



**Stage 1-2 Archaeological Assessment:
Proposed Anthony Pit (formerly
Proposed Tikal Pit Expansion)**

Part of Lot 22, Concession 8,
Puslinch Township, Wellington County,
Ontario

December 10, 2024

Prepared for:

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REVISED REPORT



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Executive Summary

Stantec Consulting Ltd. (Stantec) was retained by CBM Aggregates (CBM), a division of St. Marys Cement Inc., to complete a Stage 1-2 archaeological assessment for the CBM Aberfoyle Tikal Pit Expansion (the Project). As of 2024, the Project has been renamed to the Anthony Pit. Further, a Site Plan for the Project is being completed by an independent engineering firm and has not been finalized or available for Stantec's use for this archaeological assessment. The Property Boundary associated with the Project is approximately 24.1 hectares of land, located in part of Lot 22, Concession 8, Geographic Township of Puslinch, Wellington County, Ontario. At the request of CBM, the Stage 1 portion of the archaeological assessment examines the entirety of the Property Boundary (the study area), while the Stage 2 portion of the archaeological assessment examines only the Maximum Extraction Limits for the Project and an associated access road (the survey area). Thus, the Stage 2 survey area, located within the Property Boundary, is smaller and comprises approximately 14.3 hectares of scrubland, woodlot, and agricultural field. The archaeological assessment is being completed during the preliminary planning phase of the Project in accordance with the *Aggregate Resources Act* (Government of Ontario 1990a) and the *Aggregate Resources of Ontario: Technical Reports and Information Standards* (Government of Ontario 2020).

The Stage 1-2 archaeological assessment was completed under Project Information Form number P256-0721-2022 issued to Parker Dickson, MA by the Ministry of Citizenship and Multiculturalism (MCM). The Stage 1 archaeological assessment determined that the study area retained potential for the identification of archaeological resources. The Stage 2 archaeological assessment of the survey area was conducted between May 18, 2022, and June 27, 2022.

One new archaeological location was identified during the Stage 2 assessment of the survey area. Location 1 is a piece of chipping detritus (a broken flake) manufactured from Onondaga chert. In accordance with Section 7.8.4 Standard 1.b and Standard 2 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a), Location 1 retains no further cultural heritage value or interest. However, Stage 2 archaeological assessment was not completed for the portion of the study area expected to be excluded from the developable area of the Project. This portion of the study area retains archaeological potential and Stage 2 archaeological assessment is required. Thus, in accordance with the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a), **further archaeological assessment is required.**

Full and detailed recommendations are provided in the body of the report.

The MCM is asked to review the results presented and accept this report into the *Ontario Public Register of Archaeological Reports*.

The Executive Summary highlights key points from the report only; for complete information and findings, the reader should examine the complete report.



Project Personnel

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Acknowledgements

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**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY
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1.1 DEVELOPMENT CONTEXT

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The existing Aberfoyle – Tikal Aggregate Pit (Tikal Pit) is located on the southeast corner of Wellington Road 34 and Victoria Road South, in the Township of Puslinch, Wellington County. The Tikal Pit was operated until 2011 when available aggregate was removed, and operations ceased. The Tikal Pit, and a neighbouring aggregate pit (Dufferin Aggregate Pit) have been operated under Class A Licenses. As noted above, the proposed Anthony Pit was initially intended as an expansion site for the operations currently undertaken at the Tikal Pit; the Anthony Pit is now a separate and proposed aggregate pit.

1.1.1 Objectives

In compliance with the provincial standards and guidelines set out in the Ministry of Citizenship and Multiculturalism's (MCM) 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a), the objectives of Stage 1 are as follows:

- To provide information about the study area's geography, history, previous archaeological fieldwork, and current land conditions.
- To evaluate the study area's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property.
- To recommend appropriate strategies for the Stage 2 survey.



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To meet these objectives, Stantec archaeologists employed the following research strategies:

- A review of relevant archaeological, historical, and environmental literature pertaining to the study area.
- A review of the land use history, including pertinent historical maps.
- An examination of the *Ontario Archaeological Sites Database* to determine the presence of registered archaeological sites in and around the study area.
- A query of the *Ontario Public Register of Archaeological Reports* to identify any previous archaeological fieldwork within 50 metres of the study area.

In compliance with the provincial standards and guidelines set out in MCM's *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a), the objectives of the Stage 2 are as follows:

- Document archaeological resources within the study area.
- Determine whether the study area contains archaeological resources requiring further assessment.
- Recommend appropriate Stage 3 assessment strategies for archaeological sites identified.

CBM provided access to the study area to conduct the required archaeological fieldwork activities.

1.2 HISTORICAL CONTEXT

"Contact" is typically used as a chronological benchmark when discussing Indigenous archaeology in Canada and describes the contact between Indigenous and European cultures. The precise moment of contact is a constant matter of discussion. Contact in what is now the province of Ontario is broadly assigned to the 16th century (Loewen and Chapdelaine 2016).

1.2.1 Post-Contact Indigenous Resources

Broadly, the post-Contact Indigenous occupation of southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking communities by the New York State Iroquois and the subsequent arrival of Algonkian-speaking groups from northern Ontario at the end of the 17th century and the beginning of the 18th century (Konrad 1981; Schmalz 1991). Numerous Indigenous groups and communities are associated with the post-contact occupation of southern Ontario and the general area of the Project.

At the turn of the 17th century, the region of the study area was occupied by Iroquoian populations who are historically described as the *Neutre* (by the French), *Neutral* (by the English), or the *Atawandaron* (by the Huron-Wendat); their autonym is not conclusively known (Birch 2015). This group may be ancestral Haudenosaunee as they had similar culture, language, and ceremonies and were considered by the Haudenosaunee to be under the Great Law governance (Hill 2017). To the north was territory occupied by the Wendat-Tionontati (Huron-Petun) (Heidenreich 1978). The Five Nations Iroquois, located in present-day upstate New York, failed to convince the Wendat-Tionontati to join them in an alliance



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(Warrick 2013). In 1649, the Seneca and the Mohawk led a campaign into southern Ontario and dispersed the Atawandaron and the Wendat-Tionontati, and the Seneca established dominance over the region (Heidenreich 1978; Konrad 1981).

In 1667, surviving Huron-Wendat warriors joined alliance with the French-allied Ojibwa and Mississaugas to counterattack the Iroquois who had settled along the north shore of Lake Ontario. By 1690, Ojibwa (Anishinaabe) speaking people had begun moving south into the lower Great Lakes basin (Konrad 1981; Rogers 1978). Mississauga oral traditions, as told by Chief Robert Paudash and recorded in 1905, indicate that after the Mississauga defeat of the Mohawk, the Mohawk retreated to their homeland south of Lake Ontario and a peace treaty was negotiated between those groups around 1695 (Paudash 1905). Upon the Mississaugas' return they decided to settle permanently in southern Ontario. The Mississaugas' settled and inhabited a large area at the western end of Lake Ontario throughout the 1700s and into the 1800s. Between 1695 and the mid-1820s the Mississaugas' continued to follow a yearly cycle of resource harvest and movement throughout their southern Ontario territory (Praxis Research Associates n.d.).

With the end of the American Revolutionary War in 1783, the Six Nations Iroquois (Haudenosaunee) were forced to leave their traditional homeland in New York State and elsewhere after the 1783 Treaty of Paris surrendered their lands to the Americans (Hill 2017). The Six Nations Iroquois (Haudenosaunee) therefore moved into their previous hunting grounds of southern Ontario in land provided by the British. The largest group settled in the Grand River valley near Brantford, Ontario, to become the Six Nations of the Grand River. The Indigenous economy from the turn of the 18th century focused on fishing and the fur trade, supplemented by agriculture and hunting.

Despite the differentiation among these groups in Euro-Canadian sources, there was a considerably different view by Indigenous groups concerning their self-identification during the first few centuries of European contact. These peoples relied upon kinship ties that cut across European notions of nation identity (Bohaker 2006:277-283). Many of the British-imposed names such as Chippewa, Ottawa, Potawatomi, or Mississauga artificially separated how self-identified Indigenous peoples' classified themselves; these groups were culturally and socially more alike than contemporary European documentation might indicate (Bohaker 2006:1-8).

The expansion of the fur trade led to increased interaction between European and Indigenous people, and ultimately intermarriage between European men and Indigenous women. During the 18th century, the progeny of these marriages began to identify as Métis and no longer identified directly with either their paternal or maternal cultures. The ethnogenesis of the Métis progressed with the establishment of distinct Métis communities along the major waterways in the Great Lakes of Ontario. Métis communities were primarily focused around the upper Great Lakes and along Georgian Bay, however Métis people have historically lived throughout Ontario (Métis Nation of Ontario 2023; Stone and Chaput 1978:607-608).

The study area falls within the historical and traditional territory of several Indigenous communities, including but not limited to the Mississaugas of the Credit First Nation (Wybenga and Dalton 2018), the Six Nations of the Grand River, and the Haudenosaunee Confederacy. Since contact with European explorers and immigrants, and, later, with the establishment of provincial and federal governments (the



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Crown), the lands within Ontario have been included in various treaties, land claims, and land cessions. Though not an exhaustive list, Morris (1943) provides a general outline of some of the treaties within the Province of Ontario from 1783 to 1923. While it is difficult to exactly delineate treaty boundaries today, an approximate outline of the treaty lands described by Morris (1943) is provided in Figure 3. According to Morris (1943), the Project is situated within the limits of the 1792 indenture of the 1784 Between the Lakes Purchase between the Crown and the Mississaugas, later described as Treaty Number 3. Treaty Number 3 was:

...made with the Mississa[ug]a Indians 7th December, 1792, though purchased as early as 1784. This purchase in 1784 was to procure for that part of the Six Nation Indians coming into Canada a permanent abode. The area included in this Treaty is, Lincoln County excepting Niagara Township; Saltfleet, Binbrook, Barton, Glanford and Ancaster Townships, in Wentworth County; Brantford, Onondaga, Tusc[a]r[o]ra, Oakland and Burford Townships in Brant County; East and West Oxford, North and South Norwich, and Dereham Townships in Oxford County; North Dorchester Township in Middlesex County; South Dorchester, Malahide and Bayham Township in Elgin County; all Norfolk and Haldimand Counties; Pelham, Wainfleet, Thorold, Cumberland and Humberstone Townships in Welland County.

(Morris 1943:17-18)

As demonstrated above, the nature of Indigenous settlement size, population distribution, and material culture shifted as European settlers encroached upon their territory. Despite this shift, however, “written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to ... systems of ideology and thought” (Ferris 2009:114). As a result, Indigenous peoples have left behind archaeological resources throughout southern Ontario which show continuity with past peoples, even if they have not been recorded in historical Euro-Canadian documentation.

