

**Stage 1-2 Archaeological Assessment
Cawthra Phase 3 Sanitary Trunk Sewer
Part of Lots 7-8, Concession 1 North of Dundas
Street, and Lots 9-10, Concession 2 North of
Dundas Street
(Geographical Township of Toronto, County of
Peel)
City of Mississauga, Regional Municipality of Peel**

Original Report

Prepared for:

Arcadis

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Executive Summary

Archaeological Services Inc. (ASI) was contracted by Arcadis, on behalf of the Regional Municipality of Peel, to conduct a Stage 1-2 Archaeological Assessment as part of the Cawthra Phase 3 Sanitary Trunk Sewer (Figure 1). This project involves new shaft locations which will be used for tunneling to construct a sanitary trunk sewer.

The Stage 1 background study determined that one previously registered archaeological site is located within one kilometre of the Study Area.

The Stage 1-2 property survey was conducted on May 10, 2024, in accordance with the *Ontario Heritage Act* and the S & G. Approximately 56 percent of the Study Area (0.43 hectares) was previously assessed without further recommendations and not subject to Stage 2 assessment as per S & G Section 2.1, Standard 2.c (ASI 1990; ASI 1992; ASI 2008; Golder Associates Ltd., 2020). Approximately 39 percent of the Study Area (0.29 hectares) had been previously subject to deep and extensive ground disturbance and was not subject to Stage 2 survey, as per S & G Section 2.1, Standard 2.b. The lands documented as being previously disturbed have no archaeological potential and include engineered slopes, paved sidewalks, trails, and commercial development (Figure 10; Image 3, Image 4, Image 7, Image 8).

The remaining five percent of the Study Area (0.03 hectares), comprising manicured lawns, was subject to judgmental test pit survey at 10 metre intervals to confirm previous disturbance (Figure 10; Image 3, Image 4, Image 7, Image 8). No archaeological resources or intact A-horizon (natural topsoil) were encountered during the Stage 2 survey, and no further archaeological assessment is recommended.



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1.0 Project Context

Archaeological Services Inc. (ASI) was contracted by Arcadis, on behalf of the Regional Municipality of Peel, to conduct a Stage 1-2 Archaeological Assessment as part of the Cawthra Phase 3 Sanitary Trunk Sewer project (Figure 1). This project involves new shaft locations which will be used for tunneling to construct a sanitary trunk sewer.

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (1990, as amended in 2023) and the 2011 *Standards and Guidelines for Consultant Archaeologists (S & G)*, currently administered by the Ministry of Citizenship and Multiculturalism (MCM), formerly the Ministry of Tourism and Culture (MTC 2011).

1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act, RSO* (Environmental Assessment Act, R.S.O. c. E.18, 1990 as amended 2022) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the *Municipal Class Environmental Assessment* process, Schedule C MCEA, (Municipal Engineers Association, 2023).

In addition, this Stage 1-2 assessment has been commissioned to satisfy the recommendations of the previous Stage 1 assessment (Golder Associates Ltd., 2020) that was undertaken as part of the Capacity Expansion of the Central Mississauga Wastewater System Schedule 'C' Municipal Class Environmental Assessment in the Regional Municipality of Peel (Golder Associates Ltd., 2020 PIF: P468-0037-2019).

ASI has been actively engaging with Indigenous communities who have expressed an interest in the archaeological work within the Study Area for this project. Representatives from Haudenosaunee Development Institute Toronto were present on site and participated during the Stage 1-2 property survey. No concerns were expressed during the execution of the fieldwork. A detailed



account of all First Nations engagement can be found in the *Supplementary Documentation: Indigenous Engagement* document associated with this report.

Authorization to access and carry out all activities necessary for the completion of this Stage 1-2 assessment was granted by Arcadis on September 19, 2023.

1.1.1 Treaties and Traditional Territories

The Study Area is within Treaty 13a which was signed on August 2, 1805, between the Mississaugas and the British Crown in Port Credit at the Government Inn. A provisional agreement was reached in which the Mississaugas ceded 70,784 acres of land bounded by the Toronto Purchase of 1787 in the east, the Brant Tract in the west, and a northern boundary that ran six miles back from the shoreline of Lake Ontario. The Mississaugas also reserved the sole right of fishing at the Credit River and were to retain a one-mile strip of land on each of its banks, which became the Credit Indian Reserve.

On September 5, 1806, the signing of Treaty 14 confirmed the Head of the Lake Purchase between the Mississaugas of the Credit and the Crown for lands along the north shore of Lake Ontario southwest of the Toronto Purchase to what is now Oakville (Mississauga of the New Credit First Nation, 2001; Mississaugas of the Credit First Nation, 2017).

1.2 Historical Context

1.1.1. Indigenous Land Use and Settlement

Current archaeological evidence indicates humans were present in southern Ontario approximately 13,000 years before present (B.P.) (Ferris, 2013). Populations at this time would have been highly mobile, inhabiting a boreal-parkland similar to the modern sub-arctic. By approximately 10,000 B.P., the environment had progressively warmed (Edwards & Fritz, 1988) and populations now occupied less extensive territories (Ellis & Deller, 1990).

Between approximately 10,000-5,500 B.P., the Great Lakes basins experienced low-water levels, and many sites which would have been located on those former shorelines are now submerged. This period produces the earliest



evidence of heavy wood working tools, an indication of greater investment of labour in felling trees for fuel, to build shelter, and watercraft production. These activities suggest prolonged seasonal residency at occupation sites. Polished stone and native copper implements were being produced by approximately 8,000 B.P.; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest archaeological evidence for cemeteries dates to approximately 4,500-3,000 B.P. and is interpreted by archaeologists to be indicative of increased social organization and the investment of labour into social infrastructure (Brown, 1995, p. 13; Ellis et al., 1990, 2009).

Between 3,000-2,500 B.P., populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2,500 B.P. and exchange and interaction networks broaden at this time (Spence et al., 1990, pp. 136, 138) and by approximately 2,000 B.P., evidence exists for small community camps, focusing on the seasonal harvesting of resources (Spence et al., 1990, pp. 155, 164). By 1,500 B.P. there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolith evidence for maize in central New York State by 2,300 B.P. – it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch & Williamson, 2013, pp. 13–15). As is evident in detailed Anishinaabek ethnographies, winter was a period during which some families would depart from the larger group as it was easier to sustain smaller populations (Rogers, 1962). It is generally understood that these populations were Algonquian-speakers during these millennia of settlement and land use.

From the beginning of the Late Woodland period at approximately 1,000 B.P., lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (C.E.), larger settlement sites focused on horticulture begin to dominate the archaeological record. Seasonal dispersal of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson, 1990, p. 317). By 1300-1450 C.E., archaeological research focusing on these horticultural societies note that this episodic community dispersal was no longer practised and these



populations now occupied sites throughout the year (Dodd et al., 1990, p. 343). By the mid-sixteenth century these small villages had coalesced into larger communities (Birch et al., 2021). Through this process, the socio-political organization of these First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. Other First Nation communities continued to practice residential mobility and to harvest available resources across landscapes they returned to seasonally/annually.

By 1600 C.E., the Confederation of Nations were encountered by the first European explorers and missionaries in Simcoe County. By the 1640s, devastating epidemics and the traditional enmity between the Haudenosaunee¹ and the Attawandaron and the Huron-Wendat (and their Algonquian allies such as the Nippissing and Odawa) led to their dispersal from southern Ontario. Shortly afterwards, the Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. Peace was achieved between the Haudenosaunee and the Anishinaabe Nations in August of 1701 when representatives of more than twenty Anishinaabe Nations assembled in Montreal to participate in peace negotiations. Peace was confirmed again at council held at Lake Superior when the Haudenosaunee delivered a wampum belt to the Anishinaabe Nations. This agreement between the Haudenosaunee and Anishinaabe nations is referred to as the Dish with One Spoon.

In 1763, following the fall of Quebec, New France was transferred to British control at the Treaty of Paris. The British government began to pursue major land purchases to the north of Lake Ontario in the early nineteenth century. The Crown acknowledged the Mississaugas of the Credit as the owners of the lands

¹ The Haudenosaunee are also known as the New York Iroquois or Five Nations Iroquois and after 1722 Six Nations Iroquois. They were a confederation of five distinct but related Iroquoian-speaking nations - the Seneca, Onondaga, Cayuga, Oneida, and Mohawk. Each lived in individual territories in what is now known as the Finger Lakes district of Upper New York. In 1722 the Tuscarora joined the confederacy.



between Georgian Bay and Lake Simcoe and entered into negotiations for additional tracts of land as the need arose to facilitate European settlement.

1.1.2. Post-Contact Settlement

Historically, the Study Area corridor is within part of Lots 7-8, Concession 1 North of Dundas Street and Lots 9-10, Concession 2 North of Dundas Street and in the Geographical Township of Toronto, County of Peel, Ontario.

The S & G stipulates that areas of early Euro-Canadian settlement (pioneer homesteads, isolated cabins, farmstead complexes), early wharf or dock complexes, pioneer churches, and early cemeteries are considered to have archaeological potential. Early historical transportation routes (trails, passes, roads, railways, portage routes), properties listed on a municipal register or designated under the *Ontario Heritage Act* or a federal, provincial, or municipal historic landmark or site are also considered to have archaeological potential.

For the Euro-Canadian period, the majority of early nineteenth century farmsteads (i.e., those that are arguably the most potentially significant resources and whose locations are rarely recorded on nineteenth century maps) are likely to be located in proximity to water. The development of the network of concession roads and railroads through the course of the nineteenth century frequently influenced the siting of farmsteads and businesses. Accordingly, undisturbed lands within 100 metres of an early settlement road are also considered to have potential for the presence of Euro-Canadian archaeological sites.

The first Europeans to arrive in the area were transient merchants and traders from France and England, who followed Indigenous pathways and set up trading posts at strategic locations along the well-traveled river routes. All of these occupations occurred at sites that afforded both natural landfalls and convenient access, by means of the various waterways and overland trails, into the hinterlands. Early transportation routes followed existing Indigenous trails, both along the lakeshore and adjacent to various creeks and rivers (ASI 2006).

Throughout the period of initial European settlement, Indigenous groups continued to fish, gather, and hunt within their traditional and treaty



territories, albeit often with legal and informal restrictions imposed by colonial authorities and settlers. In many cases, Indigenous peoples acted as guides and teachers, passing on their traditional knowledge to settlers, allowing them to sustain themselves in their new homes. Indigenous peoples entered into economic arrangements and partnerships, and often inter-married with settlers. However, pervasive and systemic oppression and marginalization of Indigenous peoples also characterized Euro-Canadian colonization, with thousands being displaced from their lands, denied access to traditional and treaty hunting, fishing, and collecting grounds, and forced to assimilate with Euro-Canadian culture through mandatory attendance at Day and Residential Schools (Ray, 2005; Rogers & Smith, 1994).

