APPENDIX D - STAGE 1 ARCHAEOLOGICAL ASSESSMENT REPORT

STAGE 1 ARCHAEOLOGICAL ASSESSMENT
ST. PAUL STREET WEST CNR BRIDGE REPLACEMENT
LOTS 19-20, CONCESSION 7
FORMER GRANTHAM TOWNSHIP, COUNTY OF WELLAND
CITY OF ST. CATHARINES
REGIONAL MUNICIPALITY OF NIAGARA

ORIGINAL REPORT

Prepared for:

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Archaeological Licence #P450 (Parks)
Ministry of Tourism, Culture and Sport PIF# P450-0069-2018
ASI File: 18EA-170

13 February 2018

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Stage 1 Archaeological Assessment
St. Paul Street West CNR Bridge Replacement
Lots 19-20, Concession 7
Former Grantham Township, County of Welland
City of St. Catharines
Regional Municipality of Niagara

EXECUTIVE SUMMARY

Archaeological Services Inc. was contracted by Associated Engineering Ltd. to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the St. Paul Street West CNR Bridge Replacement Municipal Class Environmental Assessment. This project involves the replacement of the CNR Bridge, Structure No. 081215, located at Mile 11.68 Grimsby Subdivision in the City of St. Catharines. The existing bridge was constructed circa 1922 and is a two lane, three span slab on steel girder structure. The MCEA will evaluate alternatives for the vertical alignment of the roadway overpass, (road over rail) considering impacts to property access along St. Paul Street West from Great Western Street to Merigold Street.

The Stage 1 background study determined that three previously registered archaeological sites are located within one kilometre of the Study Area. The property inspection determined that parts of the Study Area exhibit archaeological potential and, if impacted, will require Stage 2 assessment, prior to any construction activities.

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

1. The Study Area exhibits archaeological potential. If impacted, these lands require Stage 2 archaeological assessment by test pit survey at five metre intervals, where appropriate, prior to any construction activities;

2. The remainder of the Study Area does not retain archaeological potential on account of being previously assessed or subject to deep and extensive disturbance. These lands do not require further archaeological assessment; and,

3. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

ASI

PROJECT PERSONNEL

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1.0 PROJECT CONTEXT

Archaeological Services Inc. (ASI) was contracted by Associated Engineering Ltd. to conduct a Stage 1 Archaeological Assessment (Background Research and Property Inspection) as part of the St. Paul Street West CNR Bridge Replacement Municipal Class Environmental Assessment (MCEA). This project involves the replacement of the CNR Bridge, Structure No. 081215, located at Mile 11.68 Grimsby Subdivision in the City of St. Catharines (Figure 1). The existing bridge was constructed circa 1922 and is a two lane, three span slab on steel girder structure. The MCEA will evaluate alternatives for the vertical alignment of the roadway overpass, (road over rail) considering impacts to property access along St. Paul Street West from Great Western Street to Merigold Street.

All activities carried out during this assessment were completed in accordance with the *Ontario Heritage Act* (1990, as amended in 2018) and the 2011 *Standards and Guidelines for Consultant Archaeologists* (S & G), administered by the Ministry of Tourism, Culture and Sport (MTCS 2011).

1.1 Development Context

All work has been undertaken as required by the *Environmental Assessment Act*, RSO (Ministry of the Environment 1990 as amended 2010) and regulations made under the Act, and are therefore subject to all associated legislation. This project is being conducted in accordance with the Municipal Engineers' Association document *Municipal Class Environmental Assessment* (2000 as amended in 2007, 2011 and 2015).

Authorization to carry out the activities necessary for the completion of the Stage 1 archaeological assessment was granted by Associated Engineering Ltd. on December 14, 2018.

1.2 Historical Context

The purpose of this section, according to the S & G, Section 7.5.7, Standard 1, is to describe the past and present land use and the settlement history and any other relevant historical information pertaining to the Study Area. A summary is first presented of the current understanding of the Indigenous land use of the Study Area. This is then followed by a review of the historical Euro-Canadian settlement history.

1.2.1 Indigenous Land Use and Settlement

Southern Ontario has been occupied by human populations since the retreat of the Laurentide glacier approximately 13,000 years before present (BP) (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 BP, the environment had progressively warmed (Edwards and Fritz 1988) and populations now occupied less extensive territories (Ellis and Deller 1990).

Between approximately 10,000-5,500 BP, 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 BP; the latter was acquired from the north shore of Lake Superior, evidence of extensive exchange networks throughout the Great Lakes region. The earliest evidence for cemeteries dates to approximately 4,500-3,000 BP and is indicative of increased social organization, investment of labour into social infrastructure, and the establishment of socially prescribed territories (Ellis et al. 1990; Ellis et al. 2009; Brown 1995:13).

Between 3,000-2,500 BP, populations continued to practice residential mobility and to harvest seasonally available resources, including spawning fish. The Woodland period begins around 2500 BP and exchange and interaction networks broaden at this time (Spence et al. 1990:136, 138) and by approximately 2,000 BP, evidence exists for macro-band camps, focusing on the seasonal harvesting of resources (Spence et al. 1990:155, 164). By 1500 BP there is macro botanical evidence for maize in southern Ontario, and it is thought that maize only supplemented people's diet. There is earlier phytolithic evidence for maize in central New York State by 2300 BP - it is likely that once similar analyses are conducted on Ontario ceramic vessels of the same period, the same evidence will be found (Birch and Williamson 2013:13–15). Bands likely retreated to interior camps during the winter. 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 BP, lifeways became more similar to that described in early historical documents. Between approximately 1000-1300 Common Era (CE), the communal site is replaced by the village focused on horticulture. Seasonal disintegration of the community for the exploitation of a wider territory and more varied resource base was still practised (Williamson 1990:317). By 1300-1450 CE, this episodic community disintegration was no longer practised and populations now communally occupied sites throughout the year (Dodd et al. 1990:343). From 1450-1649 CE this process continued with the coalescence of these small villages into larger communities (Birch and Williamson 2013). Through this process, the socio-political organization of the First Nations, as described historically by the French and English explorers who first visited southern Ontario, was developed. By 1600 CE, the communities within Simcoe County had formed the Confederation of Nations encountered by the first European explorers and missionaries. In the 1640s, the traditional enmity between the Haudenosaunee[1] and the Huron-Wendat (and their Algonkian allies such as the Nippissing and Odawa) led to the dispersal of the Huron-Wendat.

