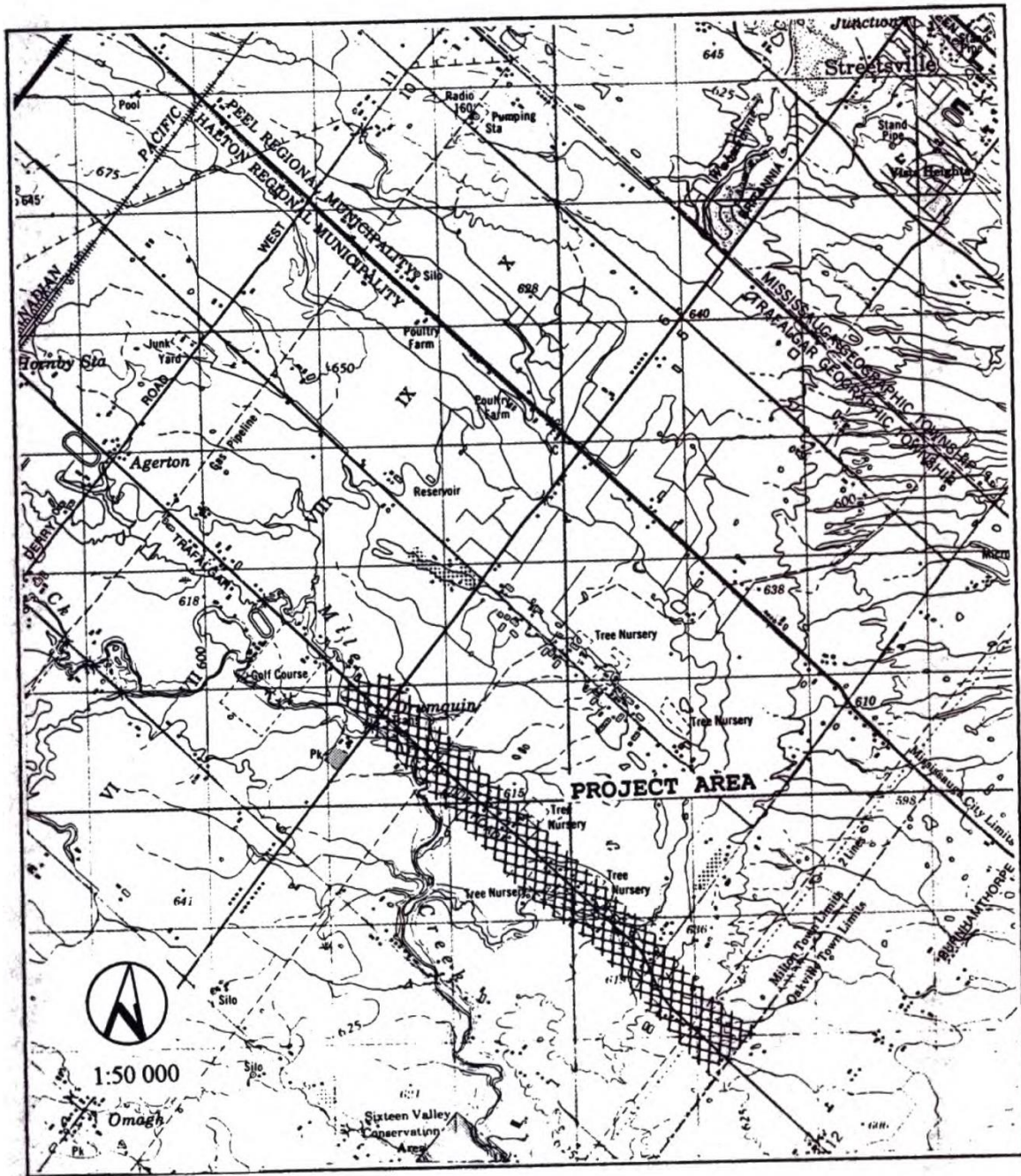




Map 4: Soils Within the Vicinity of the Project Area