Toronto Township

The Township of Toronto was originally surveyed in 1806 by Mr. Wilmot, Deputy Surveyor. The first settler in this Township, and also the County of Peel, was Colonel Thomas Ingersoll. The whole population of the Township in 1808 consisted of seven families, scattered along Dundas Street. The number of inhabitants gradually increased until the war broke out in 1812, which gave considerable check to its progress. When the war was over, the Township's growth revived and the rear part of the Township was surveyed and called the "New Survey". The greater part of the New Survey was granted to a colony of Irish settlers from New York City, who suffered persecution during the war.

The Credit River runs through the western portion of the Township and proved to be a great source of wealth to its inhabitants, as it was not only a good watering stream, but there were endless mill privileges along the entire length of the river.

In 1855, the Hamilton and Toronto Railway completed its lakeshore line. In 1871, the railway was amalgamated with the Great Western Railway, which in turn, was amalgamated in 1882, with the Grand Trunk Railway, and then in 1923, with Canadian National Railway (Andreae, 1997). Several villages of varying sizes had developed by the end of the nineteenth century, including Streetsville, Meadowvale, Churchville, and Malton. A number of crossroad communities also began to grow by the end of the nineteenth century. These included Britannia, Derry, Frasers Corners, Palestine, Mount Charles, and Grahamsville.



Hamlet of Burnhamthorpe

The hamlet of Burnhamthorpe, originally “Sand Hill” or “Sandy Hill”, was named by John Abelson, an early settler from Burnham Thorpe, England. The Copeland family were other early settlers in 1818. The Burnhamthorpe Primitive Methodist Cemetery was established on a Crown Grant belonging to Abram Markle, who then sold the land to Levi Lewis in 1811, at the southwest corner of Burnhamthorpe and Dixie Roads. Many members of the early hamlet are buried there, including the Carr, Copeland, Curry, Jefferson, Markle, Moore, Savage, Siddall, Stanfield, and Tolman families. In 1825 part of the land was deeded to trustees for the Methodist Episcopal Church, public cemetery and schoolhouse. The cemetery was public until 1859, when it was deeded over to the trustees of the Primitive Methodist Church. In 1874 a new church was built on the northwest corner, known after 1925 as the Burnhamthorpe United Church, served the community until 1978.

The first store and post office in Burnhamthorpe were originally located in a series of buildings, which from 1840 to 1876 included a Sons of Temperance Hall, where church services were held, and an Orange Lodge. In 1876 James Curry purchased the buildings and turned the hall into living quarters for his family, with a store in the front as well as a post office. Another of the larger buildings became a steam grist mill. The mill was destroyed by fire in 1927 and a local school bought the stones for a building and a well. By 1876 Burnhamthorpe’s population had reached approximately 100 residents, and it had a blacksmith shop, carriage shop, shoemaker and general store. The hamlet began to decline in the 1880s after it was bypassed by the railway (Heritage Mississauga, 2009).

1.1.3. Map Review

The *Tremaine's Map of the County of Peel* (Tremaine, 1859), *Illustrated Historical Atlas of the County of Peel, Ont.* (Pope, 1877), *Brampton Sheet No. 35* (Department of Militia and Defence, 1909), *NTS Brampton Sheet* (Department of National Defence, 1940), and the 1990s NTS (Department of Energy, Mines and Resources, 1990) were examined to determine the presence of historic features within the Study Area during the nineteenth and twentieth centuries (Figure 2- Figure 7).



The *Tremaine's Map of the County of Peel* (Tremaine, 1859) illustrates the Study Area is located adjacent to surveyed concession roads. The Study Area is located within the properties of Andrew Allison, Heirs of Jas McKinney, Robert Copeland, Hugh Doherty, and Robert Currie. Little Etobicoke Creek runs along the western portion of the Study Area. There are no structures illustrated and the community of Sandhill is shown to the east of the Study Area.

The *Illustrated Historical Atlas of the County of Peel, Ont.* (Pope, 1877) illustrates increased property division and development around the Study Area. The community of Sandhill had been relabelled as Burnhamthorpe. The western section of the Study Area is illustrated in proximity to an orchard on the property of James Allison. The central section lists the following property owners: Sam McKinney, William Dougherty, and Edward Copeland. The northern portion of Edward Copeland's property includes a structure in proximity to the Study Area.

The *Brampton Sheet No. 35* (Department of Militia and Defence, 1909) map illustrates the predominantly rural context of the Study Area and shows several bridges constructed along Burnhamthorpe road.

The *NTS Brampton Sheet* (Department of National Defence, 1940) shows the Study Area as relatively unchanged from 1909 map, however it illustrates an increase in structures in the surrounding area, including two structures in proximity to the eastern portion of the Study Area.

The 1990s NTS (Department of Energy, Mines and Resources, 1990) shows drastic urban development around and within the Study Area. The major roads have been expanded and significant residential developments are present on all sides.

1.1.4. Aerial and Orthoimagery Review

Aerial photography of the Mississauga area from 1954 (Hunting Survey Corporation Limited, 1954), and available Google satellite imagery were examined to determine the extent and nature of development and land uses within the Study Area (Image 1, Image 2).



A review of available Google satellite imagery shows existing development within the Study Area and no significant impacts since 2003.

1.3 Archaeological Context

This section provides background research pertaining to previous archaeological fieldwork conducted within and in the vicinity of the Study Area, its environmental characteristics (including drainage, soils or surficial geology and topography, etc.), and current land use and field conditions. Three sources of information were consulted to provide information about previous archaeological research: the site record forms for registered sites available online from the MCM through *Ontario's Past Portal*; published and unpublished documentary sources; and the files of ASI.

1.3.1 Current Land Use and Field Conditions

The Study Area is six parcels along both sides of Burnhamthorpe Road and along Tomken Road, in the City of Mississauga (Figure 1). The parcels consist predominantly of landscaped manicured lawns, paved sidewalks and parking lots.

The Stage 1-2 survey for the Cawthra Phase 3 Sanitary Trunk Sewer project was conducted on May 10, 2024, under the field direction of Jose Gutierrez (R1213).

1.3.2 Geography

In addition to the known archaeological sites, the state of the natural environment is a helpful indicator of archaeological potential. Accordingly, a description of the physiography and soils are briefly discussed for the Study Area.

The S & G stipulates that primary water sources (lakes, rivers, streams, creeks, etc.), secondary water sources (intermittent streams and creeks, springs, marshes, swamps, etc.), ancient water sources (glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches, etc.), as well as accessible or inaccessible shorelines (high bluffs, swamp or marsh fields by the edge of a lake, sandbars



stretching into marsh, etc.) are characteristics that indicate archaeological potential.

Water has been identified as the major determinant of site selection and the presence of potable water is the single most important resource necessary for any extended human occupation or settlement. Since water sources have remained relatively stable in Ontario since 5,000 BP (Karrow & Warner, 1990, p. Figure 2.16), proximity to water can be regarded as a useful index for the evaluation of archaeological site potential. Indeed, distance from water has been one of the most commonly used variables for predictive modeling of site location.

Other geographic characteristics that can indicate archaeological potential include elevated topography (eskers, drumlins, large knolls, and plateaux), pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground, distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings. Resource areas, including food or medicinal plants (migratory routes, spawning areas) are also considered characteristics that indicate archaeological potential (S & G, Section 1.3.1).

A comprehensive summary of the geology and physiography of the Peel region is presented in the previous Stage 1 report (Golder Associates Ltd., 2020, pp. 12–15). To summarize, the Study Area is situated within the Till Plains (Drumlinized) of the South Slope physiographic region of southern Ontario (Chapman & Putnam, 1984). The South Slope physiographic region (Chapman & Putnam, 1984, pp. 172–174) is the southern slope of the Oak Ridges Moraine. The South Slope meets the Moraine at heights of approximately 300 metres above sea level, and descends southward toward Lake Ontario, ending, in some areas, at elevations below 150 metres above sea level. Numerous streams descend the South Slope, having cut deep valleys in the till.

The Study Area is within the Etobicoke Creek watershed. The Etobicoke Creek watershed, including its major tributaries Spring Creek, Little Etobicoke Creek, and West Etobicoke Creek, drains an area of approximately 21,100 hectares within the cities of Brampton, Mississauga, Toronto, and the Town of Caledon. The



creeks flow south from its headwaters in Caledon into Lake Ontario through 67 percent urban, 19 percent rural and 14 percent natural cover. Thousands of meters of stream within the watershed have been straightened and channelized. The remaining natural areas consist of river valleys and stream corridors which provide habitat patches and enable the movement of species along the corridor (Toronto and Region Conservation Authority, 2019). Historical streamflow data shows that annual streamflow has increased by 44 percent in the past 40 years, with significant acceleration in the past 10 years (TRCA, 2010).

The name Etobicoke Creek is derived from the Anishinaabemowin word “Wah-do-be kaug” meaning “place where the alders grow”. The creek was a source of fresh water and fish for Indigenous peoples. Historically, Etobicoke creek was slow and meandering, with irregular flow, and as a result when settlers arrived it was not used for the largescale milling operations seen along other watercourses. However, settlement along the creek still increased resulting in the clearing of forests, the draining of wetlands, and altering of the streams course, all of which destabilized the environment and increased the risk of flooding. The earliest recorded flooding of the creek was in 1854, and it became a regular occurrence over the years, with the worst occurrence in 1948 which caused half a million dollars of damage to Brampton’s downtown (City of Brampton, 2022).

Figure 8 depicts surficial geology for the Study Area. The surficial geology mapping demonstrates that the Study Area is underlain by Clay to silt-textured till (derived from glaciolacustrine deposits or shale), Paleozoic bedrock, and Modern alluvial deposits of clay, silt, sand, gravel, may contain organic remains (Ontario Geological Survey, 2010).

Soils within the Study Area include (Figure 9):

- Jeddo clay loam – poorly drained
- Chinguacousy clay loam – imperfectly drained
- Bottom Land – variable drainage
- Onieda clay loam – good drainage



1.3.3 Previously Registered Archaeological Sites

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database maintained by the MCM. This database contains archaeological sites registered within the Borden system. Under the Borden system, Canada has been divided into grid blocks based on latitude and longitude. A Borden block is approximately 13 kilometres east to west, and approximately 18.5 kilometres north to south. Each Borden block is referenced by a four-letter designator, and sites within a block are numbered sequentially as they are found. The Study Area under review is located in Borden block *AjGv*.