1.2.2 Euro-Canadian Resources

In 1791, the Provinces of Upper Canada and Lower Canada were created from the former Province of Quebec by an act of British Parliament. At this time, Colonel John Graves Simcoe was appointed as the Lieutenant Governor of Upper Canada and was tasked with governing the new province, directing its settlement, and establishing a constitutional government modelled after that of Britain. In 1792, Simcoe divided Upper Canada into 19 counties consisting of previously settled lands, new lands opened for settlement, and lands not yet acquired by Crown. These new counties stretched from Essex in the west to Glengarry in the east.

Originally belonging to the District of Wellington formed in 1838, Wellington County was named after Arthur Wellesley, the First Duke of Wellington. In 1854, Wellington County became an individual entity incorporating 12 townships and towns, including the Township of Guelph and the Township of Puslinch, now the City of Guelph (Mika and Mika 1983).



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The Township of Puslinch was surveyed by David Gibson between 1828 and 1831 and was named for Puslinch in Devonshire, England (Mika and Mika 1983). Originally a Clergy Reserve, the first clergy reserve lot was sold to William Carroll in 1829 (Mika and Mika 1983). European settlement had begun prior to 1828; however, it was not until the completion of the survey two years later that township lands were offered for sale at public auction. Puslinch Township's first school was erected in the early 1830s and later moved into a log building that also served as a church. The first township meeting was held in 1836 near Aberfoyle on Lot 18, Concession 7. From 1846 until 1849, Puslinch was represented on the Wellington district council and, in 1854, Puslinch became part of the newly formed independent County of Wellington (Mika and Mika 1983). The first council meeting took place in 1850 and in 1867 a township hall was erected; formerly, council meetings took place at various taverns throughout the township. Woolen and saw mills provided the base of early industry in the region, as well as agriculture, which continues to be an important component of the modern economy (Puslinch Historical Society 2018).

1.2.2.1 Lot 22, Concession 8

The 1861 map of the County of Wellington (Leslie and Wheelock 1861) depicts a portion of the village of Aberfoyle on the far west end of Lot 22, Concession 8 (Figure 4). The map also depicts a store and sawmill on the property associated with the village of Aberfoyle. Most of the west half of the lot depicts Patrick McMahan (Mahon) as the occupant. The east half of Lot 22 had been spilt into north and south parcels, with D. Kane on the north half, and Mrs. Haggarty on the south half (Figure 4). No structures are depicted in the east half of the lot. In the *Gazetteer and Directory of the County of Wellington 1867* (Irwin and Burnham 1867:79), Daniel Kane and Andrew Haggarty are listed as householders on Lot 22, Concession 8.

The 1877 Township of Puslinch map depicts P. Mahon on the west half, D. Cain on the north quarter of the east half, and H. Haggarty on the south quarter of the east half (Figure 5). On the west half, a structure is depicted fronting the roadway in the village of Aberfoyle. A large pond is also depicted on the property associated with the mill in Aberfoyle. On the east half, a structure is depicted on the southwest corner of Haggarty's property.

The 1906 Township of Puslinch map depicts the west half of the property associated with the development of the village of Aberfoyle along Brock Road, with the remainder of the west half of the lot, under the Peter Mahon estate (Figure 6). The large pond is depicted centrally on the west half. Philip Crumliiss is depicted on the east half of the lot, with a structure off present-day Victoria Road South. The 20th century development of the west half of Lot 22 remained associated with the village of Aberfoyle.

It must be remembered that historical county atlases were produced primarily to identify factories, offices, residences, and landholdings of subscribers and were funded by subscription fees. Landowners who did not subscribe were not always listed on the maps (Caston 1997:100). As such, structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984). Further, review of historical mapping, including treaty maps, also has inherent accuracy difficulties due to potential error in georeferencing. Geo-referencing is conducted by assigning spatial coordinates to fixed locations and using these points to spatially reference the remainder of the map. Due to changes in "fixed" locations



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over time (e.g., road intersections, road/rail alignments, watercourses, etc.), errors/difficulties of scale and the relative idealism of historical cartography, historical maps may not translate accurately into real space points. This may provide obvious inconsistencies during historical map review.

1.2.3 20th and 21st Century Development

Aerial photography demonstrates that the study area was predominantly agricultural field and scrubland in the mid-20th century (Figure 7). Aerial photography from 2000 and 2010, however, demonstrates that a portion of the study area had been used as an informal aggregate pit and subject to deep and extensive land alteration (Figure 8).

1.3 ARCHAEOLOGICAL CONTEXT

1.3.1 The Natural Environment

The study area is situated within the Horseshoe Moraines physiographic region of southern Ontario. The physiographic region is characterized by a series of broad, horseshoe-shaped glacial moraines which flank the uplands that lie to the west of the Niagara Escarpment. Specifically, the study area is located just south of the Paris and Galt moraines that are part of an extensive moraine network in southern Ontario. The Paris Moraine was formed approximately 12,000 to 13,000 years ago by the Ontario ice-lobe as it retreated into the Lake Ontario basin. The Galt Moraine was deposited during a re-advance and stagnation of the Ontario ice lobe (Blackport Hydrogeology Inc. 2009:56).

The Paris moraine runs from Acton to Cambridge and is a high boulder ridge. Within the township of Puslinch, the Paris Moraine extends from Arkell, in the east, to Puslinch Lake, in the west. At the community of Arkell, the moraine is steep at an elevation of 388.62 metres, the highest point in the township, and is also the broadest with a width of approximately five kilometres. The moraine slopes to the southwest where it splits into two ridges (Head 1963:11-12). The Galt Moraine runs south and parallel to the Paris Moraine. The Galt Moraine has a height of 335.28 metres in the east and slopes to 304.8 metres in the west. Both moraines are composed mostly of Wentworth Till that is brown to reddish silty sand or sandy silt till (Blackport Hydrogeology Inc. 2009:56). Associated with the moraines is a system of old spillways with broad gravel and sand terraces and swampy floors. The study area is composed of a central spillway with peat and muck to the north and till moraines to the south. The study area includes, and is surrounded by, provincially evaluated wetlands (see Figure 2). In addition, an unevaluated wetland is also noted within the study area (see Figure 2).

Potable water is the single most important resource for any extended human occupation or settlement and since water sources in southwestern Ontario have remained relatively stable over time, current proximity to drinkable water is regarded as a useful index for the evaluation of archaeological site potential. In fact, distance to current water is one of the most used variables for predictive modeling of archaeological site location in Ontario. The closest extant source of potable water to the study area is Aberfoyle Creek, located approximately 300 metres to the south, and 600 metres to the northwest.



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1.3.2 Pre-Contact Indigenous Resources

It has been demonstrated that Indigenous people began occupying southern Ontario as the Laurentide glacier receded as early as 11,000 years ago (Ellis and Ferris 1990:13). Much of what is understood about the lifeways of these Indigenous peoples is derived from archaeological evidence and ethnographic analogy. In Ontario, Indigenous material culture prior to the period of contact with European peoples has been distinguished into archaeological periods based on observed changes in material culture. These archaeological periods are largely based on observed changes in formal lithic tools and are separated into the Early Paleo, Late Paleo, Early Archaic, Middle Archaic, and Late Archaic periods. Following the advent of ceramic technology in the Indigenous archaeological record, archaeological periods are separated into the Early Woodland, Middle Woodland, and Late Woodland periods, based primarily on observed changes in formal ceramic decoration.

It should be noted that these archaeological periods do not necessarily represent specific cultural identities but are a useful paradigm for understanding changes in Indigenous material culture through time. Table 1 provides a general outline of the cultural chronology of the study area, summarized from Ellis and Ferris (1990). The provided periods are based on the “Before Present” (BP) calendar notation system, wherein BP stands for the years before the present. The “Present Year” is set in the calendar year 1950.

Table 1: Generalized Cultural Chronology of the Study Area

Period	Characteristics	Time Period	Comments
Early Paleo	Fluted Projectiles	10,950 – 10,350 BP	Spruce parkland, caribou hunters
Late Paleo	Hi-Lo Projectiles	10,350 – 9,950 BP	Smaller but more numerous sites
Early Archaic	Kirk and Bifurcate Base Points	9,950 – 7,950 BP	Slow population growth
Middle Archaic	Brewerton-like points	7,950 – 4,450 BP	Environment similar to present
Late Archaic	Narrow Points	4,450 – 3,750 BP	Increasing site size
	Broad Points	3,750 – 3,450 BP	Large chipped lithic tools
	Small Points	3,450 – 3,050 BP	Introduction of bow hunting
Terminal Archaic	Hind Points	3,050 – 2,900 BP	Emergence of true cemeteries
Early Woodland	Meadowood Points	2,900 – 2,350 BP	Introduction of pottery
Middle Woodland	Dentate/Pseudo-Scallop Pottery	2,350 – 1,400 BP	Increased sedentism
	Princess Point	1,400 – 1,050 BP	Introduction of corn
Late Woodland	Early Late Woodland	1050 – 650 BP	Emergence of agricultural villages
	Middle Late Woodland	650 – 550 BP	Long longhouses (100+ metres)
	Late Late Woodland	550 – 350 BP	Tribal warfare and displacement
Contact Indigenous	Various Groups	350 – 75 BP	Early written records and treaties
Late Historical	Euro-Canadian	200 BP – present	European settlement



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Between 10,950 and 9,950 BP, Indigenous populations were sustained by hunting, fishing, and foraging and lived a relatively mobile existence across an extensive geographic territory. Despite these wide territories, social ties were maintained between groups. One method of maintaining social ties was through gift exchange, evident through exotic lithic material documented on many sites (Ellis 2013:35-40).

By approximately 9,950 BP, evidence existed and became more common for producing ground-stone tools such as axes, chisels, and adzes. These tools themselves are believed to be indicative specifically of woodworking. This evidence can be extended to indicate an increase in craft production and, arguably, craft specialization. This latter statement is also supported by evidence dating to approximately 8,950 BP of ornately carved stone objects which would be laborious to produce and have explicit aesthetic qualities (Ellis 2013:41). This is indirectly indicative of changes in the social organization which permitted individuals to devote time and effort to craft specialization. Since 9,950 BP, the Great Lakes basin experienced a low-water phase, with shorelines significantly below current lake levels (Stewart 2013: Figure 1.1.C). It is presumed that the majority of human settlements would have been focused along these former shorelines. At approximately 8,450 BP, the climate had warmed considerably since the recession of the glaciers, and the environment had grown more similar to the present day. By approximately 6,450 BP, evidence exists from southern Ontario for using native copper, i.e., naturally occurring pure copper metal (Ellis 2013:42). The recorded origin of this material along Lake Superior's north shore indicates extensive exchange networks across the Great Lakes basin.