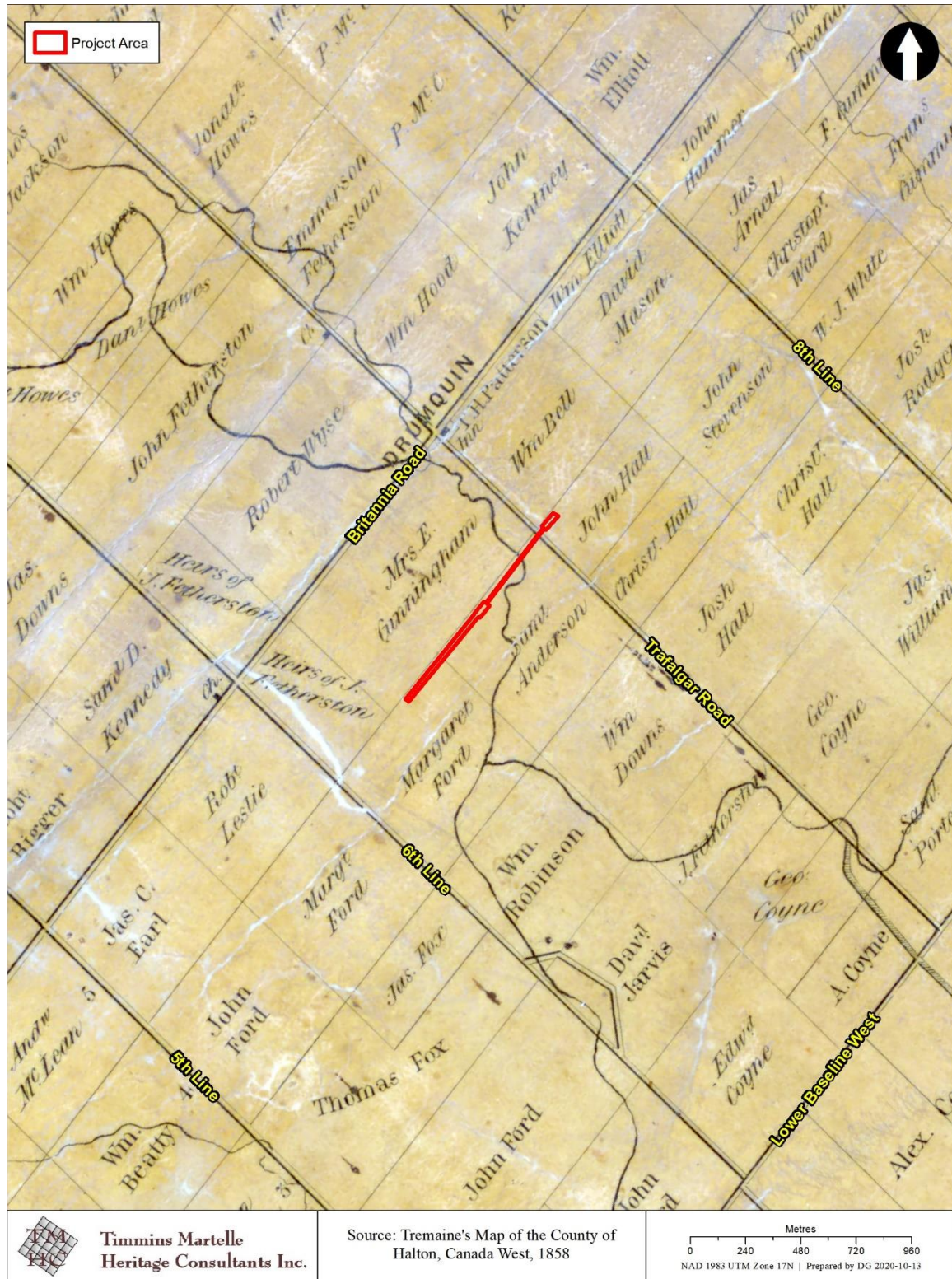


Map 5: Drainage Within the Vicinity of the Project Area