According to the Ontario Archaeological Sites Database, one previously registered archaeological sites was located within one kilometre of the Study Area, it is not located within 50 metres (MCM 2023). A summary of the sites is provided below.

Table 1: Registered Sites within One Kilometre of the Study Area

Borden Number	Site Name	Temporal/ Cultural Affiliation	Site Type	Researcher	CHVI
AjGv-69	N/A	Euro-Canadian	Church; homestead; school	The Archaeologists Inc. 2009; Archaeoworks 2018	N/A

1.3.4 Previous Archaeological Assessments

ASI reviewed previous archaeological assessments that detail fieldwork within 50 metres of the Study Area. Only those specific archaeological assessments of direct relevance to the present undertaking have been included here.



Reports within the Study Area

(ASI 1990) An Archaeological Resource Assessment of Silverthorn Feedermain Route Selection Study, City of Mississauga, Regional Municipality of Peel. PIF #90-021. ASI File 90KM-01.

ASI was contracted by Knox Martin Kretch Limited to conduct an archaeological resource assessment of the Silverthorn Feedermain Route. This assessment overlaps with a portion of the current Study Area south of Burnhamthorpe Road just east of Little Etobicoke Creek. The areas of overlap were subject to property inspection and test pit survey at five metre intervals and soils were found to be disturbed. No archaeological resources were encountered and required no further work.

(ASI 1992) An Archaeological Resource Assessment of Little Etobicoke Creek, City of Mississauga, Regional Municipality of Peel. PIF #92-010. ASI File 23M-04.

ASI was contracted by Marshall Macklin Monaghan to conduct an archaeological resource assessment as part of the Class Environmental Assessment of Little Etobicoke Creek. This assessment overlaps with a portion of the current Study Area south of Burnhamthorpe Road just east of Little Etobicoke Creek. The areas of overlap were subject to property inspection and test pit survey at five metre intervals and soils were found to be disturbed. No archaeological resources were encountered and required no further work.

(ASI 2008) Stage 1 Archaeological Assessment Burnhamthorpe Road East Class Environmental Assessment From Arista Way to Dixie Road, City of Mississauga, Ontario. PIF P264-035-2008. ASI File 07EA-P264.

ASI was contracted by iTRANS Consultant Inc. on behalf of the City of Mississauga to conduct a Stage 1 Archaeological Assessment from Arista Way to Dixie Road. Portions of this assessment along Burnhamthorpe Road overlap with the current Study Area. The areas of overlap were identified in this Stage 1 as previously disturbed and required no further work.



(Golder Associates Ltd., 2020) Stage 1 Archaeological Assessment Region of Peel Schedule 'C' Municipal Class EA for the Capacity Expansion of the Central Mississauga Wastewater System, Various Lots and Concessions, Geographic Township of Toronto, County of Peel, now the City of Mississauga, Regional Municipality of Peel. P468-0037-2019.

Golder Associates Ltd. was retained by GM BluePlan on behalf of the Regional Municipality of Peel to conduct a Stage 1 Archaeological Assessment as part of the Schedule 'C' Municipal Class EA for the Capacity Expansion of the Central Mississauga Wastewater System. The Class EA area covered 4,750 hectares, stretching from Etobicoke Creek to east of Mavis Road, and from Eglington Avenue to Stavebank Road. This assessment covered the entire Study Area and determined that some areas were disturbed and require no further work while others were identified as retaining archaeological potential and recommended for Stage 2 assessment. The portions of the Study Area along Tomken Road were subject to background assessment as part of the report but was not subject to property inspection.

2.0 Field Methods

The Stage 1-2 Study Area comprises six parcels along both sides of Burnhamthorpe Road and along Tomken Road, in the City of Mississauga (Figure 1). The parcels are irregular shapes and cover a combined area of 0.76 hectares (Figure 10).

The Stage 1-2 property survey was conducted under the field direction of Jose Gutierrez (R1213) on May 10, 2024, in accordance with the *Ontario Heritage Act* and the S & G, Section 2. During the field assessments, weather and lighting conditions permitted good visibility and were in accordance with the S & G, Section 2.1, Standard 3. During the time of survey, conditions were seasonal with partly sunny skies and temperatures of 15 degrees Celsius. Photographs of all field conditions were taken (Image 1-Image 12), and the location and direction of each photograph is mapped in Figure 10.

As per Section 2.1 of the S & G, all lands were within areas where ploughing was not possible or viable and therefore subject to test pit survey. According to



Section 2.1.2, Standard 2 of the S & G, any undisturbed areas requiring test pit survey within 300 metres of any feature of archaeological potential must be subject to systematic assessment at five metre intervals. No intact soil profiles were encountered during the test pit survey, therefore judgmental 10 metre intervals were employed to confirm previous disturbance as per S & G Section 2.1.8b. All test pits were excavated following the S & G Section 2.1.2 Standards 5-9. All test pits were excavated by hand to a minimum of 30 centimetres in diameter and into the first five centimetres of subsoil. Each test pit was examined for stratigraphy, cultural features, and evidence of fill. Test pit fill was screened through six-millimetre mesh to facilitate artifact recovery. Afterwards, all test pits were backfilled, and their locations were recorded on field maps. Any factors that precluded the excavation of test pits (e.g., excessive slope, drainage, exposed bedrock, previous disturbance) were noted, and the areas were mapped and photographed.

Fieldwork was conducted using a Samsung Galaxy S4 tablet running Esri Collector software equipped with a sub-metre Trimble Catalyst Global Navigation Satellite System in conjunction with project mapping provided by the Arcadis to ensure the assessment remained within the Study Area limits.

2.1 Areas of No Archaeological Potential

Approximately 56 percent of the Study Area (0.43 hectares) was previously assessed without further recommendations and not subject to Stage 2 assessment as per S & G Section 2.1, Standard 2.c (ASI 1990; ASI 1992; ASI 2008; Golder Associates Ltd., 2020). The portions of the Study Area that were subject to background research but not property inspection as part of the Golder Stage 1, were visited and photo documented as part of this current Stage 1-2 assessment.

Visual assessment determined that a portion of the Study Area did not retain archaeological potential. Approximately 39 percent of the Study Area (0.29 hectares) had been previously subject to deep and extensive ground disturbance and was not subject to Stage 2 survey, as per S & G Section 2.1, Standard 2.b. The lands documented as being previously disturbed have no archaeological potential and include engineered slopes, paved sidewalks, trails, and parking lots (Figure 10-Figure 12; Image 3, Image 4, Image 7, Image 8).



2.2 Test Pit Survey

Approximately 5 percent of the Study Area (0.03 hectares) did not contain natural topsoil (A-horizon) and was subject to judgmental test pit survey at 10 metre intervals to confirm previous disturbance following S & G Section 2.1.8, Standards 1-2. The areas subject to judgmental test pit survey include three narrow slivers of manicured lawn along Tomken Road (Figure 11-Figure 12; Image 5, Image 6, Image 9-Image 11).

Disturbed stratigraphy in the Study Area is characterized by a range of fill soils. Profiles include 30 centimetres 10YR 3/2 clay loam laid topsoil, overlying 23 centimetres of very dark grayish brown (10YR 3/2) clay loam mixed with very pale brown (10YR 7/4) sandy clay mixed with blueish grey sandy clay fill, overlying 26 centimetres of brown (7.5YR 4/3) mix with blue grey sandy clay fill with gravel and brick inclusions, atop 6 centimetres of pale brown (10YR 6/3) sandy clay subsoil (B-horizon) (Image 9). Other examples include 15 centimetres of very dark grayish brown (10YR 3/2) clay loam laid topsoil, overlying 30 centimetres of light reddish brown (5YR 6/3) clay sand fill with cement, brick, asphalt, and gravel inclusions, atop 15 centimetres of dark reddish brown (2.5 YR 4/1) sand fill with gravel, plastic, coal, and cement inclusions (Image 10).

2.3 Stage 2 Assessment Results Summary

A summary of the Stage 2 assessment results for the Cawthra Phase 3 Sanitary Trunk Sewer Project can be found in Table 2 below.



Table 2: Stage 2 Survey Results Summary

Survey Method	Area	Description	Images
Not assessed due to previous assessment; no further work recommended	0.43 hectares (56 percent)	(ASI 1990; ASI 1992; ASI 2008; Golder Associates Ltd., 2020)	
Visually assessed as being previously disturbed; no archaeological potential	0.29 hectares (39 percent)	Engineered slopes, paved sidewalks, trails, and parking lot, gravel parking lot;	Image 3, Image 4, Image 7, Image 8
Judgmental test pit survey; 10 metre intervals	0.03 hectares (five percent)	Manicured lawns	Image 5, Image 6, Image 9- Image 11

3.0 Record of Finds

No archaeological resources were encountered during the course of the Stage 2 Archaeological Assessment for the Cawthra Phase 3 Sanitary Trunk Sewer.

3.1 Inventory of Documentary and Material Record

The documentation related to this archaeological assessment will be curated by ASI until such a time that arrangements for their ultimate transfer to His Majesty the King in right of Ontario, or other public institution, can be made to the satisfaction of the project owner(s), the MCM, and any other legitimate interest groups.

Table 3 provides an inventory and location of the documentary and material record for the project in accordance with the S & G, Sections 6.7 and 7.8.2.3.



Table 3: Inventory of Documentary and Material Record

Material	Location	Comments
Digital field notes, field maps, GPS logs, etc.	Archaeological Services Inc., 528 Bathurst Street, Toronto, Ontario, M5S 2P9	Stored in ASI project folder 23EA-219; GPS and digital information stored on ASI network servers
Digital field photography	Same as above	Files stored on ASI network servers
Digital research, analysis, and reporting materials	Same as above	Files stored on ASI network servers

4.0 Analysis and Conclusions

Archaeological Services Inc. (ASI) was contracted by Arcadis to conduct a Stage 1-2 Archaeological Assessment as part of the Cawthra Phase 3 Sanitary Trunk Sewer (Figure 1). This project involves new shaft locations which will be used for tunneling to construct a sanitary trunk sewer.

The Stage 1-2 property survey was conducted on May 10, 2024, in accordance with the *Ontario Heritage Act* and the S & G by test pit survey. Approximately 56 percent of the Study Area (0.43 hectares) was previously assessed without further recommendations and not subject to Stage 2 assessment as per S & G Section 2.1, Standard 2.c (ASI 1990; ASI 1992; ASI 2008; Golder Associates Ltd., 2020).