Samuel de Champlain in 1615 reported that a group of Iroquoian-speaking people situated between the Haudenosaunee and the Huron-Wendat were at peace and remained "la nation neutre". In subsequent years, the French visited and traded among the Neutral, but the first documented visit was not until 1626, when the Recollet missionary Joseph de la Roche Daillon recorded his visit to the villages of the Attiwandaron, whose name in the Huron-Wendat language meant "those who speak a slightly different tongue" (the Neutral apparently referred to the Huron-Wendat by the same term). Like the Huron-Wendat, Petun, and Haudenosaunee, the Neutral people were settled village agriculturalists. Several discrete settlement clusters have been identified in the lower Grand River, Fairchild-Big Creek, Upper Twenty Mile Creek, Spencer-Bronte Creek drainages, Milton, Grimsby, Eastern Niagara Escarpment and Onondaga Escarpment areas, which are attributed to Iroquoian populations. These settlement clusters are believed by some scholars to have been inhabited by populations of the Neutral Nation or pre- (or ancestral) Neutral Nation (Lennox and Fitzgerald 1990).

[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 groups – 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 1647 and 1651, the Neutral were decimated by epidemics and ultimately dispersed by the Haudenosaunee, who subsequently settled along strategic trade routes on the north shore of Lake Ontario for a brief period during the mid seventeenth-century. Compared to settlements of the Haudenosaunee, the "Iroquois du Nord" occupation of the landscape was less intensive. Only seven villages are identified by the early historic cartographers on the north shore, and they are documented as considerably smaller than those in New York State. The populations were agriculturalists, growing maize, pumpkins, and squash. These settlements also played the important alternate role of serving as stopovers and bases for Haudenosaunee travelling to the north shore for the annual beaver hunt (Konrad 1974).

Shortly after dispersal of the Wendat and their Algonquian allies, Ojibwa began to expand into southern Ontario and Michigan from a "homeland" along the east shore of Georgian Bay, west along the north shore of Lake Huron, and along the northeast shore of Lake Superior and onto the Upper Peninsula of Michigan (Rogers 1978:760–762). This history was constructed by Rogers using both Anishinaabek oral tradition and the European documentary record, and notes that it included Chippewa, Ojibwa, Mississauga, and Saulteaux or "Southeastern Ojibwa" groups. Ojibwa, likely Odawa, were first encountered by Samuel de Champlain in 1615 along the eastern shores of Georgian Bay. Etienne Brule later encountered other groups and by 1641, Jesuits had journeyed to Sault Sainte Marie (Thwaites 1896:11:279) and opened the Mission of Saint Peter in 1648 for the occupants of Manitoulin Island and the northeast shore of Lake Huron. The Jesuits reported that these Algonquian peoples lived "solely by hunting and fishing and roam as far as the "Northern sea" to trade for " Furs and Beavers, which are found there in abundance" (Thwaites 1896-1901, 33:67), and "all of these Tribes are nomads, and have no fixed residence, except at certain seasons of the year, when fish are plentiful, and this compels them to remain on the spot" (Thwaites 1896-1901, 33:153). Algonquian-speaking groups were historically documented wintering with the Huron-Wendat, some who abandoned their country on the shores of the St. Lawrence because of attacks from the Haudenosaunee (Thwaites 1896-1901, 27:37).

Other Algonquian groups were recorded along the northern and eastern shores and islands of Lake Huron and Georgian Bay - the "Ouasouarini" [Chippewa], the "Outchougai" [Outchougai], the "Atchiligouan" [Achiligouan] near the mouth of the French River and north of Manitoulin Island the "Amikouai, or the nation of the Beaver" [Amikwa; Algonquian] and the "Oumisagai" [Missisauga; Chippewa] (Thwaites 1896-1901, 18:229, 231). At the end of the summer 1670, Father Louys André began his mission work among the Mississagué, who were located on the banks of a river that empties into Lake Huron approximately 30 leagues from the Sault (Thwaites 1896-1901, 55:133-155).

After the Huron had been dispersed, the Haudenosaunee began to exert pressure on Ojibwa within their homeland to the north. While their numbers had been reduced through warfare, starvation, and European diseases, the coalescence of various Anishinaabek groups led to enhanced social and political strength (Thwaites 1896-1901, 52:133) and Sault Sainte Marie was a focal point for people who inhabited adjacent areas both to the east and to the northwest as well as for the Saulteaux, who considered it their home (Thwaites 1896-1901, 54:129-131). The Haudenosaunee established a series of settlements at strategic locations along the trade routes inland from the north shore of Lake Ontario. From east to west, these villages consisted of Ganneious, on Napanee Bay, an arm of the Bay of Quinte; Quinte, near the isthmus of the Quinte Peninsula; Ganaraske, at the mouth of the Ganaraska River; Quintio, at the mouth of the Trent River on the north shore of Rice Lake; Ganatsekwyagon (or Ganestiquiagon), near the mouth of the Rouge River; Teyaiagon, near the mouth of the Humber River; and Quinaouatoua, on the portage between the western end of Lake Ontario and the Grand River (Konrad 1981:135). Their locations near the mouths of the Humber and Rouge Rivers, two branches of the Toronto Carrying Place, strategically linked these settlements with the upper Great Lakes through Lake Simcoe. The inhabitants of these villages were agriculturalists, growing maize, pumpkins and squash, but their central roles were that of portage starting

points and trading centres for Iroquois travel to the upper Great Lakes for the annual beaver hunt (Konrad 1974; Williamson et al. 2008:50–52). Ganatsekwyagon, Teyaiagon, and Quinaouatoua were primarily Seneca; Ganaraske, Quinte and Quintio were likely Cayuga, and Ganneious was Oneida, but judging from accounts of Teyaiagon, all of the villages might have contained peoples from a number of the Iroquois constituencies (ASI 2013).