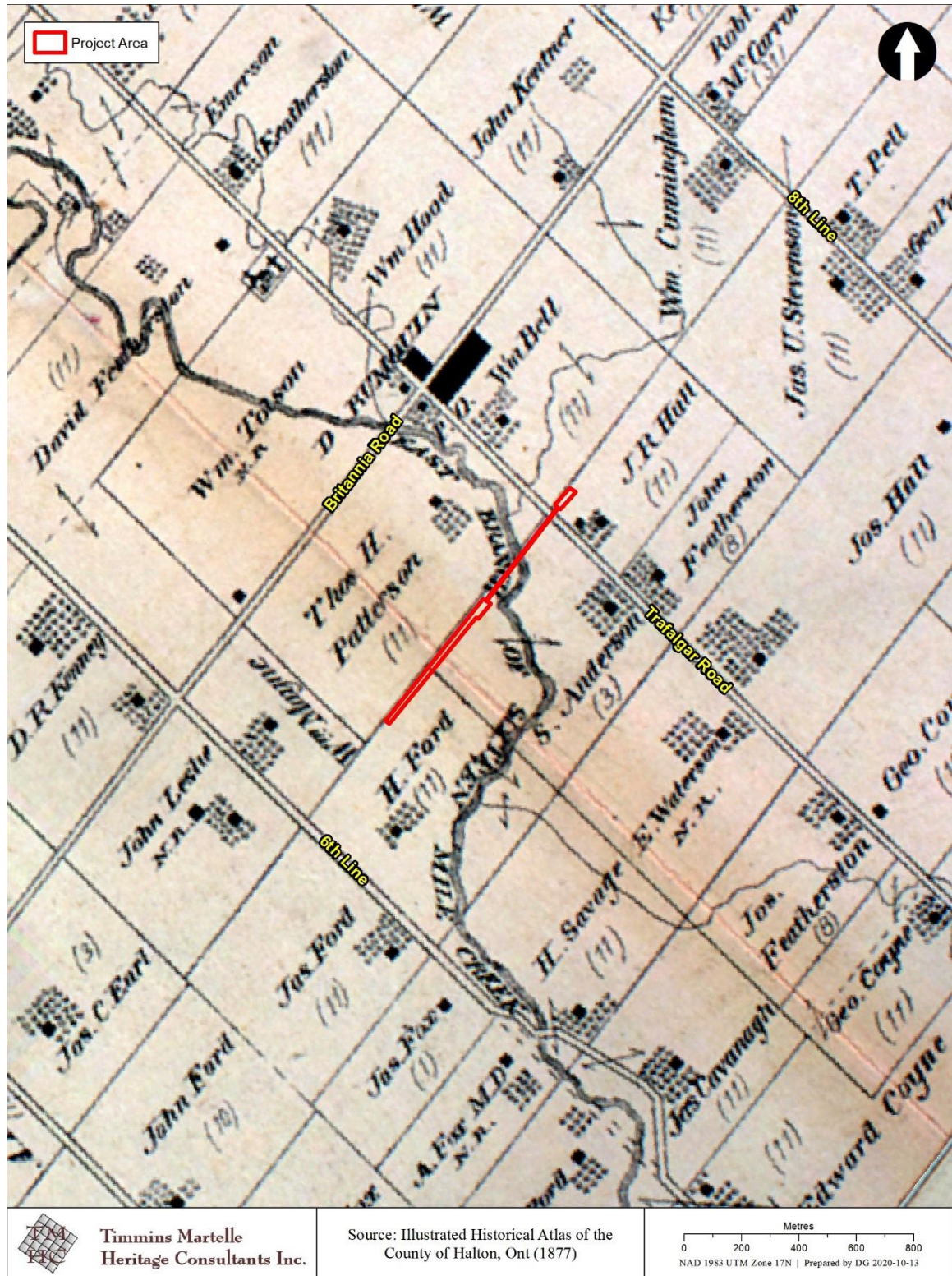


Map 6: Leslie Currie and Associates (1996) Stage 2 Project Area