At approximately 5,450 BP, the isostatic rebound of the North American plate following the melt of the Laurentide glacier had reached a point that significantly affected the Great Lakes basin watershed. Prior to this, the Upper Great Lakes had drained down the Ottawa Valley via the French River and Mattawa River valleys. Following this shift in the watershed, the drainage course of the Great Lakes basin changed to its present course. This also prompted a significant increase in water-level to approximately current levels (with a brief high-water period); this change in water levels is believed to have occurred catastrophically (Stewart 2013:28-30). This change in geography coincides with the earliest evidence for cemeteries (Ellis 2013:46). Between 4,850 and 4,450 BP, the earliest evidence exists for the construction of fishing weirs (Ellis et al. 1990, Figure 4.1; Stevens 2004). Construction of these weirs would have required a large amount of communal labour and are indicative of the continued development of the social organization and communal identity. The large-scale procurement of food at a single location also has significant implications for the permanence of settlement within the landscape. This period is also marked by further population increase, and by 3,450 BP, evidence exists for substantial permanent structures (Ellis 2013:45-46).

By approximately 2,900 BP, the earliest evidence exists for populations using ceramics. Populations are understood to have continued to exploit natural resources seasonally. However, this advent of ceramic technology correlated with the intensive exploitation of seed foods such as goosefoot and knotweed as well as mast such as nuts (Williamson 2013:48). The use of ceramics implies changes in the social organization of food storage, food cooking, and diet changes. Fish also continued to be an important facet of the economy at this time. Evidence continues to exist for the expansion of social organization (including hierarchy), group identity, ceremonialism (particularly in burial), interregional exchange throughout the Great Lakes basin and beyond, and craft production (Williamson 2013:48-54).



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By approximately 1,400 BP, evidence emerged for the introduction of maize into southern Ontario. This crop would have initially only supplemented Indigenous people's diet and economy (Birch and Williamson 2013:13-14). Maize-based agriculture gradually became more important to societies. By approximately 1,050 BP, permanent communities emerged that were primarily focused on agriculture and the storage of crops, with satellite locations oriented toward procuring other resources such as hunting, fishing, and foraging. By approximately 700 BP, evidence exists for the common cultivation of historic Indigenous cultigens, including maize, beans, squash, sunflower, and tobacco. The extant archaeological record demonstrates many cultural traits similar to historical Indigenous nations (Williamson 2013:55).

The study area is located within the understood territory of the ancestral Neutral. Specifically, the study area is located between two well-documented settlement sequences (the Kitchener cluster and the Spencer-Bronte Creek cluster) which both include sites dating to the 15th century, i.e., the Moyer site and the Crawford Lake site (Lennox and Fitzgerald 1990: Table 13.1).

1.3.3 Registered Archaeological Sites and Surveys

In Canada, archaeological sites are registered within the Borden system, a national grid system designed by Charles Borden in 1952 (Borden 1952). The grid covers the entire surface area of Canada and is divided into major units containing an area that is two degrees in latitude by four degrees in longitude. Major units are designated by upper case letters. Each major unit is subdivided into 288 basic unit areas, each containing an area of 10 minutes in latitude by 10 minutes in longitude. The width of basic units reduces as one moves north due to the curvature of the earth. In southern Ontario, each basic unit measures approximately 13.5 kilometres east-west by 18.5 kilometres north-south. In northern Ontario, adjacent to Hudson Bay, each basic unit measures approximately 10.2 kilometres east-west by 18.5 kilometres north-south. Basic units are designated by lower case letters. Individual sites are assigned a unique, sequential number as they are registered. These sequential numbers are issued by the MCM who maintain the *Ontario Archaeological Sites Database*. The study area under review is located within Borden Block AiHa.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information and Protection of Privacy Act* (Government of Ontario 1990b). The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to media capable of conveying location, including maps, drawings, or textual descriptions of a site location. The MCM will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

A search of the *Ontario Archaeological Sites Database* has shown that six archaeological sites have been registered within a one-kilometre radius of the study area (Government of Ontario 2023). Table 2 provides a summary of the registered archaeological sites near the study area. Of these sites, none are located within the study area, or within a 50-metre radius of the study area.



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Table 2: Registered Archaeological Sites within One Kilometre of the Study Area

Borden Number	Site Name	Temporal or Cultural Affiliation	Site Type
AiHa-39	Tikal 1	Indigenous	Campsite
AiHa-40	Hughson H1	Indigenous	Scatter
AiHa-41	Gillespie Site	Indigenous	Tool Manufacturing Site
AiHa-42	Tikal 4	Indigenous (Middle Archaic)	Scatter
AiHa-46	Cock Burn	Euro-Canadian	Homestead
AiHa-47	Audrey Meadows	Indigenous	Scatter

Based on a search of the *Ontario Public Register of Archaeological Reports* (Government of Ontario 2024), one previous archaeological assessment has been completed within 50 metres of the study area. However, as the MCM does not currently maintain an accessible or searchable geographical database of archaeological assessment areas or study areas by coordinates, and older archaeological assessments may be entered in the database with little geographic information, additional archaeological assessments and studies may have occurred, or are occurring, within or adjacent to the current study area.

L.R. Bud Parker completed a Stage 1 to 3 archaeological assessment for a proposed aggregate pit in the southwest half of Lot 21, Concession 9, Township of Puslinch, County of Wellington, Ontario (Parker 1998). Overall, 14 archaeological findspots were identified by Parker (1998), with four findspots registered with the MCM: AiHa-39, AiHa-40, AiHa-41, and AiHa-42. Stage 3 archaeological assessment of AiHa-39, AiHa-40, AiHa-41, and AiHa-42 was completed by Parker (1998) and no further archaeological assessment was recommended. None of the archaeological findspots or sites identified by Parker (1998) are within 50 metres of the current study area.

1.4 EXISTING CONDITIONS

The Property Boundary associated with the Project is approximately 24.1 hectares of land, located in part of Lot 22, Concession 8, Geographic Township of Puslinch, Wellington County, Ontario (see Figure 1). At the request of CBM, the Stage 1 portion of the archaeological assessment examines the entirety of the Property Boundary (the study area), while the Stage 2 portion of the archaeological assessment examines only the Maximum Extraction Limits for the Project and an associated access road (the survey area). Thus, the Stage 2 survey area, located within the Property Boundary, is smaller and comprises approximately 14.3 hectares of scrubland, woodlot, and agricultural field.

The Stage 1-2 archaeological assessment was conducted under Project Information Form (PIF) number P256-0721-2022 issued to Parker Dickson, MA, by the MCM. The study area comprises manicured lawn, agricultural fields, scrubland, residential properties, laneways, a protected wetland, and a former aggregate extraction pit.



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Prior to the start of the Stage 1-2 archaeological assessment, CBM provided preliminary mapping of the Project's proposed impacts which defined the assessment areas (i.e., the study area and the survey area). This mapping was geo-referenced by Stantec's Geographical Information Services (GIS) team and a digital file (i.e., a shape file) was created of the study area and survey area. The digital file was uploaded to handheld Global Positioning Service (GPS) devices for use in the field.



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2.0 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

2.1 ARCHAEOLOGICAL POTENTIAL

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a study area. Stantec applied archaeological potential criteria commonly used by MCM (Government of Ontario 2011a) to determine areas of archaeological potential within the region under study. These variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area. Extensive land disturbance can eradicate archaeological potential (Government of Ontario 2011a).

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential.

As discussed above, distance to water is an essential factor in archaeological potential modeling. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. The Ministry categorizes water sources in the following manner:

- Primary water sources: lakes, rivers, streams, and creeks.
- Secondary water sources: intermittent streams and creeks, springs, marshes, and swamps.
- Past water sources: glacial lake shorelines, relic river or stream channels, cobble beaches, and shorelines of drained lakes or marshes.
- Accessible or inaccessible shorelines: high bluffs, swamp or marshy lake edges, and sandbars stretching into marsh.

The closest source of extant potable water is the tributaries of Aberfoyle Creek, located approximately 300 metres to the south and 600 metres northwest of the study area. Additional ancient and/or relic tributaries of other primary and secondary water sources may have existed but are not identifiable today. Soil texture can be an important determinant of past settlement, usually in combination with other factors such as topography. As indicated previously, soil within the study area, while not ideal, would be suitable for past agricultural uses.

An examination of the *Ontario Archaeological Sites Database* (Government of Ontario 2023a) has shown that there are six registered archaeological sites within one kilometre of the study area, including five Indigenous sites and one Euro-Canadian site.



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Archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990c) or property that local histories or informants have identified with possible historical events. No designated heritage properties exist within one kilometre of the study area. Review of historical mapping (Figure 4 and Figure 5) demonstrates that the study area has been occupied by Euro-Canadian settlers since the 19th century. Much of the established road system and agricultural settlement from the 19th century is still visible today.

When the above listed criteria are applied, the entirety (100%) of the study area retains archaeological potential. Thus, in accordance with Section 1.3.1 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a), Stage 2 archaeological assessment is required.



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Stage 2 Archaeological Assessment
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3.0 STAGE 2 ARCHAEOLOGICAL ASSESSMENT

3.1 FIELD METHODS

As noted earlier, at the request of CBM, the Stage 1 portion of the archaeological assessment examines the entirety of the Property Boundary (the study area), while the Stage 2 portion of the archaeological assessment examines only the Maximum Extraction Limits for the Project and an associated access road (the survey area). Thus, the Stage 2 survey area, located within the Property Boundary, is smaller and comprises approximately 14.3 hectares of scrubland, woodlot, and agricultural field.

During the Stage 2 survey, conducted between May 18 and June 27, 2022, the weather was largely sunny, with one day of cloudy conditions, and temperatures ranged from cool to very hot. Overall, assessment conditions were adequate and at no time was the archaeological assessment conducted when the field, weather, or lighting conditions were detrimental to the identification and recovery of archaeological resources (Table 3). Photographic documentation in Section 8.1 of this report confirms that field conditions met the requirements for Stage 1-2 archaeological assessment as per the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Section 7.8.6 Standard 1.a; Government of Ontario 2011a). An overview of the archaeological assessment methodology, as well as photograph locations and directions, is depicted on Figure 9 in Section 9.0 of this report.