During the 1690s, some Ojibwa began moving south into extreme southern Ontario and soon replaced, the Haudenosaunee by force. By the first decade of the eighteenth century, the Michi Saagiig Nishnaabeg (Mississauga Nishnaabeg) had settled at the mouth of the Humber, near Fort Frontenac at the east end of Lake Ontario and the Niagara region and within decades were well established throughout southern Ontario. In 1736, the French estimated there were 60 men at Lake Saint Clair and 150 among small settlements at Quinte, the head of Lake Ontario, the Humber River, and Matchedash (Rogers 1978:761). This history is based almost entirely on oral tradition provided by Anishinaabek elders such as George Copway (Kahgegagahbowh), a Mississauga born in 1818 near Rice Lake who followed a traditional lifestyle until his family converted to Christianity (MacLeod 1992:197; Smith 2000). According to Copway, the objectives of campaigns against the Haudenosaunee were to create a safe trade route between the French and the Ojibwa, to regain the land abandoned by the Huron-Wendat. While various editions of Copway's book have these battles occurring in the mid-seventeenth century, common to all is a statement that the battles occurred around 40 years after the dispersal of the Huron-Wendat (Copway 1850:88; Copway 1851:91; Copway 1858:91). Various scholars agree with this timeline ranging from 1687, in conjunction with Denonville's attack on Seneca villages (Johnson 1986:48; Schmalz 1991:21–22) to around the mid- to late-1690s leading up to the Great Peace of 1701 (Schmalz 1977:7; Bowman 1975:20; Smith 1975:215; Tanner 1987:33; Von Gernet 2002:7–8).

Robert Paudash's 1904 account of Mississauga origins also relies on oral history, in this case from his father, who died at the age of 75 in 1893 and was the last hereditary chief of the Mississauga at Rice Lake. His account in turn came from his father Cheneebeesh, who died in 1869 at the age of 104 and was the last sachem or Head Chief of all the Mississaugas. He also relates a story of origin on the north shore of Lake Huron (Paudash 1905:7-8) and later, after the dispersal of the Huron-Wendat, carrying out coordinated attacks against the Haudenosaunee. Francis Assikinack, an Ojibwa of Manitoulin Island born in 1824, provides similar details on battles with the Haudenosaunee (Assikinack 1858:308–309).

Peace was achieved between the Haudenosaunee and the Anishinaabek Nations in August of 1701 when representatives of more than twenty Anishinaabek Nations assembled in Montreal to participate in peace negotiations (Johnston 2004:10). During these negotiations captives were exchanged and the Iroquois and Anishinaabek agreed to live together in peace. Peace between these nations was confirmed again at council held at Lake Superior when the Iroquois delivered a wampum belt to the Anishinaabek Nations.

From the beginning of the eighteenth century to the assertion of British sovereignty in 1763, there is no interruption to Anishinaabek control and use of southern Ontario. While hunting in the territory was shared, and subject to the permission of the various nations for access to their lands, its occupation was by Anishinaabek until the assertion of British sovereignty, the British thereafter negotiating treaties with them. Eventually, with British sovereignty, tribal designations changed (Smith 1975:221–222; Surtees 1985:20–21). According to Rogers (1978), by the twentieth century, the Department of Indian Affairs had divided the "Anishinaubag" into three different tribes, despite the fact that by the early eighteenth century, this large Algonquian-speaking group, who shared the same cultural background, "stretched over a thousand miles from the St. Lawrence River to the Lake of the Woods." With British land purchases and treaties, the bands at Beausoleil Island, Cape Croker, Christian Island, Georgina and Snake Islands, Rama, Sarnia, Saugeen, the Thames, and Walpole, became known as "Chippewa" while the bands at Alderville,

New Credit, Mud Lake, Rice Lake, and Scugog, became known as "Mississauga." The northern groups on Lakes Huron and Superior, who signed the Robinson Treaty in 1850, appeared and remained as "Ojibbewas" in historical documents.

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 throughout Ontario in the early nineteenth century, and entered into negotiations with various Nations for additional tracts of land as the need arose to facilitate European settlement.

Following the 1764 Niagara Peace Treaty and the follow-up treaties with Pontiac, the English colonial government considered the Mississaugas to be their allies since they had accepted the Covenant Chain. The English administrators followed the terms of the Royal Proclamation and insured that no settlements were made in the hunting grounds that had been reserved for their use (Johnston 1964; Lytwyn 2005). In 1784, under the terms of the "Between the Lakes Purchase" signed by Sir Frederick Haldimand and the Mississaugas, the Crown acquired over one million acres of land in-part spanning westward from near modern day Niagara-on-the-Lake along the north shore of Lake Ontario to modern day Burlington (Aboriginal Affairs and Northern Development Canada 2016).

The eighteenth century saw the ethnogenesis in Ontario of the Métis, when Métis people began to identify as a separate group, rather than as extensions of their typically maternal First Nations and paternal European ancestry (Métis National Council n.d.). Métis populations were predominantly located north and west of Lake Superior, however, communities were located throughout Ontario (MNC n.d.; Stone and Chaput 1978:607,608). During the early nineteenth century, many Métis families moved towards locales around southern Lake Huron and Georgian Bay, including Kincardine, Owen Sound, Penetanguishene, and Parry Sound (MNC n.d.). Recent decisions by the Supreme Court of Canada (Supreme Court of Canada 2003; Supreme Court of Canada 2016) have reaffirmed that Métis people have full rights as one of the Indigenous people of Canada under subsection 91(24) of the Constitution Act, 1867.

1.2.2 Euro-Canadian Land Use: Township Survey and Settlement

Historically, the Study Area is located in the Former Grantham Township, County of Welland, in part of Lots 19-20, Concession 7.

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 m 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).

Grantham Township

The land within Grantham Township was acquired by the British from the Mississaugas in 1784. The first township survey was undertaken in 1784, and the first legal settlers occupied their land holdings the same year. The township was named after a town in Lincolnshire, England. It may also have been named to honour Sir Thomas Robinson, 2nd Earl Grantham, who was British secretary of foreign affairs at the end of the American Revolutionary War in 1783. Grantham was initially settled by disbanded soldiers, mainly Butler's Rangers, following the end of the American Revolutionary War. In 1805, Boulton noted that Grantham was in a good situation with good quality soil, but "indifferently circumstanced for roads." There were no major battles fought in Grantham during the War of 1812, although several farms were plundered by forces from both sides. Grantham experienced greater economic prosperity following the construction of the Welland Canal. By the 1840s, the township was said to contain good land but that the farms were not well cultivated. The population was comprised mainly of Canadians, Americans, Irish, Scottish and English settlers (Boulton 1805:80; Smith 1846:71; Armstrong 1985:144; Rayburn 1997:141; Grantham Women's Institute 1940).