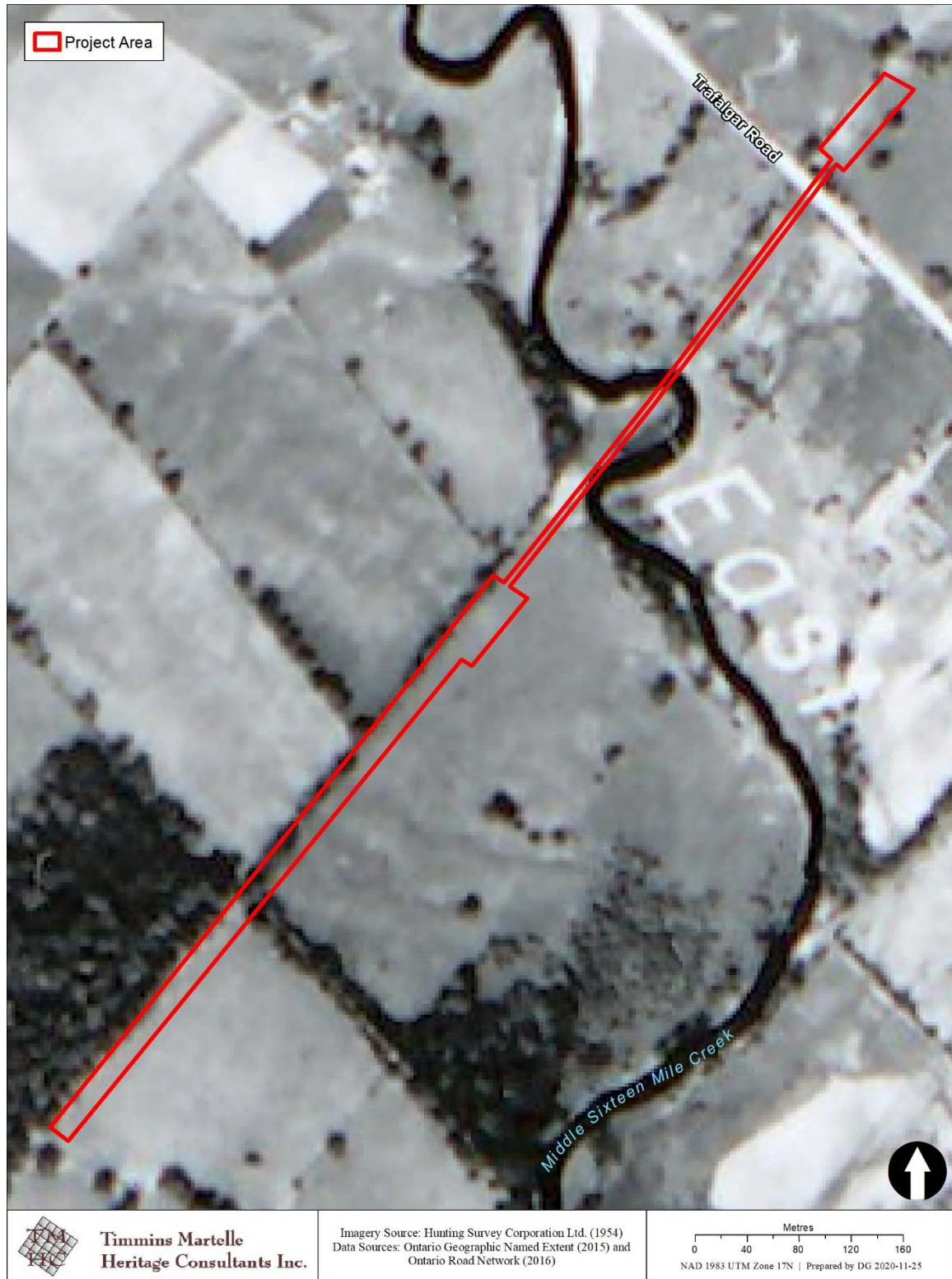




Map 7: Project Area Shown on an 1858 Map of Halton County, ON