Table 3: Weather and Field Conditions

Date	Field Director	Activities	Weather	Conditions
May 18, 2022	Daniel Kearns (R499)	Pedestrian survey	Sunny, cool	Dry, visibility >80%
June 17, 2022	Nathan Ng (R1223)	Test pit survey	Sunny, hot	Dry and friable; soil screens well
June 20, 2022	Nathan Ng (R1223)	Test pit survey	Cloudy, hot	Dry and friable; soil screens well
June 22, 2022	Nathan Ng (R1223)	Test pit survey	Sunny, very hot	Dry and friable; soil screens well
June 24, 2022	Nathan Ng (R1223)	Test pit survey	Sunny, hot	Dry and friable; soil screens well
June 27, 2022	Nathan Ng (R1223)	Test pit survey	Sunny, warm	Dry and friable; soil screens well

Approximately 33.1% of the study area consisted of active and recently ploughed agricultural fields. This portion of the study area was subject to pedestrian survey at a five-metre interval in accordance with Section 2.1.1 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a). The agricultural fields had been recently ploughed to a depth sufficient to provide total topsoil exposure and allowed to weather to improve visibility. Ground surface visibility during the pedestrian survey was greater than 80% and provided adequate conditions for identifying archaeological resources. Photos 1 to 4 illustrate the pedestrian survey of the study area. Please note that in-field training of new archaeological staff is illustrated in Photos 2 and 3, hence the 'pairing' of staff as part of the five-metre interval transect.



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When archaeological resources were identified during the pedestrian survey, the survey transect was decreased to a one-metre interval and spanned a minimum 20-metre radius around the identified artifact. This approach was used to determine if the artifact was an isolated find or part of a larger surface scatter, as per Section 2.1.1 Standard 7 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a). The identified artifact was collected, and a Universal Transverse Mercator (UTM) coordinate was taken as per Section 2.1 Standard 4.a of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a). The Stage 2 surface collection was conducted according to Stage 3 controlled surface pickup (CSP) standards, as allowed by the *Fieldwork: Stage 2 – Frequently Asked Questions* document issued by the MCM (Government of Ontario 2016). As the identified archaeological resource comprised a single isolated find (see Section 3.0 for record of finds for each archaeological location), no further UTM coordinates were required or recorded. The UTM coordinates were taken using ArcGIS Collector powered by ESRI, customized for archaeological survey and assessment, on a handheld mobile device paired with an R1 Receiver to an accuracy of less than one metre. The UTM coordinates are located in zone 17T and are based upon the North American Datum 1983 (NAD83). Maps illustrating the exact site locations and a listing of UTM coordinates recorded during the assessment are provided in the Supplementary Documentation to this report.

Approximately 19.2% of the study area consists of manicured lawn and scrubland that was inaccessible for ploughing. This portion of the study area was subject to test pit survey at a five-metre interval in accordance with Section 2.1.2 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a). Included in this portion of the study area is northeastern most area (north of the northern most pedestrian survey area) that is an area of overgrown and abandoned farmland. Google Earth Imagery from 2004 suggests that this area is similar to other agricultural areas based on visual vegetative cover (Note - the imagery does not confirm that it had been ploughed) but, by 2009 (based on Google Earth Imagery), the vegetative cover differs from the other agricultural areas to the south and, like current conditions, is overgrown scrubland and no longer farmed. The current vegetative cover of the area in question is illustrated by Photos 13 to 16 in the report – the conditions are the same conditions as other areas inaccessible for ploughing (see vegetative cover in Photos 7 and 8). So, while the area may have been farmed at one time in the past (i.e., 20 years ago), it has not been actively or recently cultivated agricultural land and is “abandoned farmland with heavy brush and weed growth” and qualifies for test pit survey as per Section 2.1.2 Standard 1.c. Each test pit was at least 30 centimetres in diameter and excavated five centimetres into sterile subsoil. The soils and test pits were then examined for stratigraphy, cultural features, or evidence of fill. Soil was screened through six-millimetre hardware cloth mesh to facilitate the recovery of artifacts. All test pits were backfilled. As no archaeological resources were encountered during the test pit survey, no additional test pit survey field methods were employed. Photos 5 to 8 and 13 to 16 illustrate the test pit survey of the study area.

Approximately 2.1% of the study area was identified as previously disturbed from laneways (Photo 9), an extraction pit used in the 1980s (Photo 10), and a man-made retention pond (Photo 11). Approximately 4.8% of the study area was identified as low and permanently wet (Photo 12) and is associated with an unevaluated wetland (see Figure 2). While these areas were not subject to Stage 2 survey, they are photographically documented to confirm that physical features affected the ability to survey portions of the



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study area in accordance with Section 7.8.6 Standard 1.b of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a).

The remaining portion of the study area, approximately 40.7%, comprises land which is not anticipated to be part of the developable area for the Project. These lands are situated outside of the Maximum Extraction Limits and exclude the proposed access road. As noted earlier, CBM requested that these lands not be subject to Stage 2 assessment. Therefore, this portion of the study area retains archaeological potential.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Record of Finds
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4.0 RECORD OF FINDS

The Stage 2 archaeological assessment was conducted employing the methods described in Section 3.0. An inventory of the documentary record generated by fieldwork is provided in Table 4.

Table 4: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
Four pages of field notes	Stantec office, London, Ontario	In original field book and photocopied in project file
One map provided by the client	Stantec office, London, Ontario	Hard and digital copies in project file
224 digital photographs	Stantec office, London, Ontario	Stored digitally in project file

The material culture collected during the Stage 2 archaeological assessment is contained in one Bankers box, labeled by location and Borden number, and artifact class and type. The box will be temporarily housed at the Stantec London office until formal arrangements can be made for a transfer to an MCM collections facility.

4.1 LOCATION 1

Location 1 was identified during the pedestrian survey of a ploughed agricultural field. Location 1 is one piece of chipping detritus. The recovered artifact is illustrated on Plate 1 in Section 9.2.

Chert is a naturally occurring mineral found in sedimentary rocks that is a granular crystalline form of quartz, composed of cryptocrystalline and microcrystalline crystals (Eley and von Bitter 1989). Raw material acquisition and procurement strategies have long been theorized in academic literature. Some researchers suggest that raw material choices are purely utilitarian (e.g., Deller 1979; Ellis 1989; Parker 1986a, 1986b), while others suggest non-utilitarian reasons (e.g., Hall 1993; Simmons et al. 1984). Regardless of the reason, chert type identification and their respective quantities within a particular assemblage provide an opportunity to evaluate numerous archaeological variables, including group mobility and sedentism, lithic reduction strategy and technique, transportation, trade, and symbolism. Chert type identification was accomplished visually using reference materials located in the Stantec London office. The piece of chipping detritus from Location 1 is manufactured from Onondaga chert.

Onondaga formation chert is from the Middle Devonian age, with outcrops occurring along the north shore of Lake Erie between Long Point and the Niagara River (Eley and von Bitter 1989). Primary outcrops have also been reported along the banks of the Grand River (Ellis et al. 1990). It is a high-quality raw material frequently utilized and often found at archaeological sites in southern Ontario. Onondaga chert occurs in nodules or irregular thin beds. It is a dense non-porous rock that may be light to dark grey, bluish grey, brown or black and can be mottled with a dull to vitreous or waxy lustre (Eley and von Bitter 1989).



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Record of Finds
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The piece of chipping detritus from Location 1 was subject to morphological analysis following the classification scheme described by Lennox et al. (1986:79-81) and expanded upon by Fisher (1997:41-49). Primary flakes feature dorsal surfaces that are either entirely covered with cortex or have substantial visible cortex present. Secondary flakes can also have a trace of cortex on the dorsal surface. Both varieties, along with shatter, are associated with early stages of lithic reduction as chert cores or flint nodules are converted into blanks or preforms. Tertiary flakes and micro flakes are produced during the further reduction of blanks and preforms into formal tool shapes. They are the result of precise flake removal through pressure flaking, where the maker applies direct pressure onto a specific part of the tool to facilitate flake removal. Pressure flaking generally produces smaller, thinner flakes than does percussion flaking. Broadly, primary, secondary, and shatter flakes indicate early stages of lithic reduction, while tertiary and micro flakes indicate later stages of the reduction sequence. Due to damage to the flake recovered from Location 1, morphological analysis cannot be conclusively made, and it is described as broken.

4.1.1 Location 1 Artifact Catalogue

Table 5 provides the complete artifact catalogue (Cat.) of the Stage 2 assemblage from Location 1.

Table 5: Location 1 Artifact Catalogue

Cat. #	Context	Depth (m)	Artifact	Quantity	Chert	Morphology
1	CSP1	0	Chipping Detritus	1	Onondaga	Broken



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Analysis and Conclusions
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5.0 ANALYSIS AND CONCLUSIONS

Stantec was retained by CBM Aggregates to conduct a Stage 1-2 archaeological assessment for the study area, covering approximately 24.1 hectares in Lot 22, Concession 8, Geographic Township of Puslinch, Wellington County, Ontario.

5.1 STAGE 1 ARCHAEOLOGICAL ASSESSMENT

The Stage 1 archaeological assessment determined that the entirety (100%) of the study area retained archaeological potential. Thus, in accordance with Section 1.3.1 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a), Stage 2 archaeological assessment was required.

5.2 STAGE 2 ARCHAEOLOGICAL ASSESSMENT

The Stage 2 archaeological assessment was completed between May 18, 2022, and June 27, 2022, and was limited to the survey area. During the Stage 2 pedestrian survey, one archaeological location was identified – Location 1.

5.2.1 Location 1

Location 1 is an isolated surface find; a piece of chipping detritus made of Onondaga chert. Given the isolated nature of the non-diagnostic artifact, the cultural heritage value or interest of Location 1 is sufficiently documented, and it does not fulfill the criteria for Stage 3 archaeological investigation as per Section 2.2 of the MCM's *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a).

5.3 ARCHAEOLOGICAL POTENTIAL

Approximately 40.7% of the study area comprises land which is not anticipated to be part of the developable area for the Project. These lands are situated outside of the survey area. As noted earlier, CBM requested that these lands not be subject to Stage 2 assessment. As such, these areas were not subject to Stage 2 archaeological assessment but were included in the Stage 1 archaeological assessment. As noted in Section 2.0 and Section 5.1 of this report, the portions of the study area not subject to Stage 2 archaeological assessment retain archaeological potential in accordance with Section 1.3.1 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a).



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Recommendations
December 10, 2024

6.0 RECOMMENDATIONS

The Stage 1 archaeological assessment determined that the study area retained archaeological potential. As such, Stage 2 archaeological assessment was required. Stage 2 archaeological assessment for a portion of the survey area was completed between May 18, 2022, and June 27, 2022, and one new archaeological location was identified during the Stage 2 survey (see Section 4.1 and 5.2.1 of this report).