Approximately 39 percent of the Study Area (0.29 hectares) had been previously subject to deep and extensive ground disturbance and was not subject to Stage 2 survey, as per S & G Section 2.1, Standard 2.b. The lands documented as being previously disturbed have no archaeological potential and include engineered slopes, paved sidewalks, trails, and parking lot, gravel parking lot (Figure 10-Figure 12; Image 3, Image 4, Image 7, Image 8). These areas were not subject to Stage 2 assessment.



The remaining 5 percent of the Study Area (0.03 hectares), comprising manicured lawns, was subject to judgmental test pit survey at 10 metre intervals to confirm previous disturbance (Figure 11-Figure 12; Image 3, Image 4, Image 7, Image 8). No archaeological resources or intact A-horizon (natural topsoil) were encountered during the Stage 2 survey, and no further archaeological assessment is recommended.

5.0 Recommendations

In light of these results, the following recommendations are made:

1. The Study Area does not require further archaeological assessment; and
2. Should the proposed work extend beyond the current Study Area, or should changes to the project design or temporary workspace requirements result in the inclusion of previously un-surveyed lands, these lands should be subject to a Stage 2 archaeological assessment.

NOTWITHSTANDING the results and recommendations presented in this study, ASI notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. In the event that archaeological remains are found during subsequent construction activities, the consultant archaeologist, approval authority, and the Archaeology Programs Unit of the MCM should be immediately notified.

The above recommendations are subject to Ministry approval, and it is an offence to alter any archaeological site without MCM concurrence. No grading or other activities that may result in the destruction or disturbance of any archaeological sites are permitted until notice of MCM approval has been received.

6.0 Legislation Compliance Advice

ASI advises compliance with the following legislation:



- This report is submitted to the Ministry of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 2005, 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 field work and report recommendations ensure the conservation, preservation, and protection 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 with regards 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 field work 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 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 sec. 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 or having knowledge of a burial site shall immediately notify the police or coroner. It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.
- Archaeological sites recommended for further archaeological field work or protection remain subject to Section 48(1) of the *Ontario Heritage Act*



and may not be altered, nor may artifacts be removed from them, except by a person holding an archaeological license.



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8.0 Images

8.1 Historical Imagery



Image 1: Google Earth Imagery from 2003 showing the portions of the Study Area Adjacent to Burnhamthorpe Road East and Tomken Road.

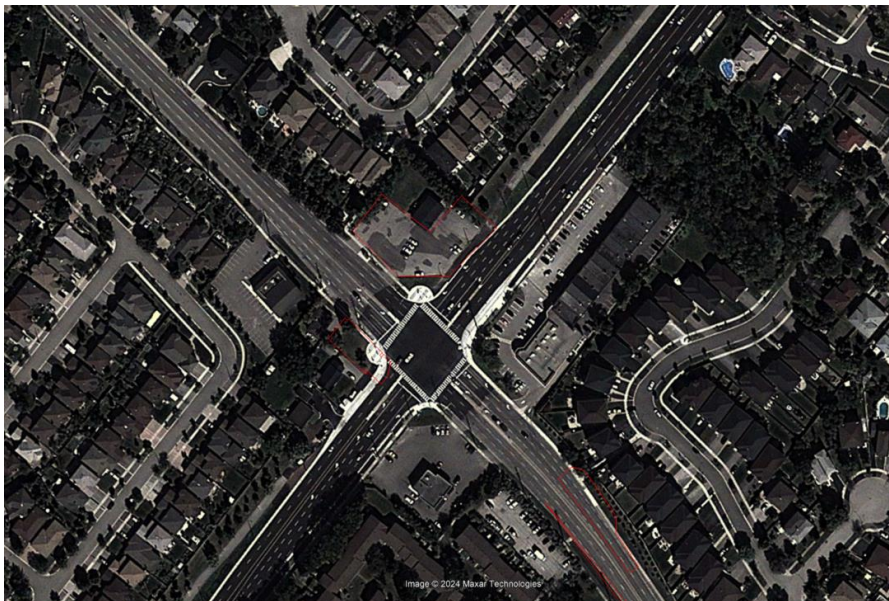


Image 2: Google Earth Imagery from 2013 showing the portions of the Study Area Adjacent to Burnhamthorpe Road East and Tomken Road.

8.2 Field Photography



Image 3: Disturbance caused by engineered slope and ditch along paved sidewalk; no potential.

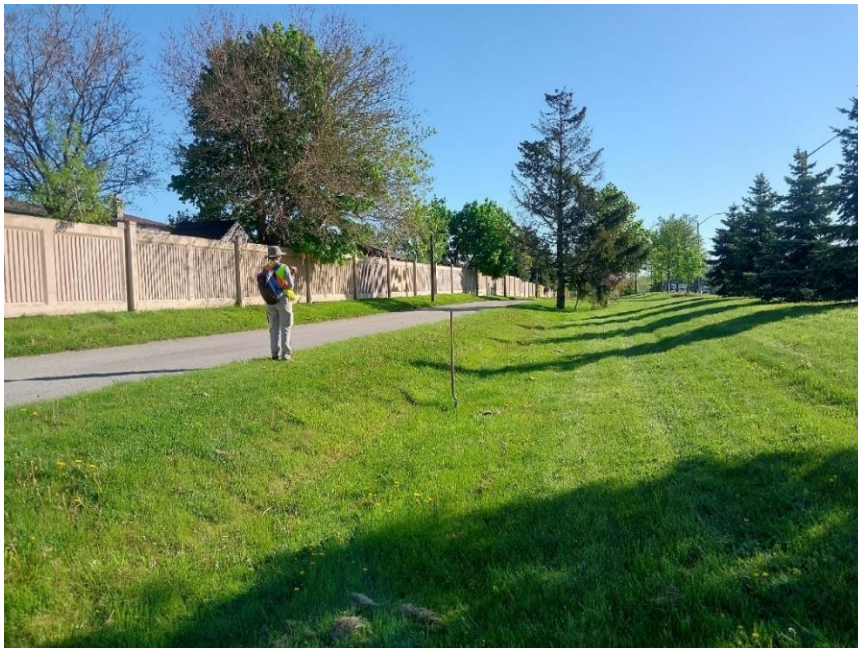


Image 4: Disturbance caused by engineered slope and ditch along paved sidewalk; no potential.



Image 5: Representative test pit demonstrating disturbed stratigraphy.



Image 6: Judgemental test pit survey at ten metre intervals.



Image 7: Area disturbed by commercial development; no potential.



Image 8: Buried utilities and commercial development; no potential.



Image 9: Representative test pit demonstrating disturbed stratigraphy.



Image 10: Representative test pit demonstrating disturbed stratigraphy.



Image 11: Judgemental test pit survey at ten metre intervals.



Image 12: Roadway and sidewalk; no potential (Google Streetview, 2021)