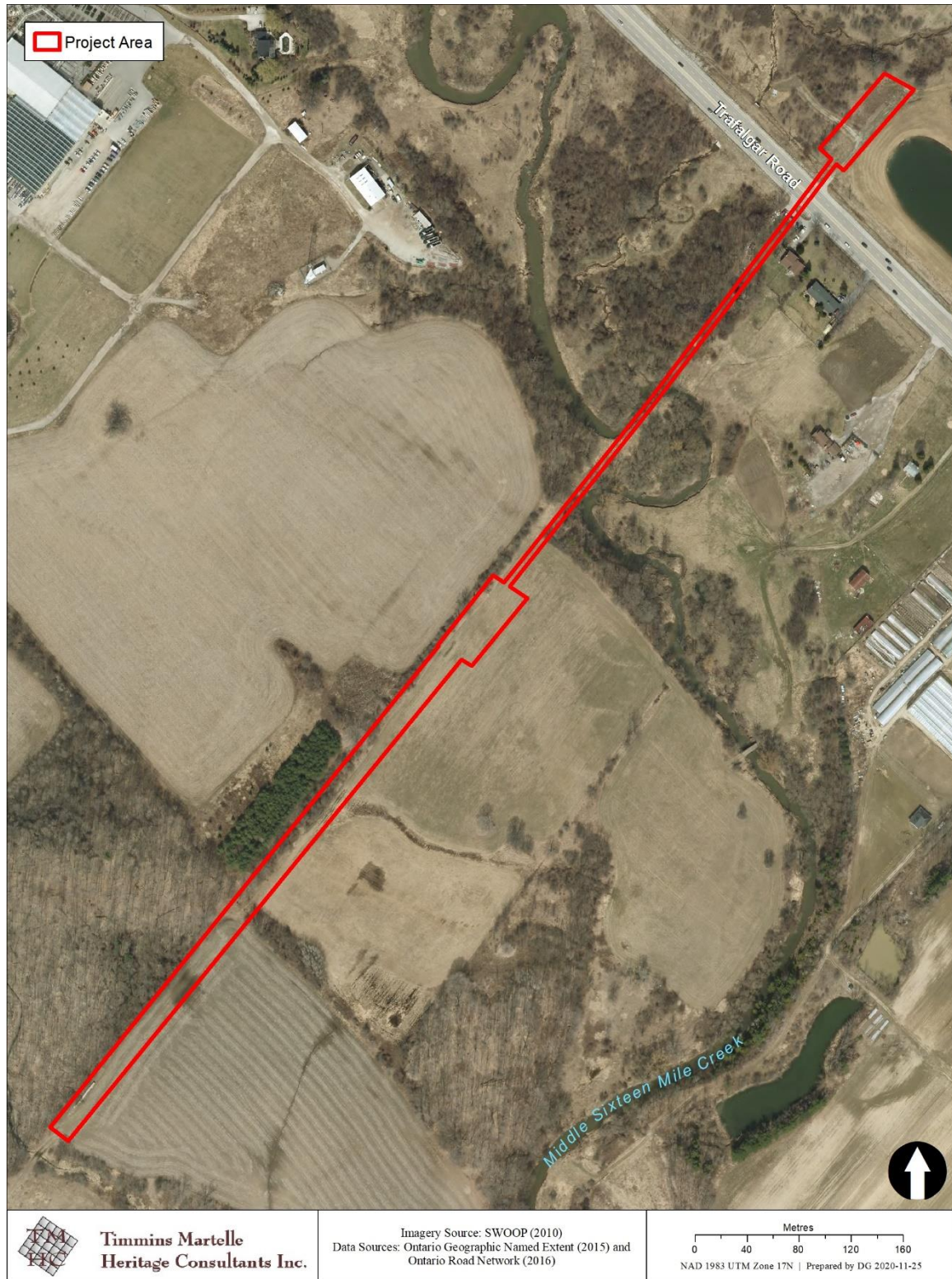


Map 8: Project Area Shown on an 1877 Map of Halton County, ON