City of St. Catharines

St. Catharines was incorporated as a City in 1876. At that time the municipal limits were contained within Lots 13 to 20, Concessions 5, 6 and 7. Since amalgamation in 1960, it has occupied parts of Grantham and Louth Townships. St. Catharines was incorporated as a town in 1845, and as a City in 1876. First settled by Loyalists and disbanded soldiers from Butler's Rangers during the 1780s, the village was a small mercantile and milling centre which grew slowly until after the War of 1812. It was named St. Catharines, possibly after the first church, which was built here in 1796. New growth and prosperity came to the community during and after the construction of the Welland Canal in the late 1820s. The town benefited from the construction of the Great Western Railway in the mid-1850s. The town was one of the terminal points on the Underground Railway during the 1850s, and was once home to Harriet Tubman. Registered plans of subdivision for this village date from 1836-1867. During the 1870s, the town contained seven churches, three banks and insurance companies, several hotels, a commercial college, grammar and high schools, a convent, general hospital, four newspaper and printing houses, and several stores. Many industries were attracted here on account of the abundant water supply, the canal and the proximity of the railway. These included flour, saw and planing mills, foundries, machine shops, soap and candle factories, tanneries, woollen mills, breweries, a sewing machine factory and Shickluna's ship building yard. The town became a fashionable resort during the mid-nineteenth century on account of its celebrated mineral springs. In 1866, St. Catharines became the capital of Lincoln County at which time the county offices were relocated here from the town of Niagara. The population in 1873 was 7, 864 (Crossby 1873:287; Winearls 1991:796-798; Scott 1997:195-196; Rayburn 1997:300).

The Welland Canals

William Hamilton Merritt (1793-1861) came to the Niagara area with his United Empire Loyalist parents in 1796. The young Merritt farmed and entered into the mercantile trade around 1809, and served with

distinction during the War of 1812. He returned to his mercantile business after the war, but also began milling. His mill was located a short distance from the Study Area on the banks of Twelve Mile Creek (Old Welland Canal). Around 1818, Merritt conceived the idea of digging a new channel between the Welland River and the head waters of Twelve Mile Creek, which would ensure a steadier supply of water for the mills and other industries in St. Catharines. By 1824, this idea had evolved into plans for the construction of the First Welland Canal. This enterprise not only supplied a steady source of hydraulic power for local businesses, but also created a navigational route which linked Lake Ontario to Lake Erie, thus providing ships access to inland markets throughout the rest of the Great Lakes region for the first time.

Railways

The Great Western Railway (GWR) was originally incorporated in 1834 as the London and Gore Railroad Co. and changed its name to the GWR in 1853. It received considerable promotion by Allan Napier MacNab, Isaac and Peter Buchanan, R.W. Harris and John Young. Aided by government guarantees and supported by foreign American and British investment, the GWR opened its mainline (Windsor-London-Hamilton-Niagara Falls) in 1854. By 1882, it was operating throughout southwestern Ontario and even into Michigan. In 1882 it merged with the Grand Trunk Railway (GTR) in an attempt to successfully compete with rival American railroads for American through-traffic between Michigan and New York states (Baskerville 2015).

1.2.3 Historical Map Review

The 1852 *Map of the Town of St.* Catharines, the 1862 *Map of the Counties of Lincoln and Welland*, and the 1876 *Illustrated Historical Atlas of the Counties of Lincoln and Welland*, Township of Grantham page, (Tremaine and Tremaine 1862; Page 1876) were examined to determine the presence of historic features within the Study Area during the nineteenth century (Table 1; Figures 2-4).

It should be noted, however, that not all features of interest were mapped systematically in the Ontario series of historical atlases, given that they were financed by subscription, and subscribers were given preference with regard to the level of detail provided on the maps. Moreover, not every feature of interest would have been within the scope of the atlases.

In addition, the use of historical map sources to reconstruct/predict the location of former features within the modern landscape generally proceeds by using common reference points between the various sources. These sources are then geo-referenced in order to provide the most accurate determination of the location of any property on historic mapping sources. The results of such exercises are often imprecise or even contradictory, as there are numerous potential sources of error inherent in such a process, including the vagaries of map production (both past and present), the need to resolve differences of scale and resolution, and distortions introduced by reproduction of the sources. To a large degree, the significance of such margins of error is dependent on the size of the feature one is attempting to plot, the constancy of reference points, the distances between them, and the consistency with which both they and the target feature are depicted on the period mapping.

Table 1: Nineteenth-century property owner(s) and historical features(s) within or adjacent to the Study Area

		1862		*1876*	
Con #	**Lot #**	**Property Owner(s)**	**Historical Feature(s)**	**Property Owner(s)**	**Historical Feature(s)**
7	19	Jacob Hainer J. C. Rykert	Hotel GWR, Toll Gate	None	GWR
	20	G.W.R.R. Co. J. C. Rykert	GWR None	None	GWR

The maps indicate that St. Paul Street West and Pelham Road were historically surveyed and that the GWR intersected St. Paul Street West in its present alignment within the Study Area. No structures are illustrated within the Study Area on either map. According to the 1862 map, a hotel adjacent to the Study Area is illustrated on the north side of the intersection of St. Paul Street West and Pelham Road. A toll gate is illustrated opposite the hotel on Pelham Street on the north side of the GWR. The 1862 map illustrates that lands within the northwestern part of Lot 20 were owned by the railroad. By 1876, the Study Area was within the City of St. Catharines town lots, and Merigold, Leeper and Hamilton Streets had been surveyed.

1.2.4 Twentieth-Century Mapping Review

The 1907 National Topographic System (NTS) Niagara Sheet, the 1932 Fire Insurance Plan of St. Catharines, and the 1973 Port Dalhousie Sheet , as well as the 1921 and 1951 aerial photographs of St. Catharines (Brock University 20181921 H20-41; 1954 4306-233), were examined to determine the extent and nature of development and land uses within the Study Area (Figures 5-7).

The 1907 map illustrates St. Paul Street as a metalled road with two structures adjacent to the Study Area, one on the west side of Leeper Street and one south of Permilla Street. The railway corridor is an at grade crossing over both St. Paul Street West and Leeper/Ambrose Street, and is shown within an embankment constructed east of St. Paul Street West. The 1932 plan illustrates the steel bridge carrying St. Paul Street over the railway and embankments. The extant houses are shown at 2 Shickluna and 177 St. Paul Street West. The 1973 map shows the developed urban neighbourhoods of Chelsea Green and Hainer. A school and church are shown adjacent to the Study Area. The railway is shown within an embankment under the St. Paul Street bridge.

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 MTCS through “Ontario’s Past Portal”; published and unpublished documentary sources; and the files of ASI.

1.3.1 Current Land Use and Field Conditions

A review of available Google satellite imagery shows that the Study Area has remained relatively unchanged since 2003.