9.0 Maps



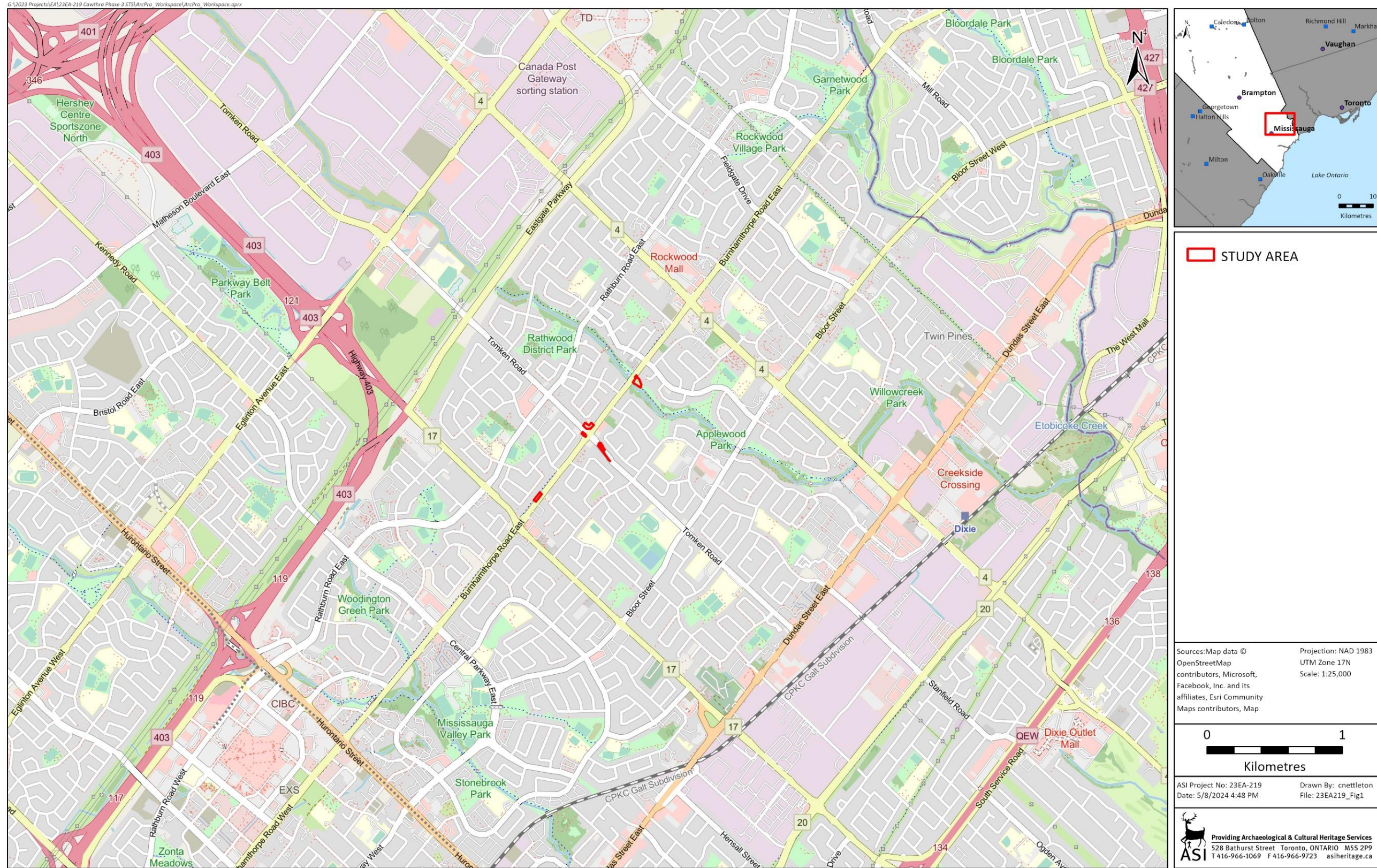


Figure 1: Location of the Study Area



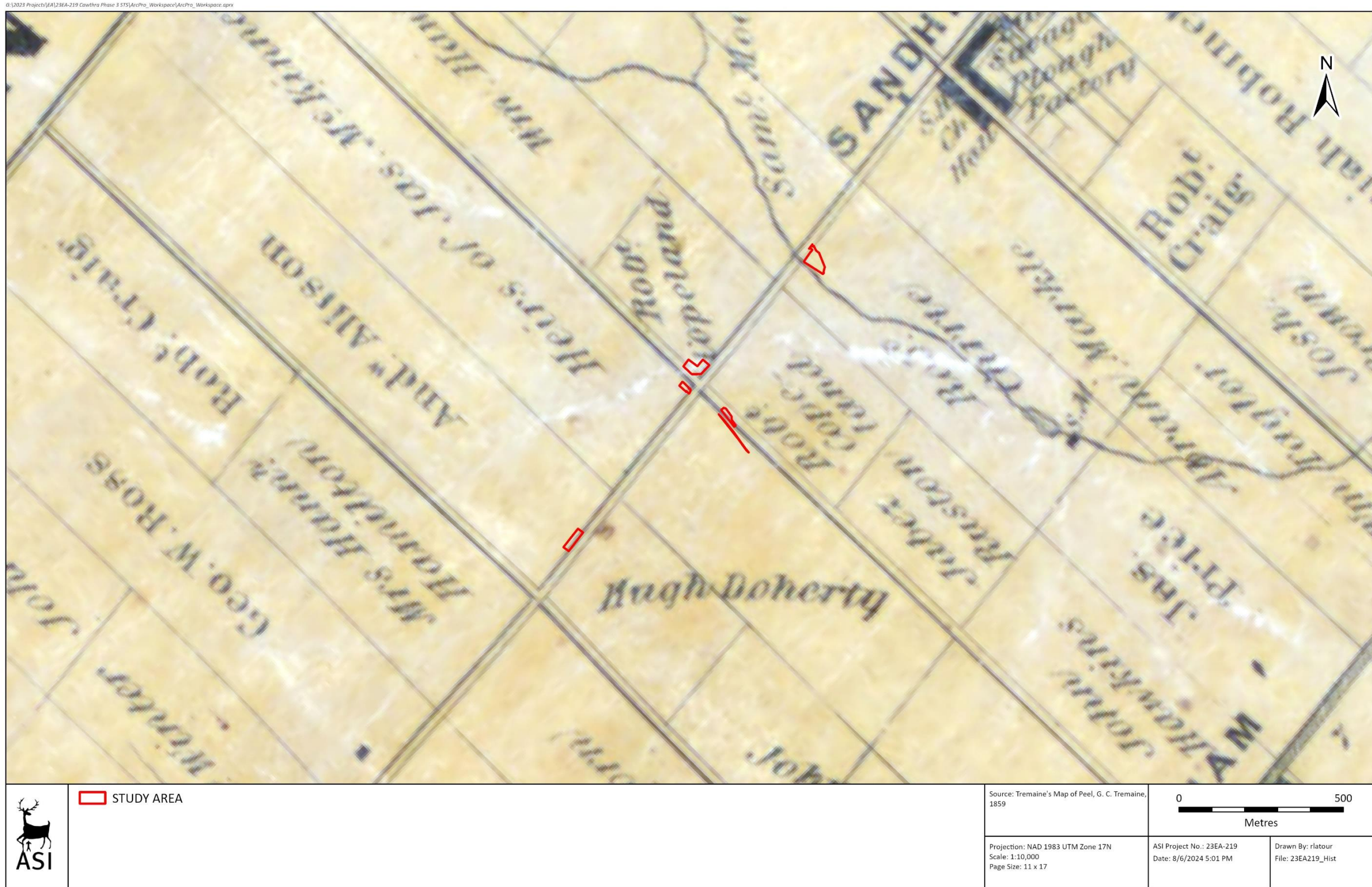


Figure 2: Study Area (approximate location) overlaid on the 1859 Tremaine's Map of the County of Peel



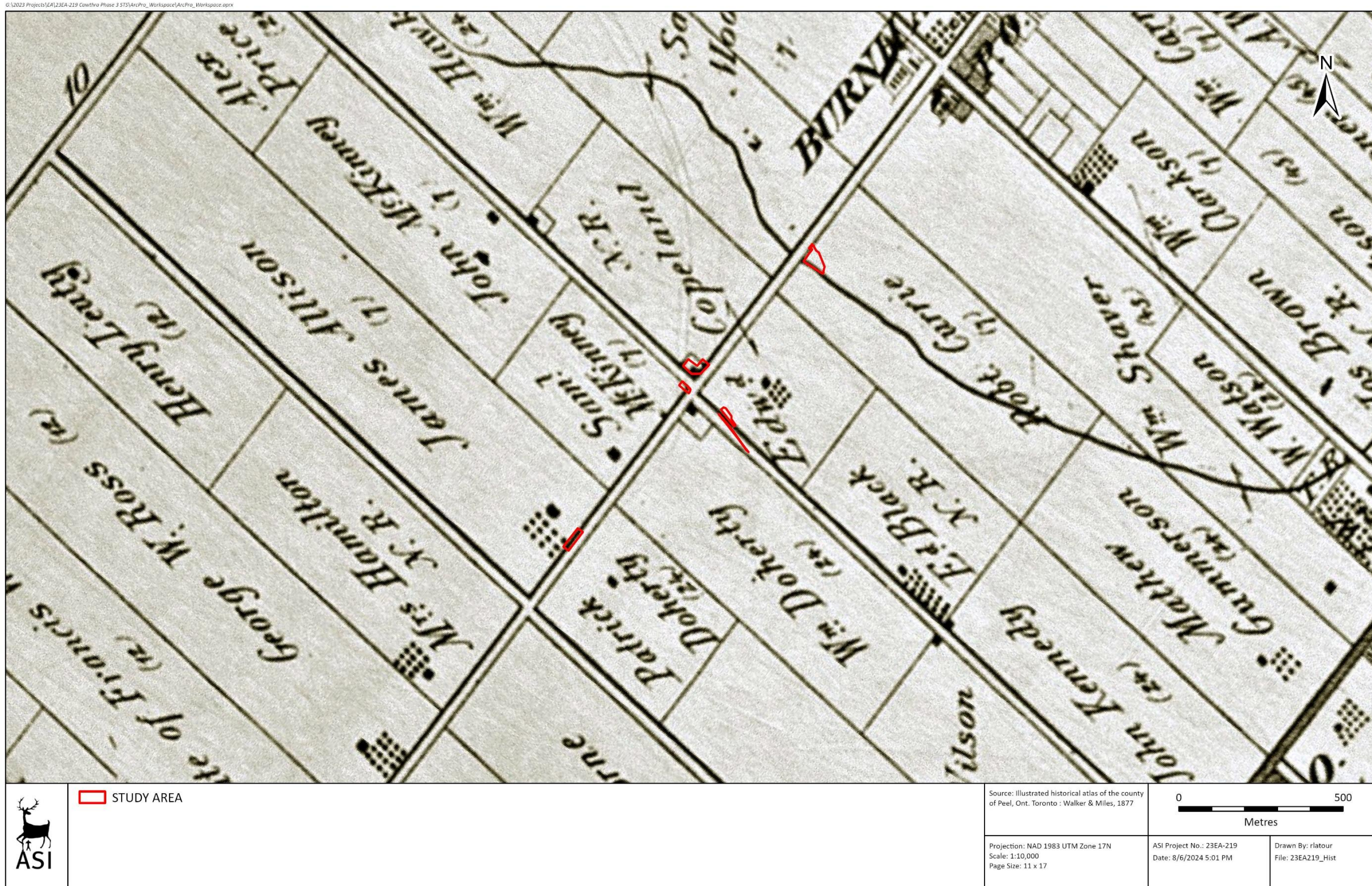


Figure 3: Study Area (approximate location) overlaid on the 1877 *Illustrated Historical Atlas of the County of Peel, Ont.*