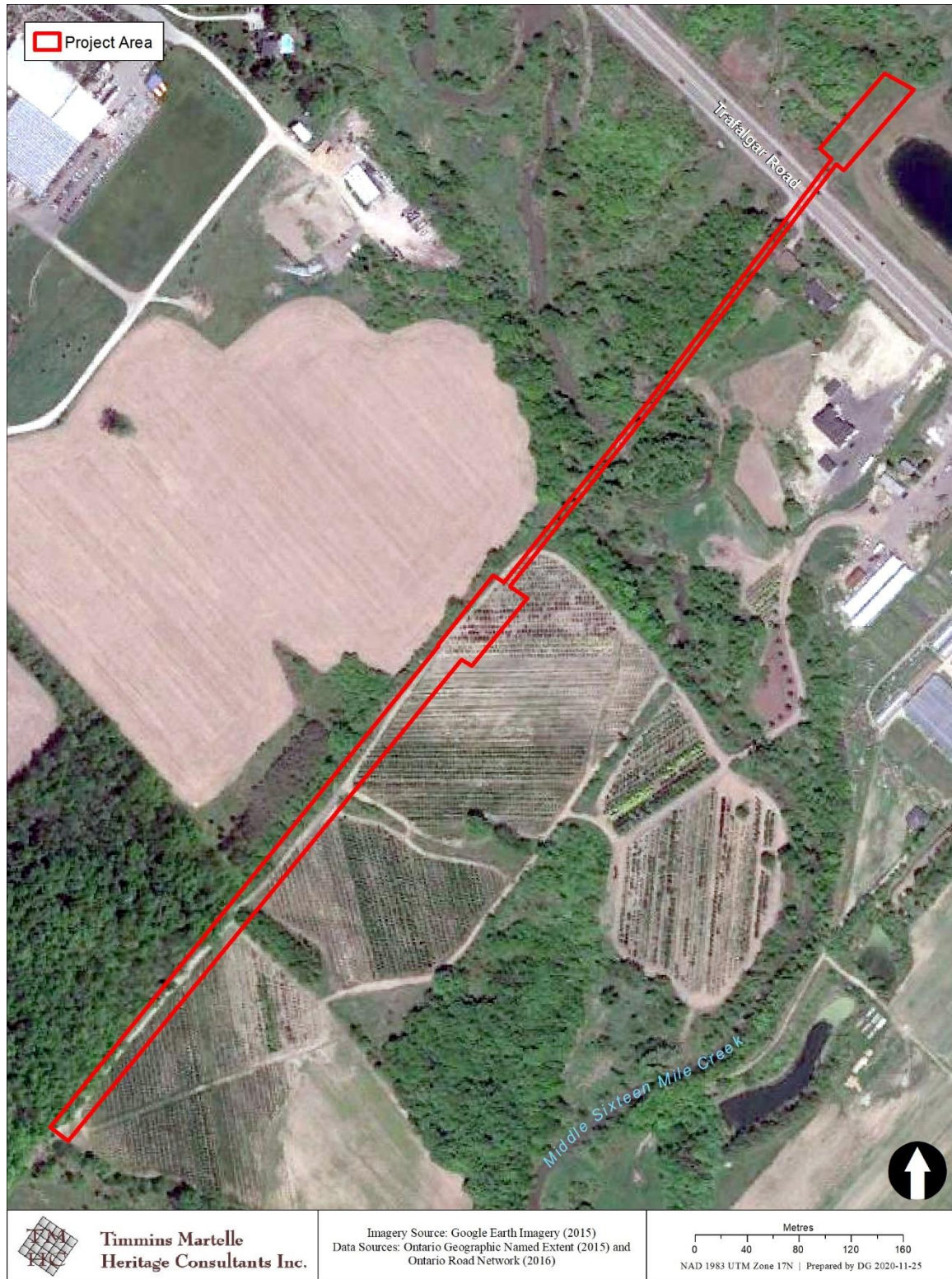
Map 9: Location of the Project Area Shown on a 1954 Aerial Photograph