A Stage 1 property inspection was conducted on December 19, 2018 that noted the Study Area is located along St. Paul Street West between northeast of Lloyd Street and northeast of the intersection with St. Paul Crescent, as well as the railway corridor from St. Catharines VIA Rail Station and west of Pelham Road. The Study Area also includes part of Permilla, Ambrose, Great Western, Leeper, Shickluna, and Merigold Streets. These streets have residential and commercial development, as well as an open grassed park with baseball diamond.

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 and Warner 1990: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).

The Study Area is on clay plains within the Iroquois Plain physiographic region of southern Ontario (Figure 8). This is a lowland region bordering Lake Ontario. This region is characteristically flat, and formed by lacustrine deposits laid down by the inundation of Lake Iroquois, a body of water that existed during the late Pleistocene. This region extends from the Trent River, around the western part of Lake Ontario, to the Niagara River, spanning a distance of 300 km (Chapman and Putnam 1984:190). The old shorelines of Lake Iroquois include cliffs, bars, beaches and boulder pavements. The old sandbars in this region are good aquifers that supply water to farms and villages. The gravel bars are quarried for road and

building material, while the clays of the old lake bed have been used for the manufacture of bricks (Chapman and Putnam 1984:196). The Study Area is adjacent to the Niagara Escarpment, by far one of the most prominent features in southern Ontario, and extends from the Niagara River to the northern tip of the Bruce Peninsula, continuing through the Manitoulin Islands (Chapman and Putnam 1984:114–122). Vertical cliffs along the brow mostly outline the edge of the dolostone of the Lockport and Amabel Formations, while the slopes below are carved in red shale. Flanked by landscapes of glacial origin, the rock-hewn topography stands in striking contrast, and its steep-sided valleys are strongly suggestive of non-glacial regions. From Queenston, on the Niagara River, westward to Ancaster, the escarpment is a simple topographic break separating the two levels of the Niagara Peninsula. The Niagara Escarpment is a designated UNESCO World Biosphere Reserve.

Figure 9 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 (Ontario Geological Survey 2010). Natural soils in the Study Area are not known (Kingston and Presant 1989). Drainage is illustrated in Figure 10.

The Study Area is within the Lower Twelve Mile Creek subwatershed. The entire Twelve Mile Creek Watershed drains approximately 207 square kilometres through the urban areas of Niagara Falls, Pelham, Thorold, St. Catharines, and Welland, as well as agricultural lands of the eastern Niagara Peninsula. The Lower Twelve Mile Creek flows through St. Catharines and the Martindale Barnedale Marsh Complex and Martindale Pond, draining into Lake Ontario at Port Dalhousie (Niagara Peninsula Conservation Authority 2012).

1.3.3 Previous Archaeological Research

In Ontario, information concerning archaeological sites is stored in the Ontario Archaeological Sites Database (OASD) maintained by the MTCS. 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 km east to west, and approximately 18.5 km 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 *AgGt.*

According to the OASD, three previously registered archaeological sites are located within one kilometre of the Study Area, none of which are within 50 metres (Ministry of Tourism, Culture and Sport 2018). A summary of the sites is provided below.

Table 2: List of previously registered sites within one kilometre of the Study Area

Borden #	Site Name	Cultural Affiliation	Site Type	Researcher
AgGt-250	Oak Hill Tunnels	Euro-Canadian	Domestic- tunnel	ASI 2015, 2017
AgGt-251	31 Duke Street & 18-20 Wellington Street	Euro-Canadian	Residential	TMHC 2018
AhGs-47	Haynes Farm	Euro-Canadian	Farmstead, cemetery	Jouppien 2017

According to the background research, one previous report details fieldwork within 50 m of the Study Area.

ASI (2010) conducted a Stage 1 archaeological assessment as part of the GO Service Extension to the Niagara Peninsula. A total of eight alternative station locations, four alternative train service centre locations and three combined alternative/train service centre locations were considered for this project, including the existing VIA Rail St. Catharines station (LA3 in the report) within the current Study Area. The portion of the site south of the rail ROW was used for industrial/commercial storage, and that both the north and south parcels had been previously graded and does not exhibit archaeological potential, and no further archaeological assessment was required.

2.0 FIELD METHODS: PROPERTY INSPECTION

A Stage 1 property inspection must adhere to the S & G, Section 1.2, Standards 1-6, which are discussed below. The entire property and its periphery must be inspected. The inspection may be either systematic or random. Coverage must be sufficient to identify the presence or absence of any features of archaeological potential. The inspection must be conducted when weather conditions permit good visibility of land features. Natural landforms and watercourses are to be confirmed if previously identified. Additional features such as elevated topography, relic water channels, glacial shorelines, well-drained soils within heavy soils and slightly elevated areas within low and wet areas should be identified and documented, if present. Features affecting assessment strategies should be identified and documented such as woodlots, bogs or other permanently wet areas, areas of steeper grade than indicated on topographic mapping, areas of overgrown vegetation, areas of heavy soil, and recent land disturbance such as grading, fill deposits and vegetation clearing. The inspection should also identify and document structures and built features that will affect assessment strategies, such as heritage structures or landscapes, cairns, monuments or plaques, and cemeteries.

The Stage 1 archaeological assessment property inspection was conducted under the field direction of Jennifer Ley (R376) of ASI, on December 19, 2018, in order to gain first-hand knowledge of the geography, topography, and current conditions and to evaluate and map archaeological potential of the Study Area. It was a visual inspection only and did not include excavation or collection of archaeological resources. Fieldwork was only conducted when weather conditions were deemed suitable and seasonally appropriate, per S & G Section 1.2., Standard 2. Previously identified features of archaeological potential were examined; additional features of archaeological potential not visible on mapping were identified and documented as well as any features that will affect assessment strategies. Field observations are compiled onto the existing conditions of the Study Area in Section 7.0 (Figure 13) and associated photographic plates are presented in Section 8.0 (Plates 1-24).

3.0 ANALYSIS AND CONCLUSIONS

The historical and archaeological contexts have been analyzed to help determine the archaeological potential of the Study Area. These data are presented below in Section 3.1. Results of the analysis of the Study Area property inspection are presented in Section 3.2.