Stage 2 archaeological assessment was not completed for the portion of the study area expected to be excluded from the developable area of the Project. This portion of the study area retains archaeological potential and Stage 2 archaeological assessment is required. Thus, in accordance with the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a), **further archaeological assessment is required.**

It is anticipated that the further archaeological assessment will comprise Stage 2 archaeological assessment. The objective of the Stage 2 archaeological assessment will be to document archaeological resources within the study area and to determine whether these archaeological resources require further assessment. Given that the portion of the study area retaining archaeological potential comprises scrubland and woodlot and is not accessible for ploughing, the Stage 2 archaeological assessment will consist of a test pit survey.

Thus, the Stage 2 archaeological assessment will include test pit survey as outlined in Section 2.1.2 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a). The MCM's standards require that each test pit be at least 30 centimetres in diameter, excavated to at least five centimetres into subsoil, and have soil screened through six-millimetre hardware cloth to facilitate the recovery of any cultural material that may be present. Prior to backfilling, each test pit will be examined for stratigraphy, cultural features, or evidence of fill.

If the archaeological field team judges any lands to be low and wet, steeply sloped, or disturbed during the course of the Stage 2 field work, those areas will not require physical survey, but will be photographically documented instead, in accordance with Section 2.1 of the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a).

It is recommended that Indigenous communities interested in the Project be engaged during Stage 2 archaeological assessment. Indigenous engagement practices must be completed in accordance with the MCM's 2011 *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011a) and the MCM's draft technical bulletin titled *Engaging Aboriginal Communities in Archaeology* (Government of Ontario 2011b).

The MCM is asked to review the results presented and to accept this report into the *Ontario Public Register of Archaeological Reports*.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Advice on Compliance with Legislation
December 10, 2024

7.0 ADVICE ON COMPLIANCE WITH LEGISLATION

In accordance with Section 7.5.9 of the Ministry's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011a), the following standard statements are a required component of archaeological reporting and are provided from the MCM's 2011 Standards and Guidelines for Consultant Archaeologists (Government of Ontario 2011a).

This report is submitted to the Minister of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c. O.18 (Government of Ontario 1990c). 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 Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns regarding alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* (Government of Ontario 1990c) 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 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* (Government of Ontario 1990c).

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* (Government of Ontario 1990c). 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* (Government of Ontario 1990c).

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c. 33 (Government of Ontario 2002), requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar, Funeral, Burial and Cremation Services Act and Manager, Burials Unit at the Ministry of Public and Business Service Delivery and Procurement is also immediately notified.

Archaeological sites recommended for further archaeological fieldwork remain subject to Section 48(1) of the *Ontario Heritage Act* (Government of Ontario 1990b) and may not be altered, or have artifacts removed, except by a person holding an archaeological license.



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

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STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Images
December 10, 2024

9.0 IMAGES

9.1 PHOTOGRAPHS

Photo 1: General view of conditions during pedestrian survey of the study area, facing southeast



Photo 2: View of pedestrian survey of the study area, facing north



Photo 3: View of pedestrian survey of the study area, facing southwest



Photo 4: View of pedestrian survey of the study area, at a one-metre intervals, facing west



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Images

December 10, 2024

Photo 5: View of test pit survey of the study area, facing northwest



Photo 6: View of test pit survey of the study area, facing northeast



Photo 7: View of test pit survey of the study area, facing east-southeast



Photo 8: View of test pit survey of the study area, facing west-southwest



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Images

December 10, 2024

Photo 9: View of previous disturbance (existing laneways) within study area, facing southwest



Photo 10: View of previous disturbance (former aggregate pit and berm) within study area, facing north-northwest



Photo 11: View of previous disturbance (retaining pond associated with aggregate pit) within study area, facing west-northwest



Photo 12: View of low and permanently wet area (unevaluated wetland) within study area, facing northeast



STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Images

December 10, 2024

Photo 13: View of test pit survey of the study area, facing northeast



Photo 14: View of test pit survey of the study area, facing east-southeast



Photo 15: View of test pit survey of the study area, facing southeast



Photo 16: View of test pit survey of the study area, facing northwest



**STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY
PROPOSED TIKAL PIT EXPANSION)**

Images

December 10, 2024

9.2 ARTIFACT PLATES

Plate 1: Artifact from Location 1



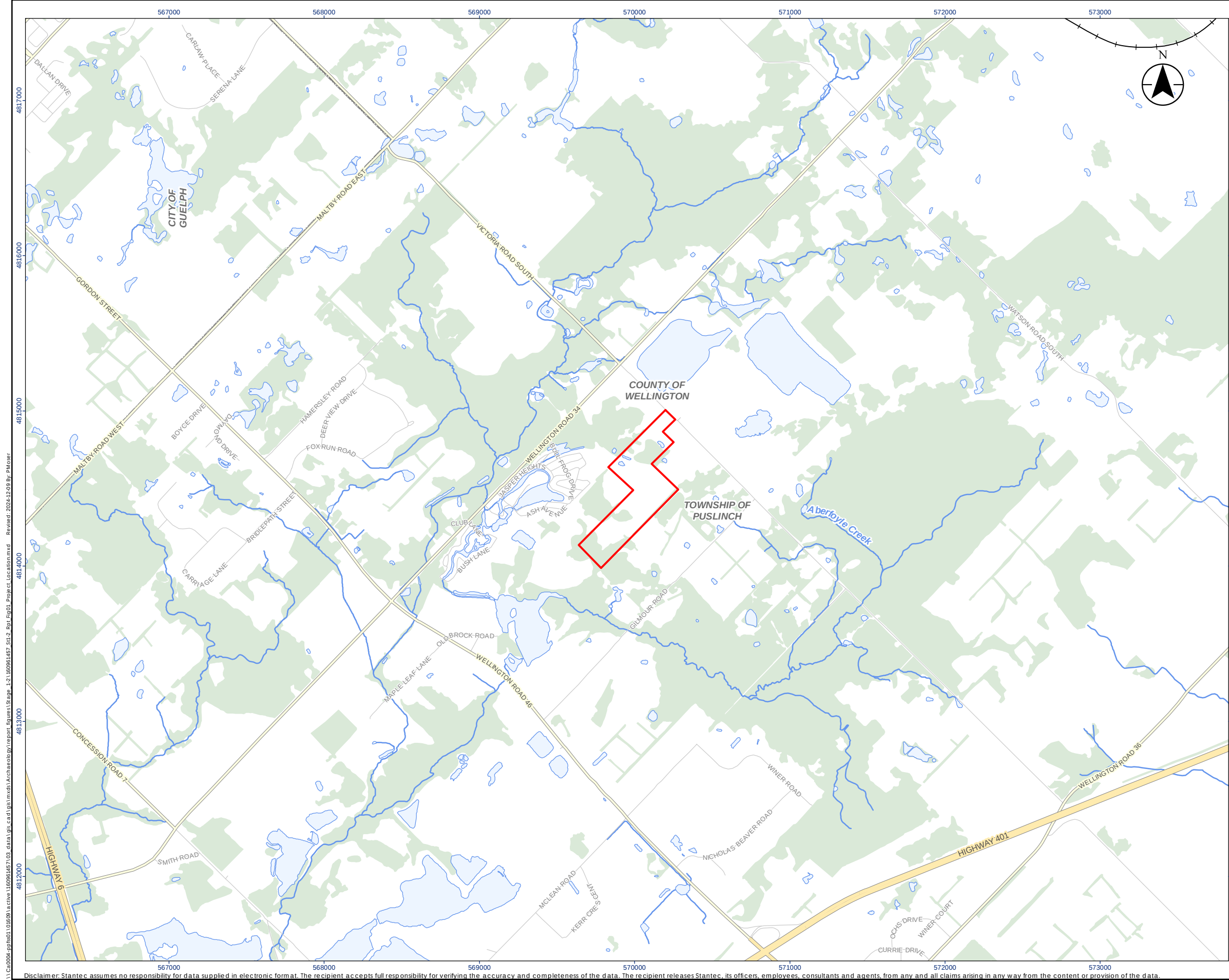
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Maps
December 10, 2024

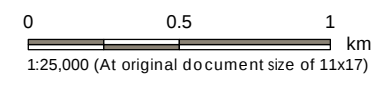
10.0 MAPS

General maps of the study area and archaeological assessment follow on succeeding pages. Maps illustrating the exact location of the identified archaeological site are found in the Supplementary Documentation to this report.

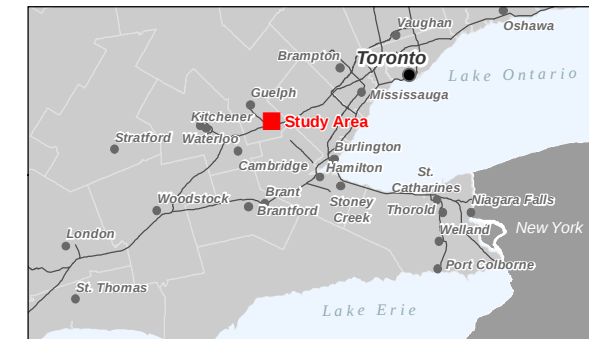




- Legend
- Property Boundary
 - Expressway / Highway
 - Major Road
 - Minor Road
 - Railway
 - Watercourse
 - Waterbody
 - Wooded Area
 - Municipal Boundary - Lower Tier



- Notes
- Coordinate System: NAD 1983 UTM Zone 17N
 - Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.