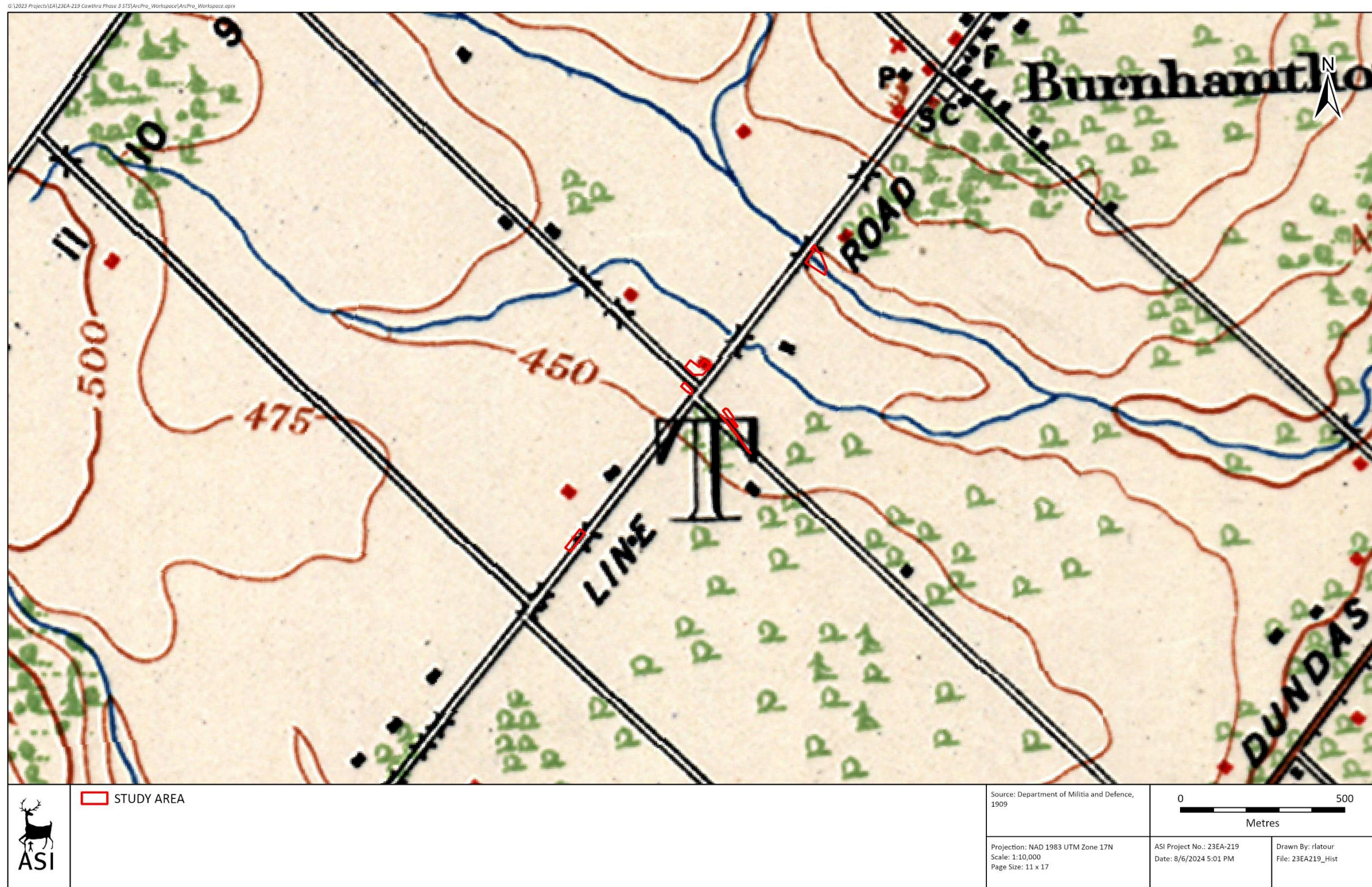


Figure 4: Study Area (approximate location) overlaid on the 1909 *Brampton Sheet No. 35*

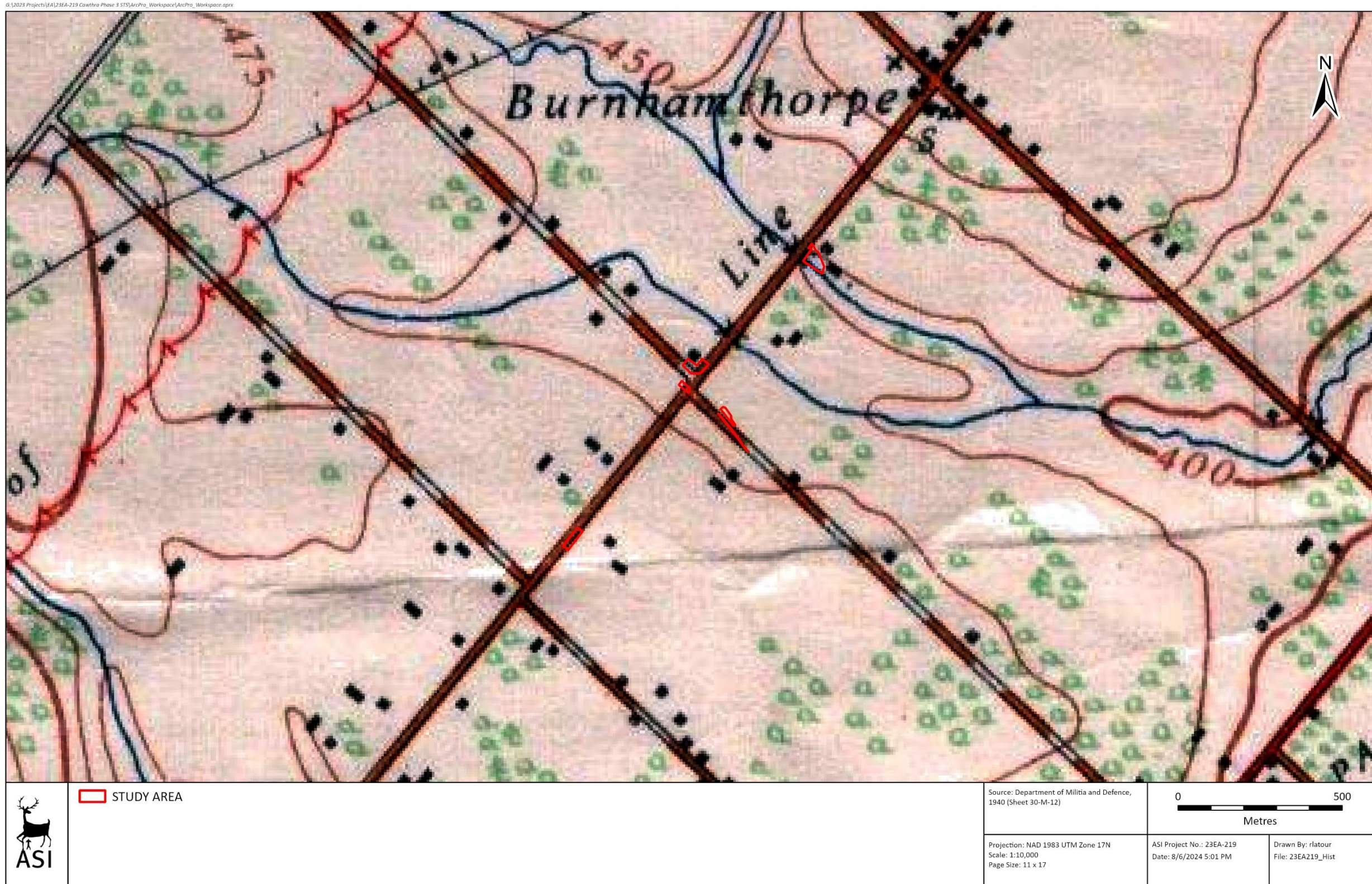


Figure 5: Study Area (approximate location) overlaid on the 1940 NTS Brampton Sheet



Figure 6: Study Area (approximate location) overlaid on aerial imagery from the 1954 Huntington Survey

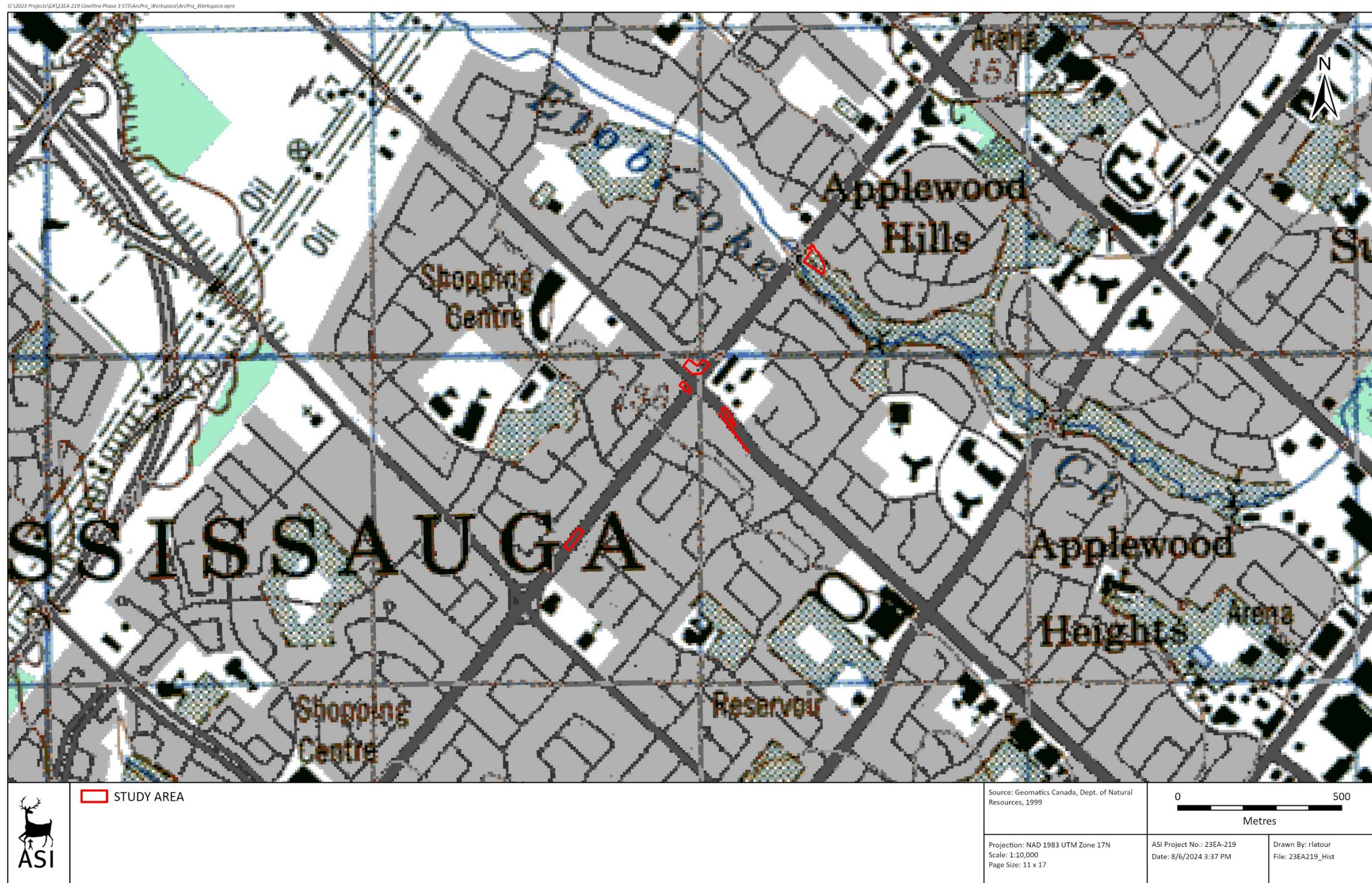


Figure 7: Study Area (approximate location) overlaid on the 1990s NTS Brampton Sheet