3.1 Analysis of Archaeological Potential

The S & G, Section 1.3.1, lists criteria that are indicative of archaeological potential. The Study Area meets the following criteria indicative of archaeological potential:

- Previously identified archaeological sites (Table 2);
- Water sources: primary, secondary, or past water source (Twelve Mile Creek);
- Early historic transportation routes (GWR, St. Paul St. W., Pelham Rd., Merigold St., Leeper St., and Hamilton St.); and
- Proximity to early settlements (City of St. Catharines)

According to the S & G, Section 1.4 Standard 1e, no areas within a property containing locations listed or designated by a municipality can be recommended for exemption from further assessment unless the area can be documented as disturbed. The Municipal Heritage Register was consulted and no properties within the Study Area are Listed or Designated under the Ontario Heritage Act, however the GWR train station at 5 Great Western Street, built in 1916, is designated under the Heritage Railway Stations Protection Act and is listed on the St. Catharines Register of Non-Designated Cultural Heritage Properties for its mixture of Arts & Crafts and Spanish Colonial architectural influences.

These criteria are indicative of potential for the identification of Indigenous and Euro-Canadian archaeological resources, depending on soil conditions and the degree to which soils have been subject to deep disturbance.

3.2 Analysis of Property Inspection Results

The property inspection determined that parts of the Study Area exhibit archaeological potential (Plates 1, 2, 7, 8, 13-15; Figure 13: areas highlighted in green). If impacted, these areas will require Stage 2 archaeological assessment prior to any construction activities. According to the S & G Section 2.1.2, test pit survey is required on terrain where ploughing is not viable, such as wooded areas, properties where existing landscaping or infrastructure would be damaged, overgrown farmland with heavy brush or rocky pasture, and narrow linear corridors up to 10 metres wide.

Parts of the Study Area has been previously assessed (ASI 2010) and do not require further survey (Figure 13: areas highlighted in red).

The remainder of the Study Area has been subjected to deep soil disturbance events associated with construction of the road and rail ROWs, installation of utilities, and twentieth and twenty-first century residential and commercial construction. According to the S & G Section 1.3.2 do not retain archaeological potential (Plates 1-24; Figure 8: areas highlighted in yellow). These areas do not require further survey.

3.3 Conclusions

The Stage 1 background study determined that three previously registered archaeological sites are located within one kilometre of the Study Area. The property inspection determined that parts of the Study Area exhibit archaeological potential and, if impacted, will require Stage 2 assessment, prior to any construction activities.

4.0 RECOMMENDATIONS

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

1. The Study Area exhibits archaeological potential. If impacted, these lands require Stage 2 archaeological assessment by test pit survey at five metre intervals, where appropriate, prior to any construction activities;

2. The remainder of the Study Area does not retain archaeological potential on account of being previously assessed or subject to deep and extensive disturbance. These lands do not require further archaeological assessment; and,

3. Should the proposed work extend beyond the current Study Area, further Stage 1 archaeological assessment should be conducted to determine the archaeological potential of the surrounding lands.

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 Cultural Programs Unit of the MTCS should be immediately notified.

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

ASI also advises compliance with the following legislation:

- This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, RSO 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological 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 Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

- It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological 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 *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

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7.0 MAPS

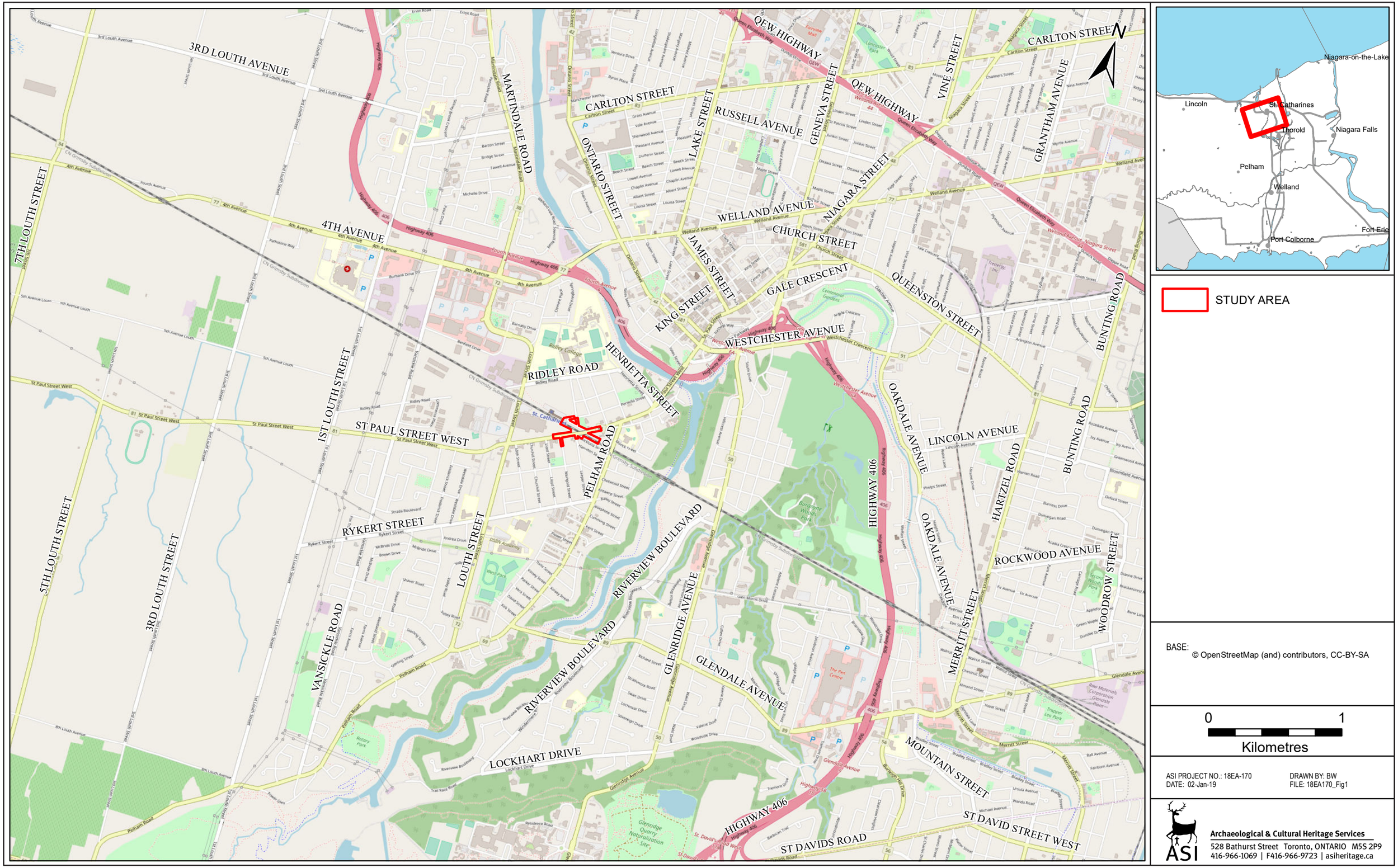

Figure 1: St. Paul Street West CNR Bridge Replacement - Location of the Study Area