Project Location
Puslinch, ON

160961457 REVA
Prepared by PRM on 2024-12-09
Technical Review by PD on 2024-12-09

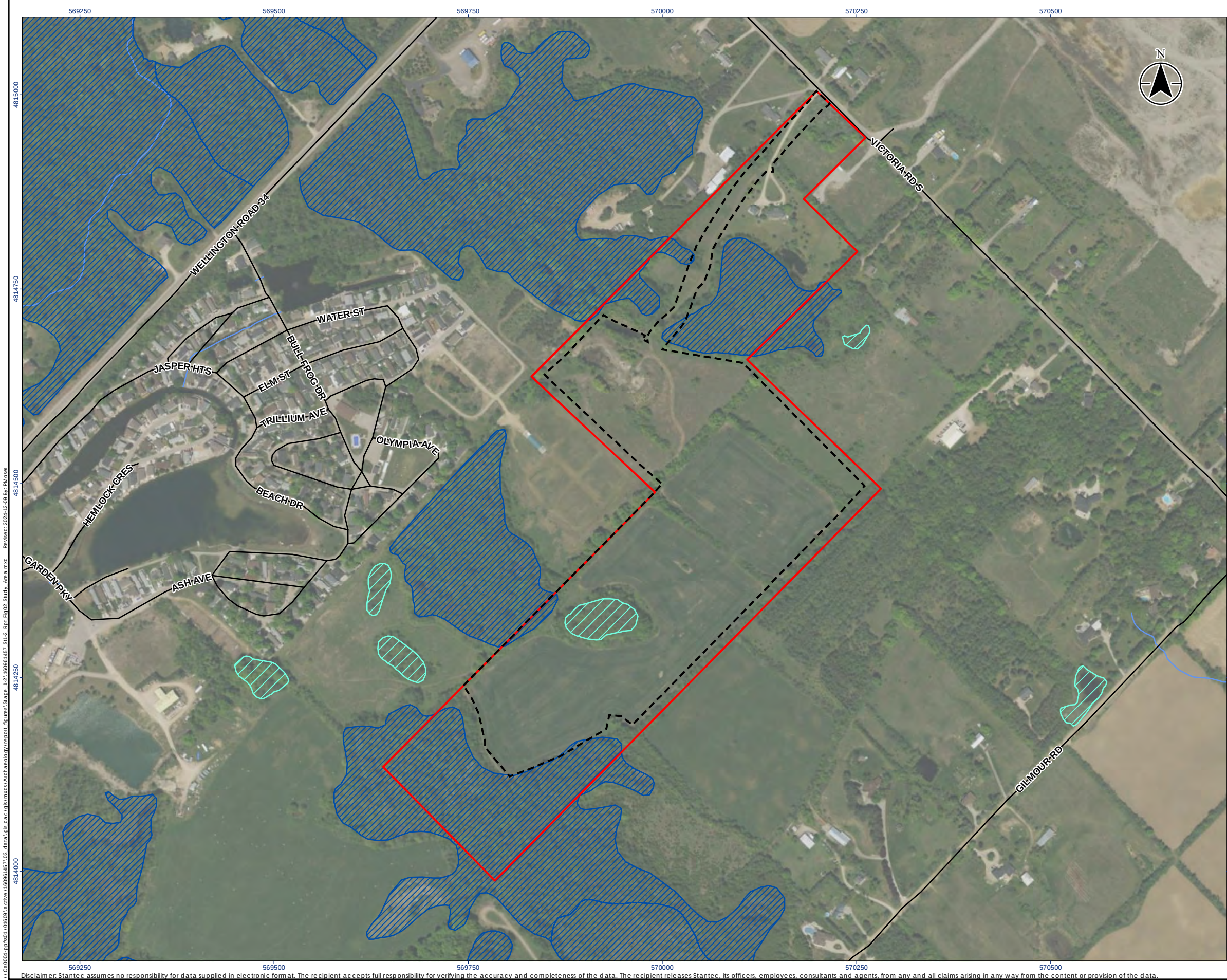
Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
1

Title
Project Location

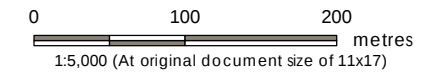
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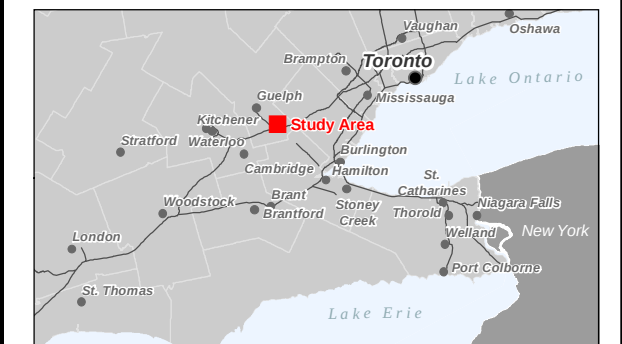


Legend

- Property Boundary
- Road
- Watercourse
- Wetland - Evaluated (Provincial)
- Wetland - Not evaluated per Ontario Wetland Evaluation System
- Survey Area



- Notes
1. Coordinate System: NAD 1983 UTM Zone 17N
 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2021.
 3. Orthoimagery © First Base Solutions, 2021.



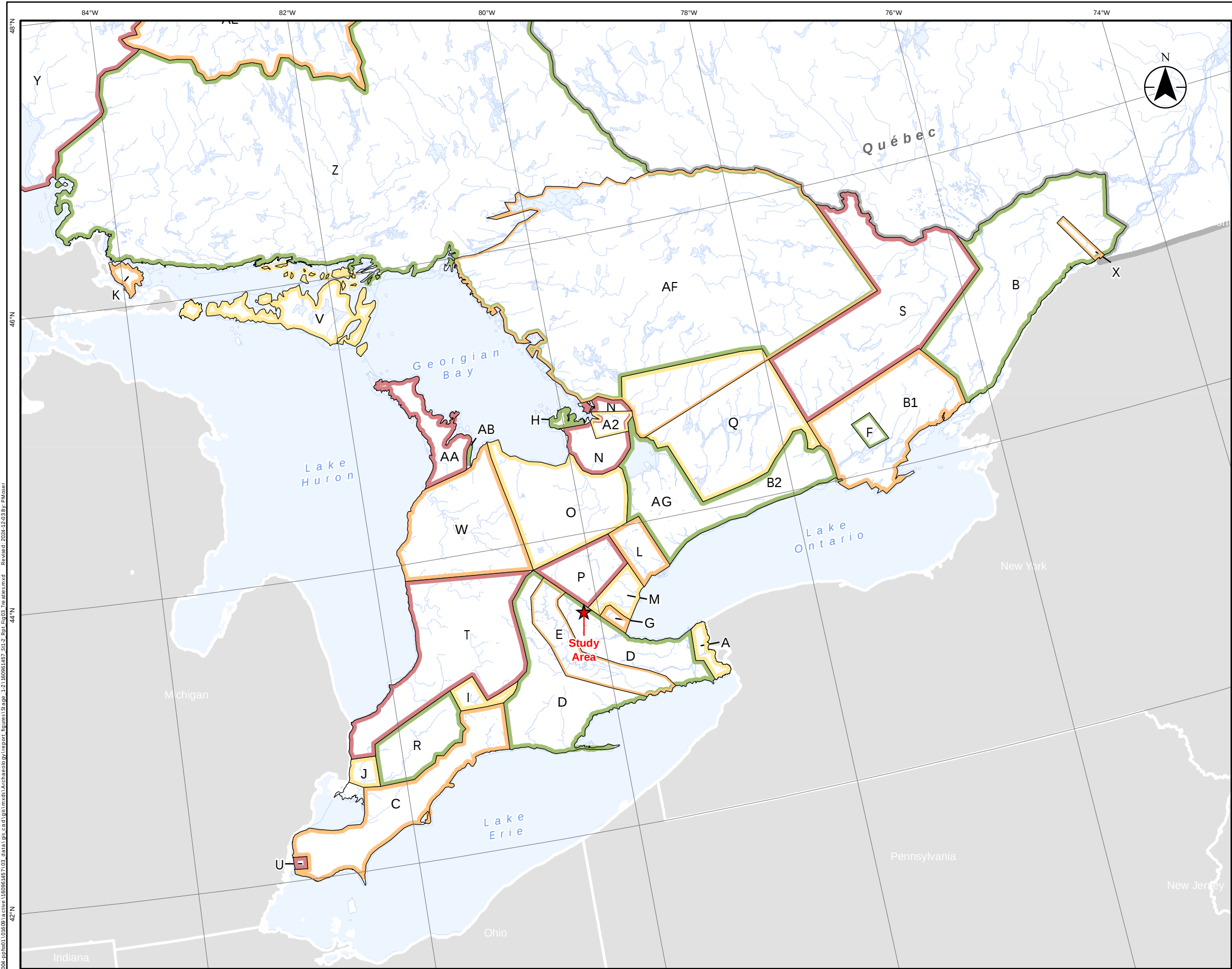
Project Location
Township of
Puslinch

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Technical Review by PD on 2024-12-09

Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
2

Title
Detail of the Study Area



Legend

- ★ Study Area
- Waterbody

- A Treaty No. 381, May 9th, 1781 (Mississauga and Chippewa)
- AA Treaty No. 72, October 30th, 1854 (Chippewa)
- AB Treaty No. 82, February 9th, 1857 (Chippewa)
- AE Treaty No. 9, James Bay 1905, 1906 (Ojibway and Cree)
- AG Williams Treaty, October 31st, 1923 (Chippewa)
- A2 John Collins' Purchase, 1785 (Chippewa)
- B Crawford's Purchase, October 9th, 1783 (Algonquin and Iroquois)
- B1 Crawford's Purchase, October 9th, 1783 (Mississauga)
- B2 Crawford's Purchase, 1783, 1787, 1788 (Mississauga)
- C Treaty No. 2, May 19th, 1790 (Odawa, Chippewa, Pottawatomi, and Huron)
- D Treaty No. 3, December 2nd, 1792 (Mississauga)
- E Haldimand Tract: from the Crown to the Mohawk,
- F Tyendinaga: from the Crown to the Mohawk, 1793
- G Treaty No. 3 3/4: from the Crown to Joseph Brant, October 24th,
- H Treaty No. 5, May 22nd, 1798 (Chippewa)
- I Treaty No. 6, September 7th, 1796 (Chippewa)
- J Treaty No. 7, September 7th, 1796 (Chippewa)
- K Treaty No. 11, June 30th, 1798 (Chippewa)
- L Treaty No. 13, August 1st, 1805
- M Treaty No. 13A, August 2nd, 1805
- N Treaty No. 16, November 18th, 1815 (Chippewa)
- O Treaty No. 18, October 17th, 1818 (Chippewa)
- P Treaty No. 19, October 28th 1818 (Chippewa)
- Q Treaty No. 20, November 5th, 1818 (Chippewa)
- R Treaty No. 21, March 9th, 1819 (Chippewa)
- S Treaty No. 27, May 31st, 1819 (Mississauga)
- T Treaty No. 27½, April 25th, 1825 (Ojibwa and
- U Treaty No. 35, August 13th, 1833 (Wyandot or
- W Treaty No. 45½, August 9th, 1836
- X Treaty No. 57, June 1st, 1847 (Iroquois of St. Regis)
- Y Treaty No. 60, Robinson, Superior, September 7th, 1850 (Ojibwa)
- Z Treaty No. 61, Robinson, Huron, September 9th, 1850 (Ojibwa)