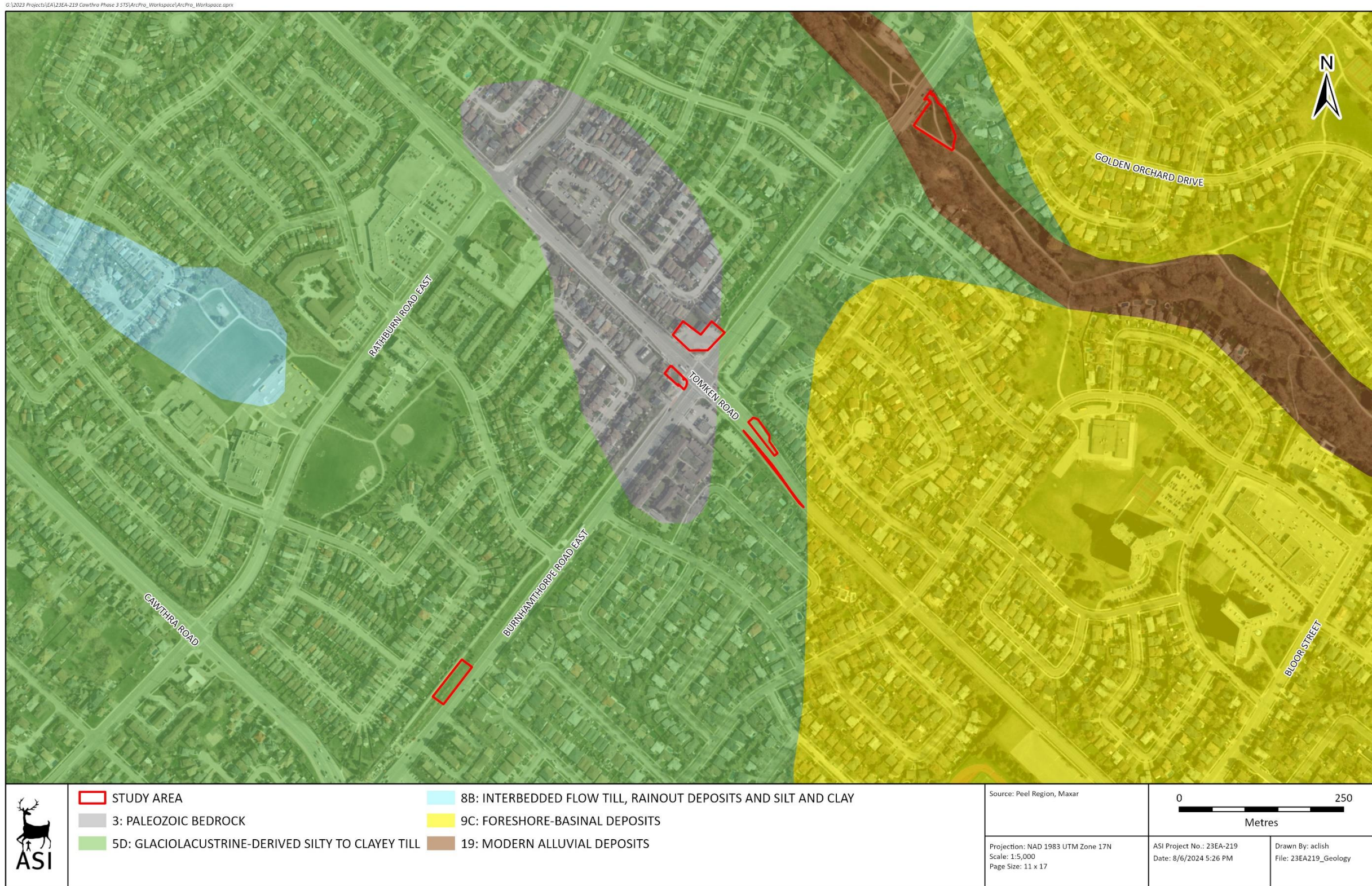


Figure 8: Surficial Geology within the Study Area.



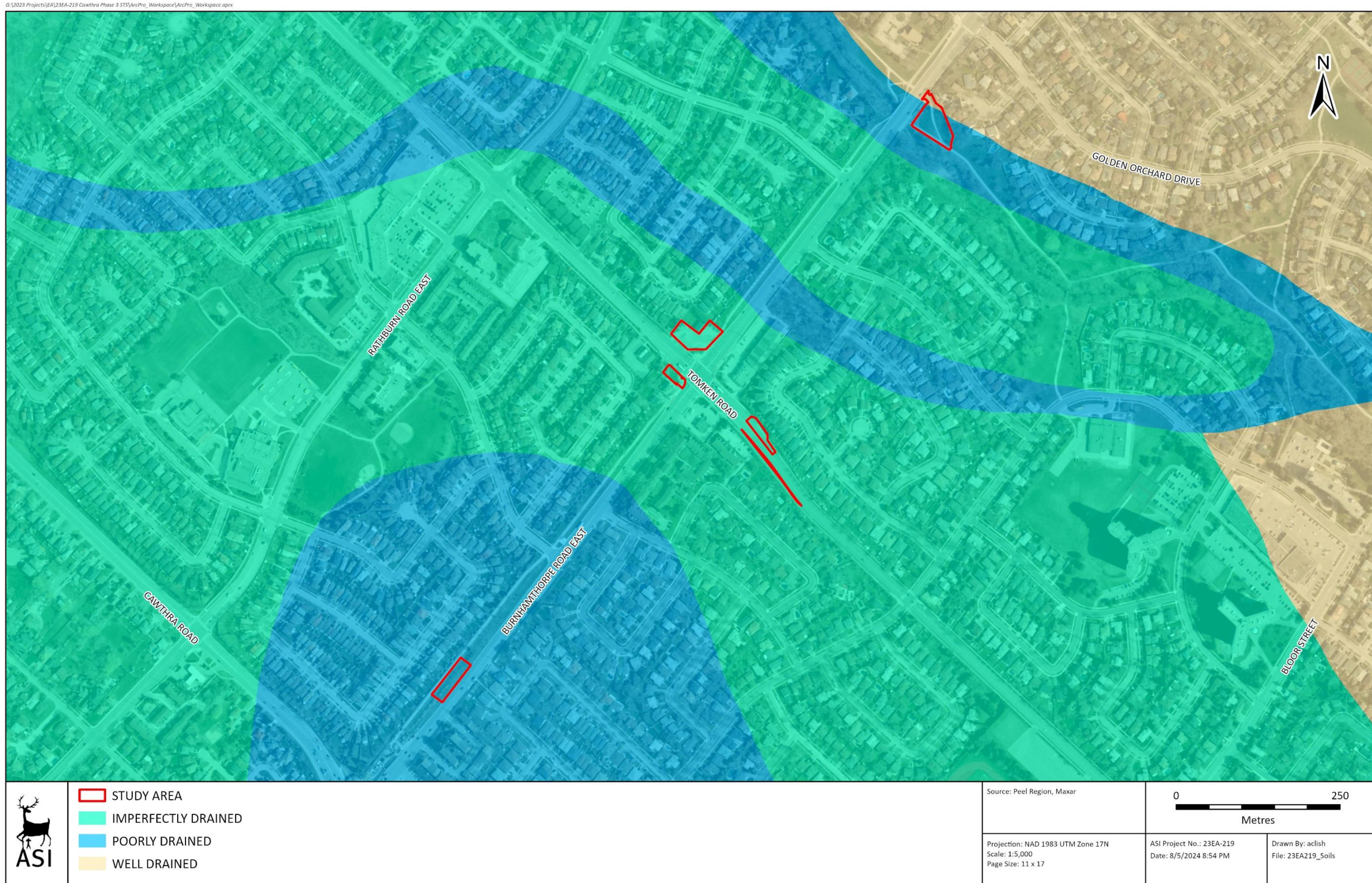


Figure 9: Soil Drainage within the Study Area

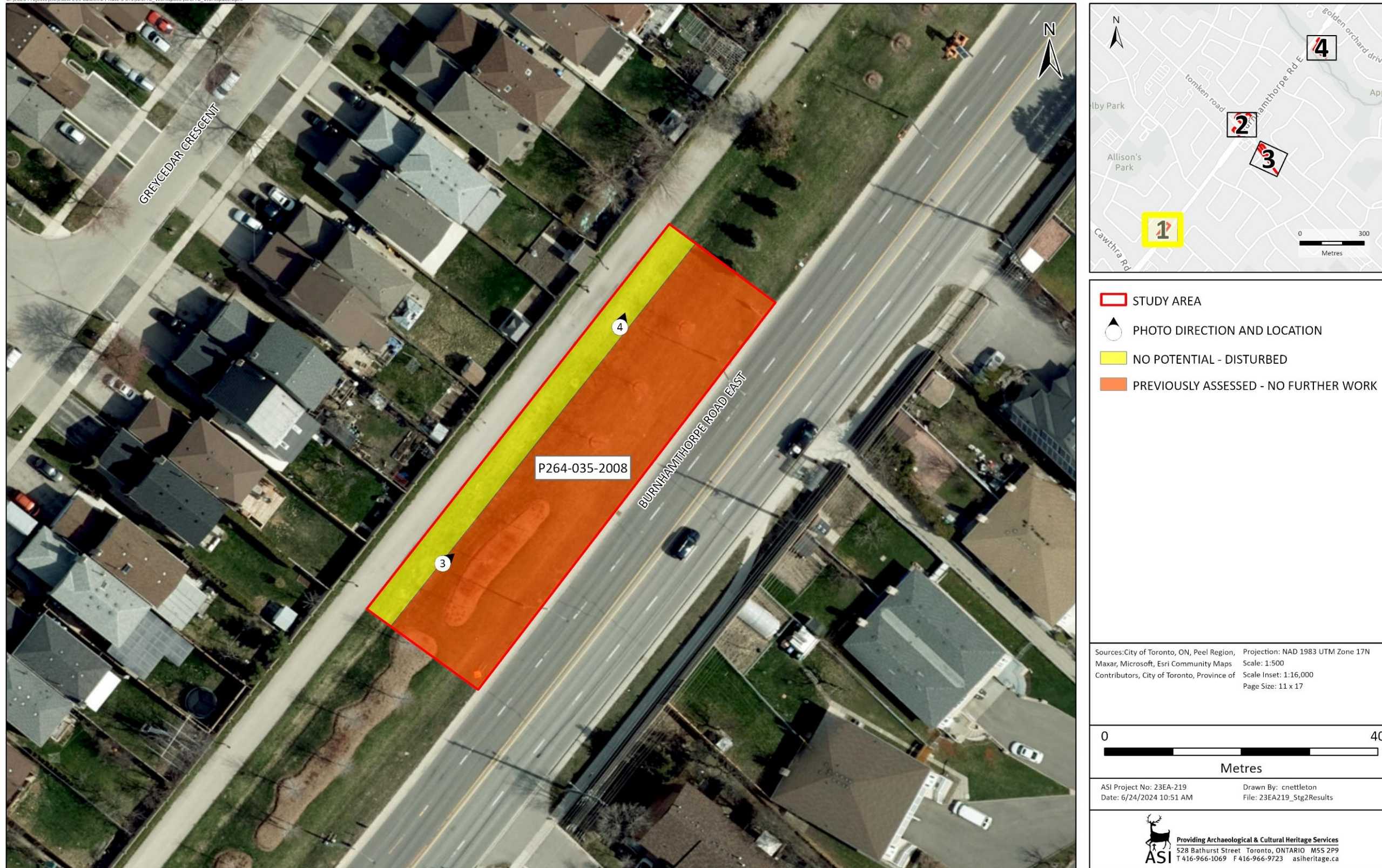


Figure 10: Stage 1-2 Archaeological Assessment Results for the Cawthra Phase 3 Sanitary Trunk Sewer – Sheet 1.