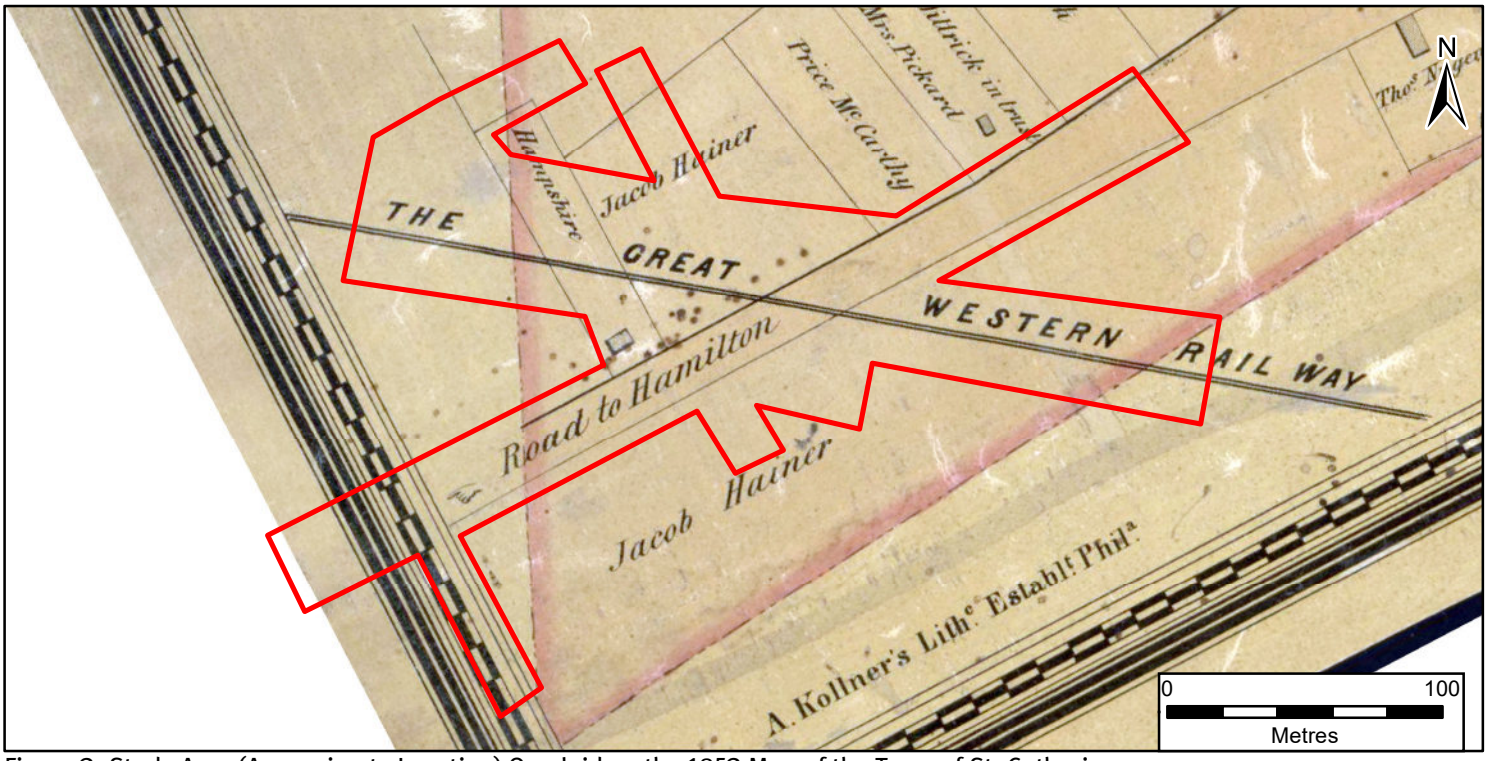

Figure 2: Study Area (Approximate Location) Overlaid on the 1852 Map of the Town of St. Catharines