0 50 100 Km
1:3,000,000 (At original document size of 11x17)

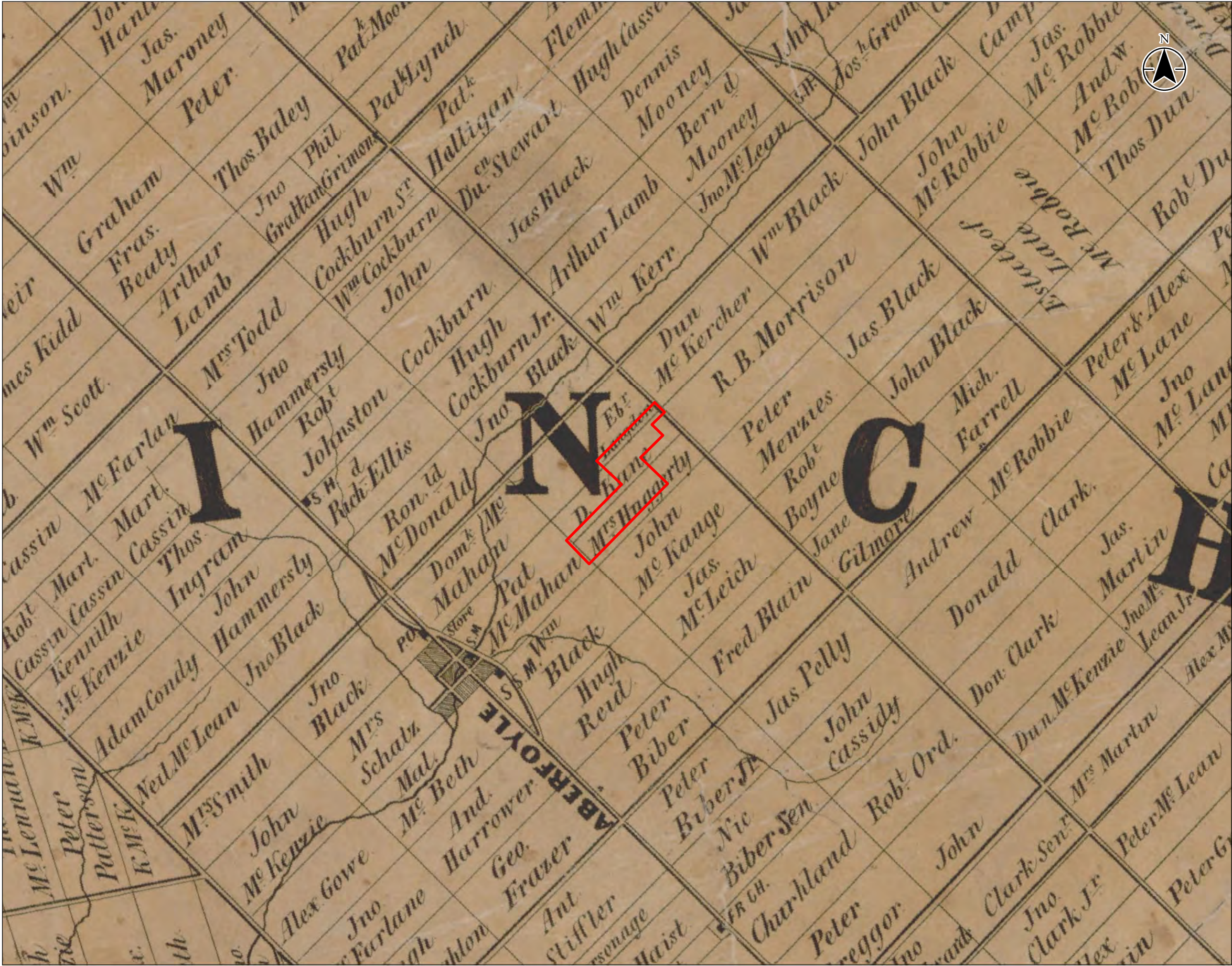
- Notes
- 1. Coordinate System: NAD 1983 Statistics Canada Lambert
 - 2. Base features produced under license with the Ontario Ministry of Natural Resources and Forestry © Queen's Printer for Ontario, 2018.
 - 3. Treaty boundaries adapted from Morris 1943 (1964 reprint). For cartographic representation only.

Project Location 160961457 REVA
Township of Prepared by PRM on 2024-12-03
Puslinch Technical Review by PD on 2024-12-03

Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
3
Title
Treaties and Purchases (Adapted from
Morris 1943)

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Stantec

Legend

Property Boundary

Notes

1. Leslie, Guy and Charles J. Wheelock. 1861. *Map of the County of Wellington, Canada West*. Orangeville: Guy Leslie and Charles J. Wheelock.



Project Location
Township of
Puslinch

160961457 REVA
Prepared by PRM on 2024-12-09
Technical Review by PD on 2024-12-09

Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
4

Title
Portion of 1861 Map of Wellington County

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Stantec

Legend

 Property Boundary

Figure Not to Scale

Notes

1. Walker and Miles, 1877. *Illustrated Historical Atlas of the County of Wellington, Ontario*. Toronto: Walker and Miles.



The map shows the location of the study area (red square) within the Township of Puslinch, Ontario. It is situated between the cities of London and Toronto, near the border with New York. The map includes labels for various cities and towns in the region, including London, St. Thomas, Woodstock, Brantford, Cambridge, Kitchener, Guelph, Brampton, Mississauga, and Toronto. It also shows the locations of Lake Erie and Lake Ontario.

Project Location
Township of
Puslinch

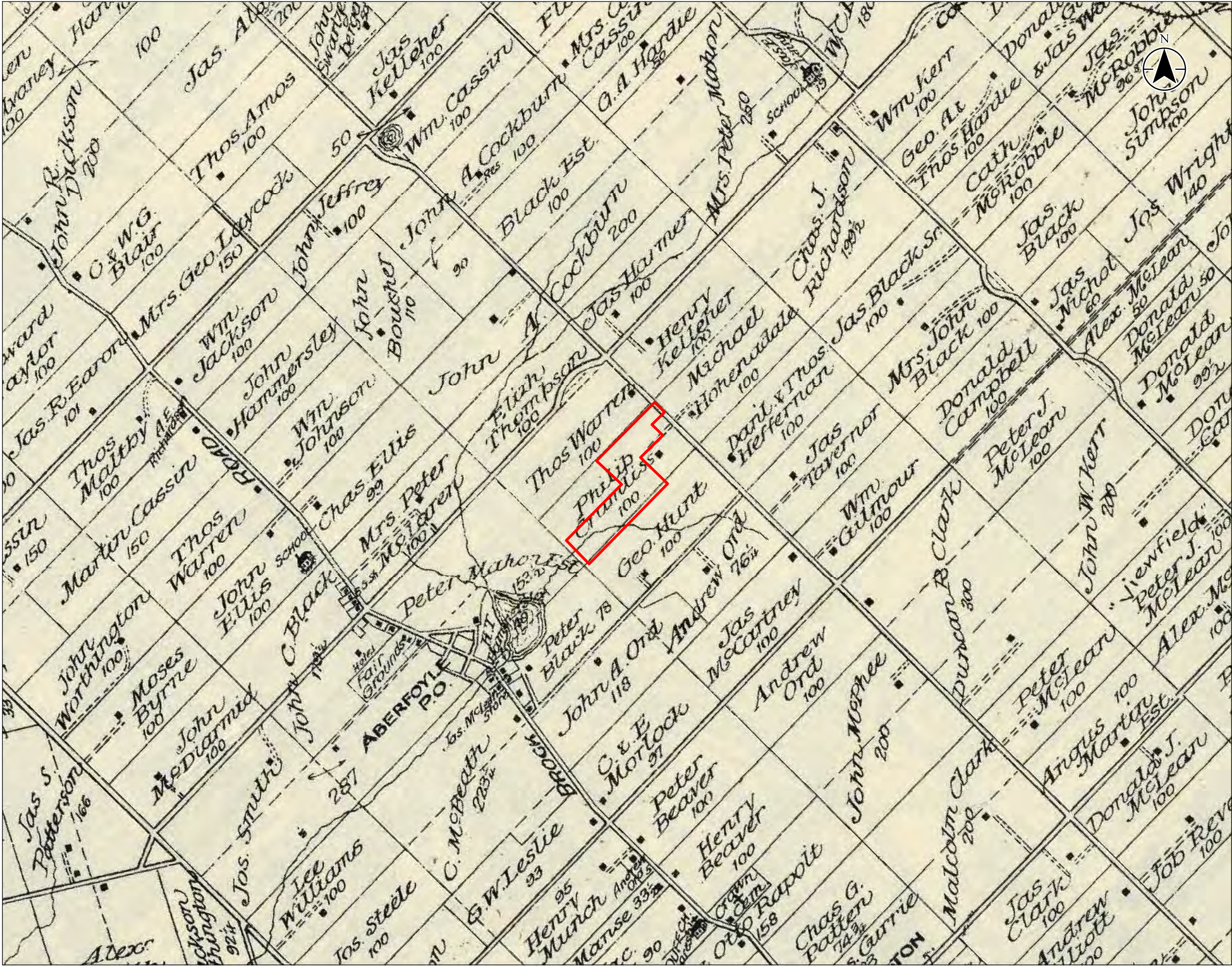
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Prepared by PRM on 2024-12-09
Technical Review by PD on 2024-12-09

Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
5

Title
Portion of 1877 Map of the Township of
Puslinch

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Legend
 Property Boundary

Figure Not to Scale

Notes
1. Historical Atlas Publishing Co. 1906. Wellington County 1906. Toronto: Historical Atlas Publishing Co.



Project Location
Township of
Puslinch
160961457 REVA
Prepared by PRM on 2024-12-09
Technical Review by PD on 2024-12-09

Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
6

Title
Portion of 1906 Historical Atlas of Township
of Puslinch



Legend
 Property Boundary

Notes
1. University of Toronto Libraries. N.d. Map and Data Library: 1954 Air Photos of Southern Ontario. Accessed electronically: <https://mdl.library.utoronto.ca/collections/air-photos/1954-air-photos-southern-ontario/index>. Last accessed 6 February 2023.
2. Capital Air Surveys Ltd. 1966. Kitchener – Brantford Area, 1966. Flight A19411-Photo 39. Accessed electronically: <https://digitalarchive.mcmaster.ca/islandora/object/macrepo%3A80569>. Last accessed 6 February 2023.