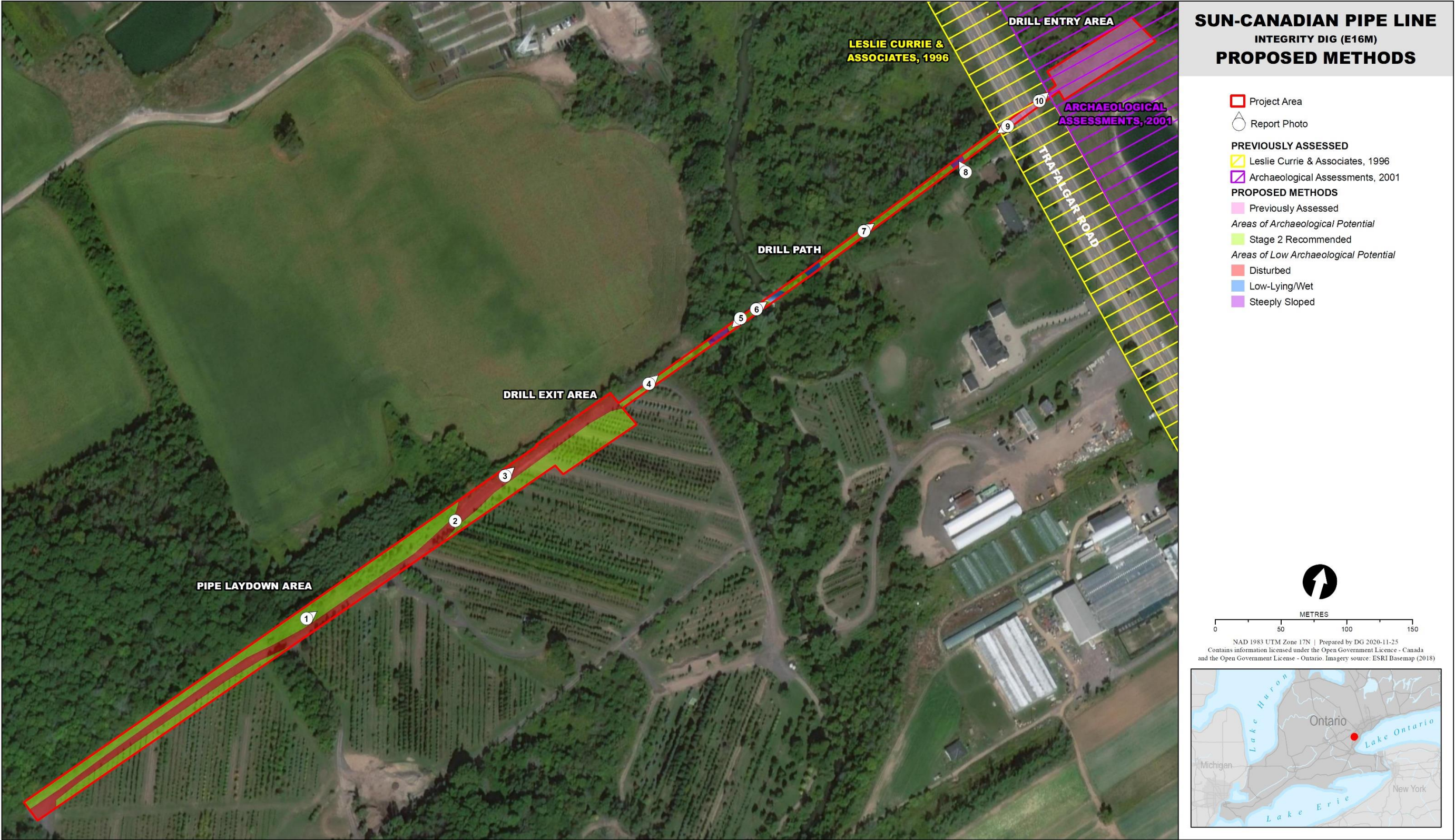
Map 10: Location of the Project Area Shown on a 2010 Aerial Photograph





Map 11: Location of the Project Area Shown on a 2015 Aerial Photograph





Map 12: Areas of Archaeological Potential