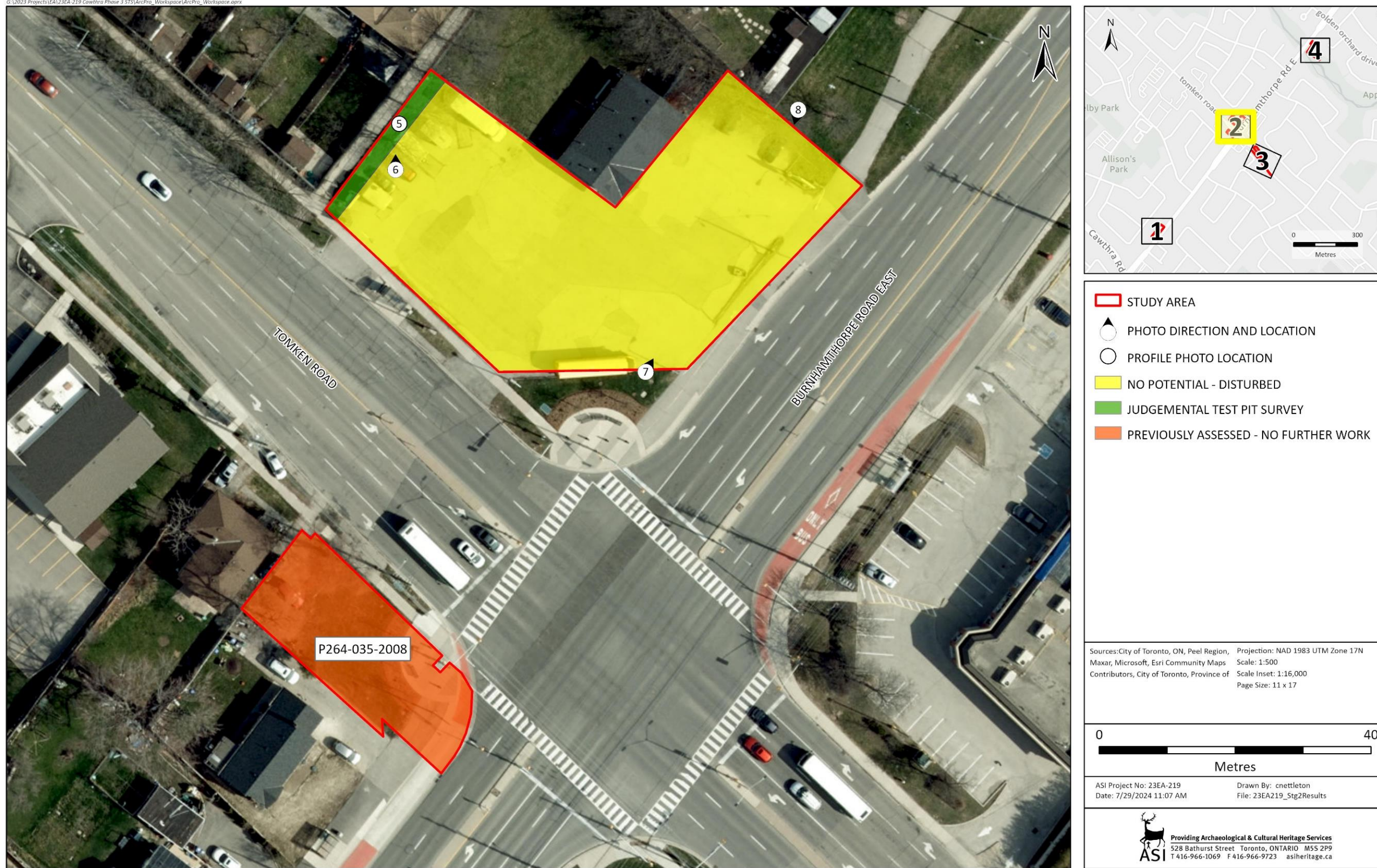
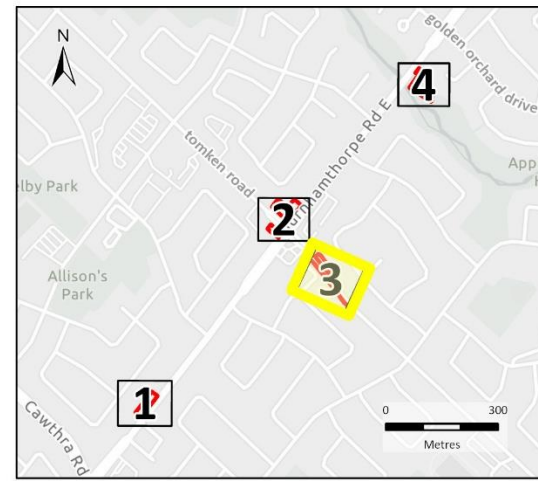


Figure 11: Stage 1-2 Archaeological Assessment Results for the Cawthra Phase 3 Sanitary Trunk Sewer – Sheet 2.

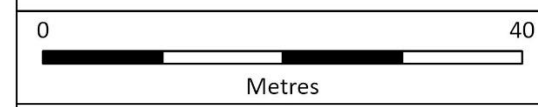




STUDY AREA

- NO POTENTIAL - DISTURBED
- JUDGEMENTAL TEST PIT SURVEY
- PHOTO DIRECTION AND LOCATION
- PROFILE PHOTO LOCATION

Sources: City of Toronto, ON, Peel Region, Maxar, Microsoft, Esri Community Maps
 Projection: NAD 1983 UTM Zone 17N
 Scale: 1:500
 Contributors: City of Toronto, Province of Ontario
 Scale Inset: 1:16,000
 Page Size: 11 x 17



ASI Project No: 23EA-219 Drawn By: cnettleton
 Date: 8/13/2024 4:50 PM File: 23EA219_Stg2Results

ASI Providing Archaeological & Cultural Heritage Services
 528 Bathurst Street Toronto, ONTARIO M5S 2P9
 T 416-966-1069 F 416-966-9723 asiheritage.ca

Figure 12: Stage 1-2 Archaeological Assessment Results for the Cawthra Phase 3 Sanitary Trunk Sewer – Sheet 3.



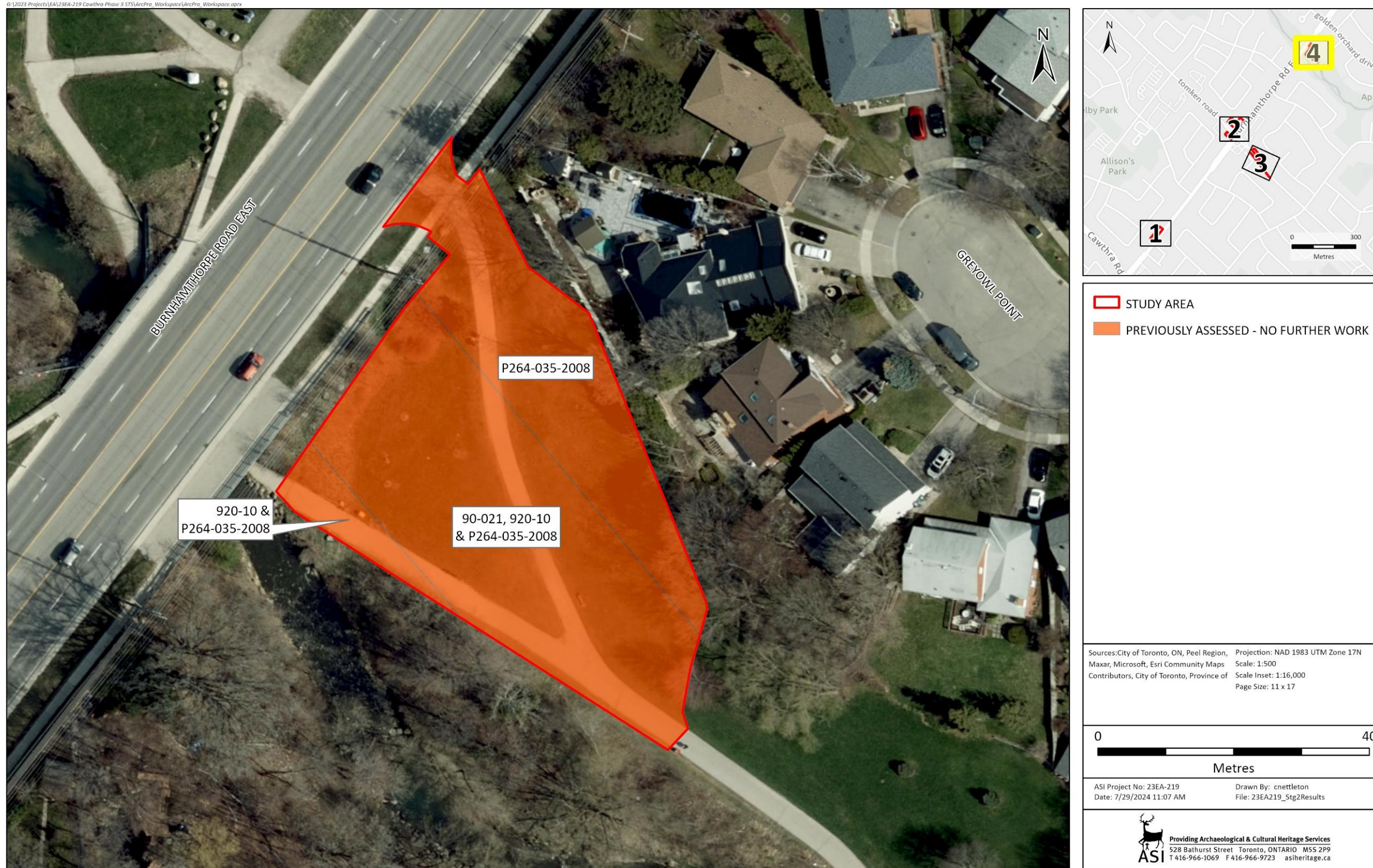


Figure 13: Stage 1-2 Archaeological Assessment Results for the Cawthra Phase 3 Sanitary Trunk Sewer – Sheet 4.