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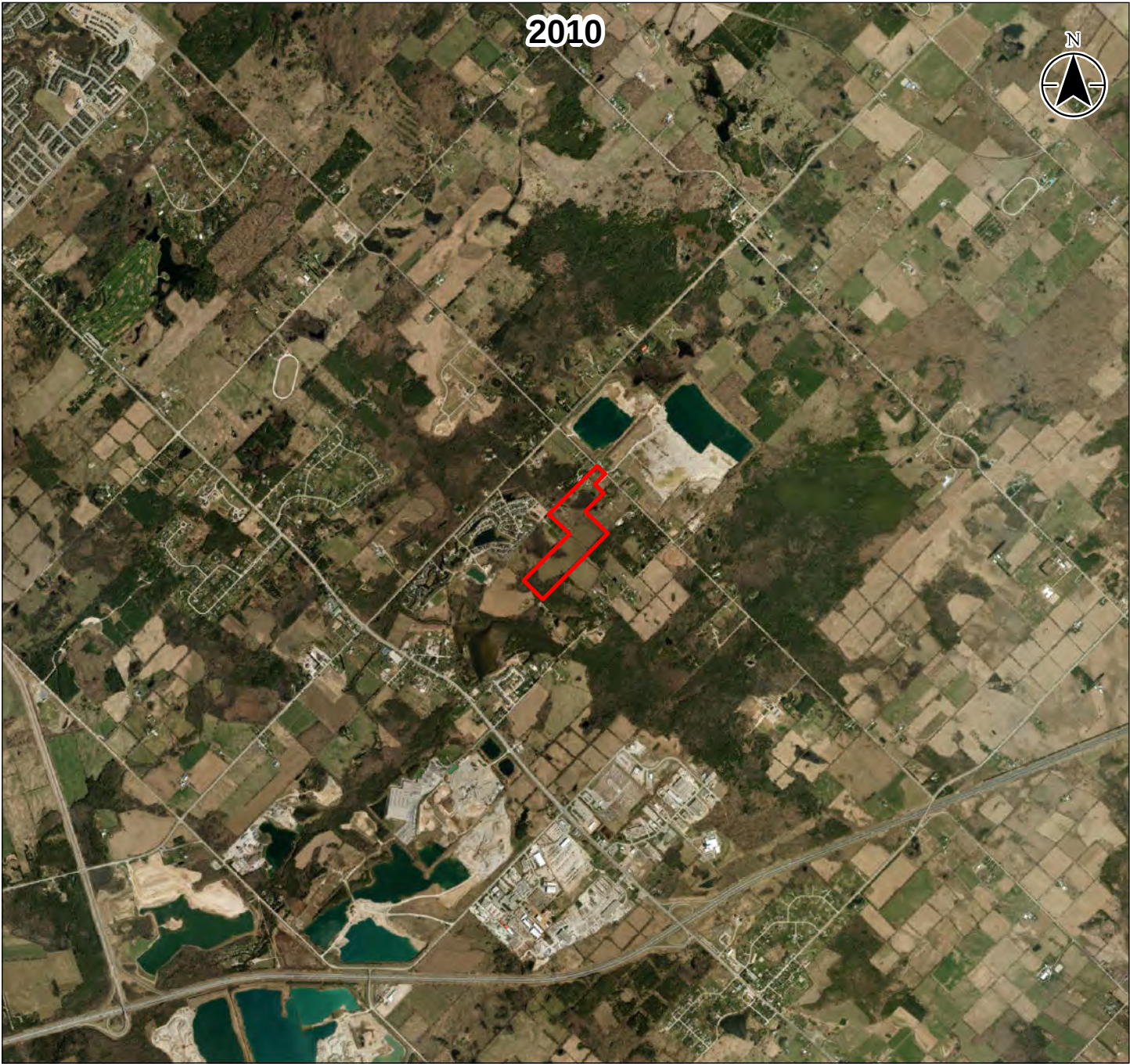


Project Location
Township of Puslinch
160961457 REVA
Prepared by PRM on 2024-12-09
Technical Review by PD on 2024-12-09

Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
7

Title
Historical Aerial Photographs



Legend
 Property Boundary

Notes
1. 2000 Aerial - County of Wellington. 2023. Explore Wellington. Accessed electronically: <https://sgis.wellington.ca/Maps/index.html?viewer=WellingtonCountyExternal>. Last accessed 6 February 2023.
2. 2010 Aerial - County of Wellington. 2023. Explore Wellington. Accessed electronically: <https://sgis.wellington.ca/Maps/index.html?viewer=WellingtonCountyExternal>. Last accessed 6 February 2023.

Figure Not to Scale

 **Stantec**

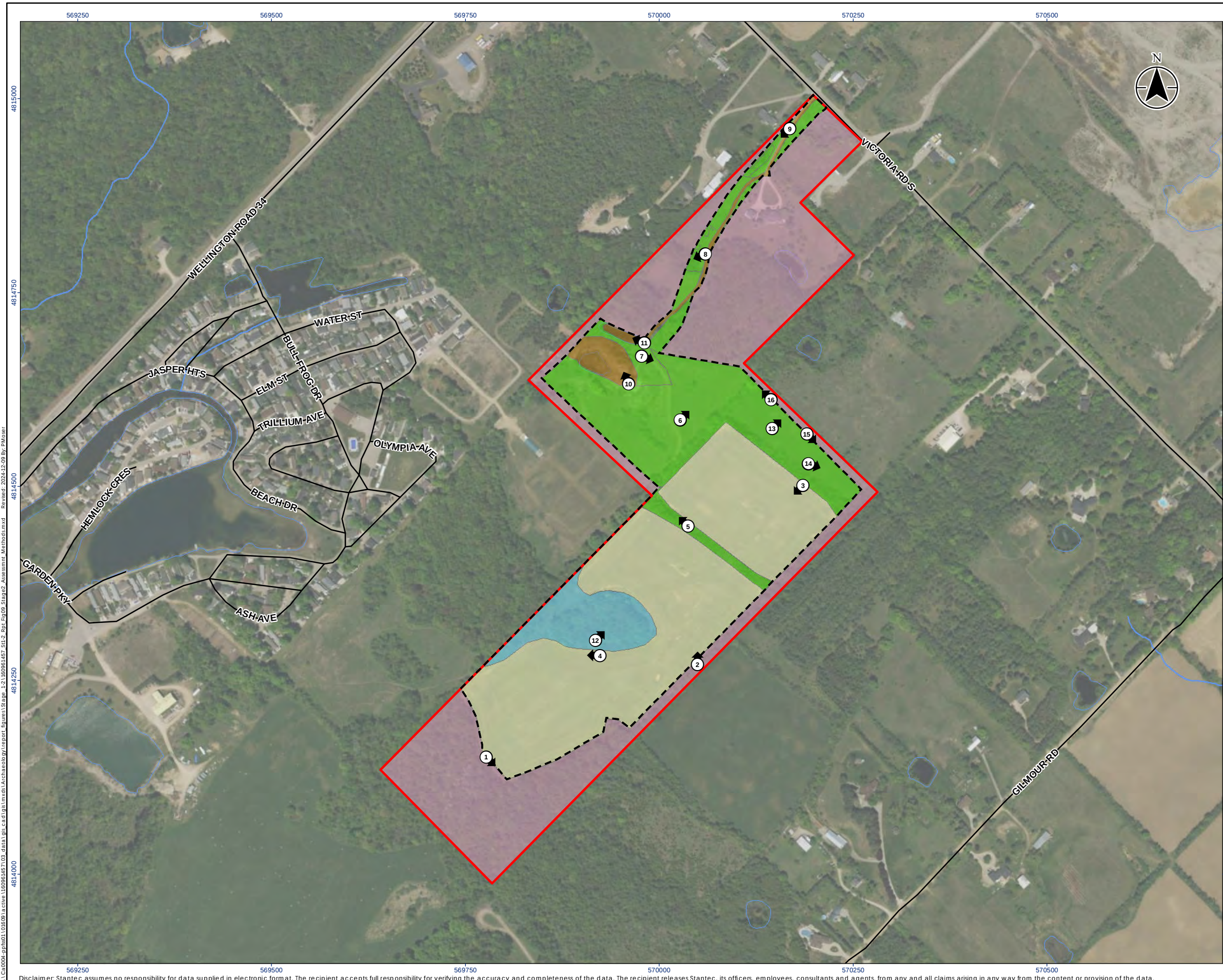
Project Location
Township of
Puslinch

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Technical Review by PD on 2024-12-09

Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
8

Title
Aerial Photographs

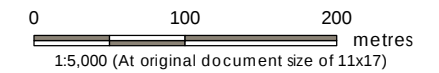


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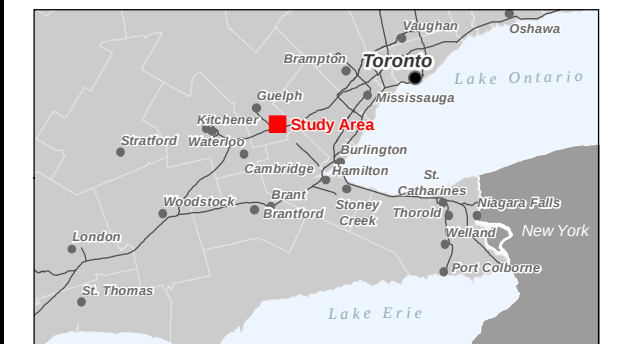
- Property Boundary
- Archaeology Photo Log
- Road
- Watercourse
- Waterbody
- Archaeology Survey Area

Archaeological Assessment Method

- Low and Permanently Wet Area, No Further Archaeological Work Required
- Previously Disturbed, Low to No Archaeological Potential - No Further Archaeological Work Required
- Pedestrian Survey, 5 m Intervals
- Test Pit Survey, 5 m Intervals
- Retains Archaeological Potential – Stage 2 Assessment Required



- Notes
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Township of
Puslinch

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Technical Review by PD on 2024-12-09

Client/Project
STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT
PROPOSED ANTHONY PIT

Figure No.
8

Title
Stage 2 Archaeological Assessment
Methods and Results

STAGE 1-2 ARCHAEOLOGICAL ASSESSMENT: PROPOSED ANTHONY PIT (FORMERLY PROPOSED TIKAL PIT EXPANSION)

Closure
December 10, 2024

11.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential archaeological resources associated with the identified property.

All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report and are based solely on the scope of work described in the report, the limited data available and the results of the work. The conclusions are based on the conditions encountered by Stantec at the time the work was performed. Due to the nature of archaeological assessment, which consists of systematic sampling, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire property.

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Quality Review _____
(signature)

Parker Dickson – Senior Archaeologist, Senior Associate

Independent Review _____
(signature)

Colin Varley – Senior Archaeologist, Senior Associate