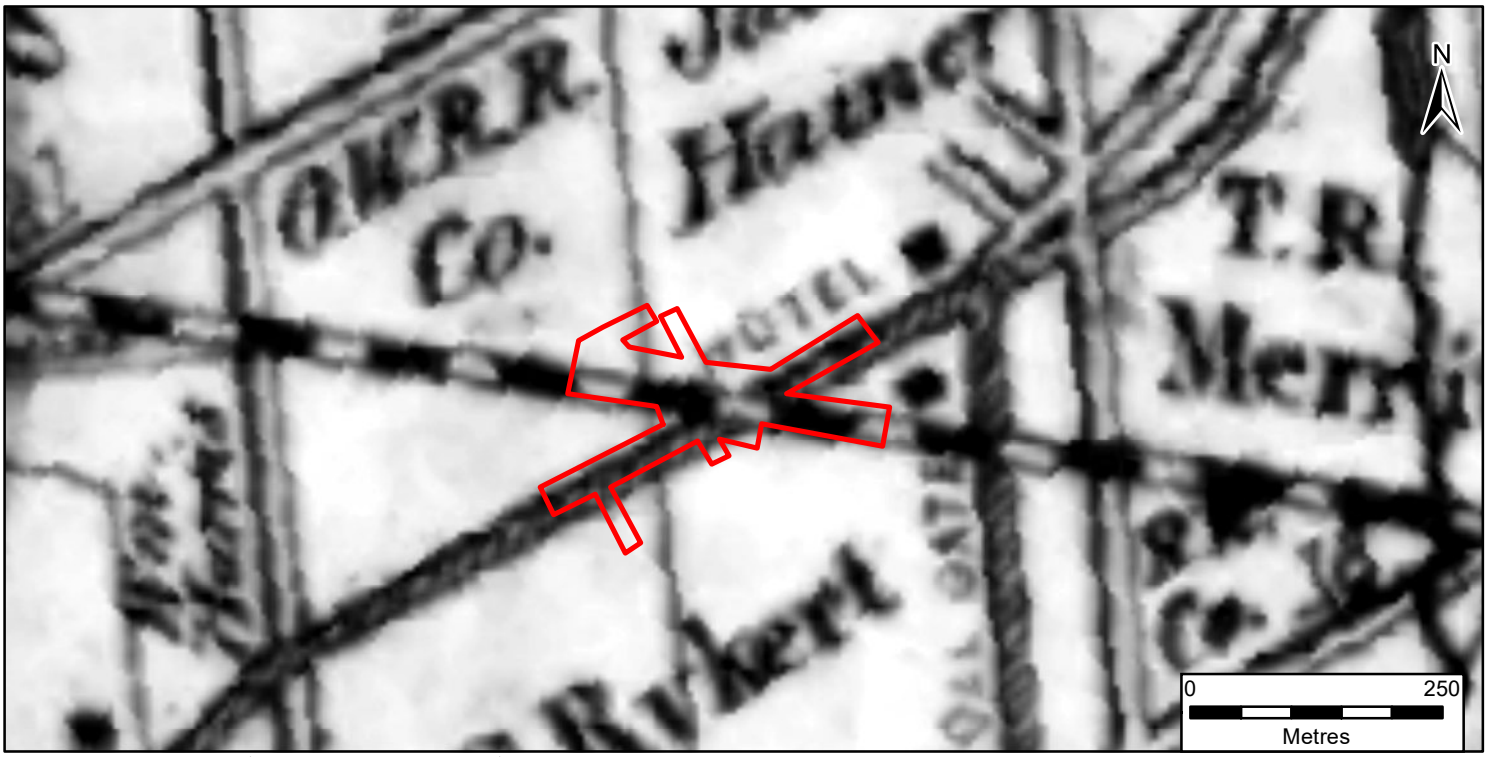

Figure 3: Study Area (Approximate Location) Overlaid on the 1862 Map of the Counties of Lincoln and Welland

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STUDY AREA

Base:
1852 Map of the Town of St. Catharines
1862 Map of the Counties of Lincoln and Welland

ASI PROJECT NO.: 18EA-170
DATE: 1/11/2019

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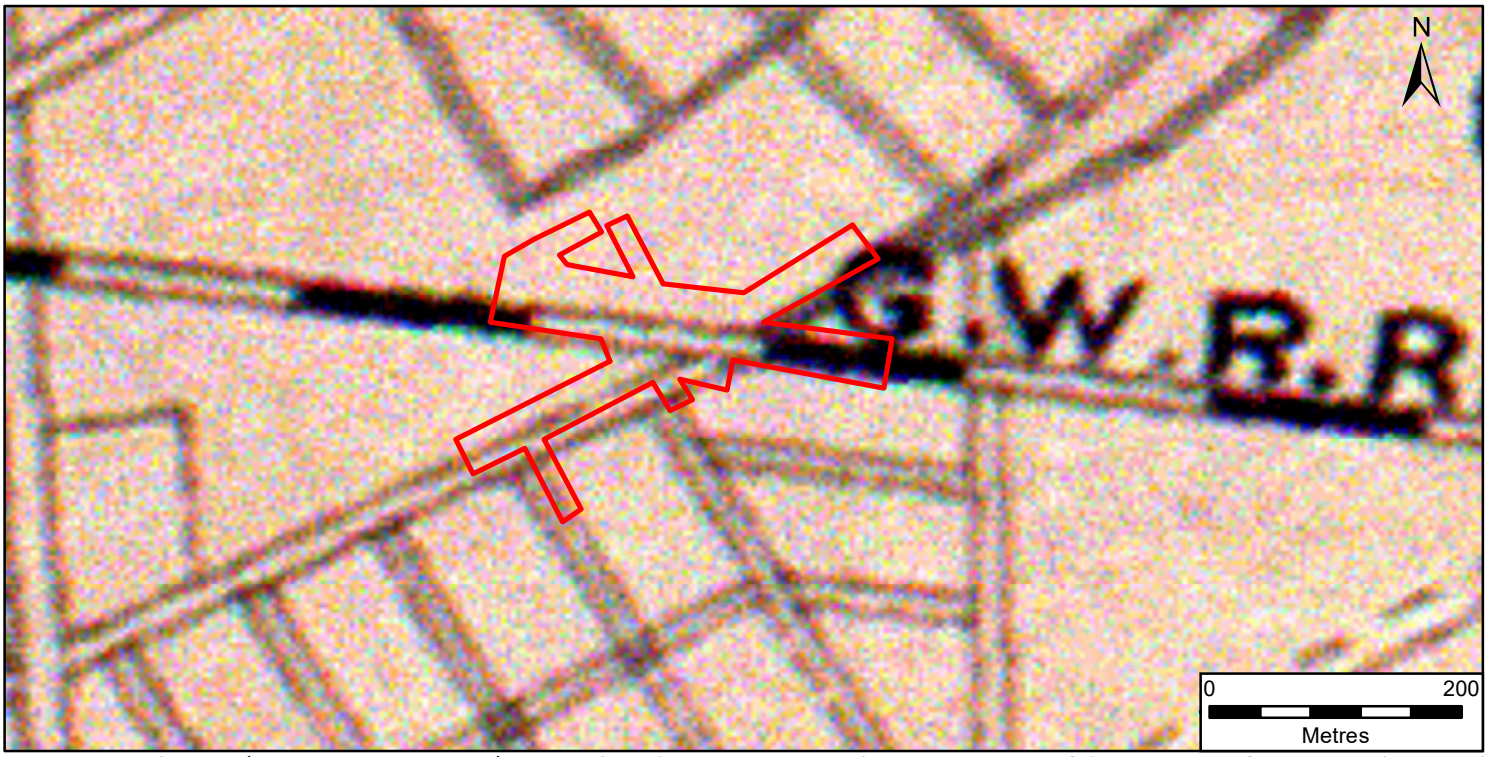

Figure 4: Study Area (Approximate Location) Overlaid on the 1876 Illustrated Historical Atlas of the Counties of Lincoln and Welland

Figure 5: Study Area (Approximate Location) Overlaid on the 1907 NTS Niagara Sheet

ASI Archaeological & Cultural Heritage Services 528 Bathurst Street Toronto, ONTARIO M5S 2P9 416-966-1069 | F416-966-9723 | asiheritage.ca	STUDY AREA	Base: 1876 Illustrated Historical Atlas of the Counties of Lincoln and Welland 1907 NTS Niagara Sheet	ASI PROJECT NO.: 18EA-170 DATE: 1/8/2019 DRAWN BY: BW/JF FILE: 18EA170_hist_Fig4_5

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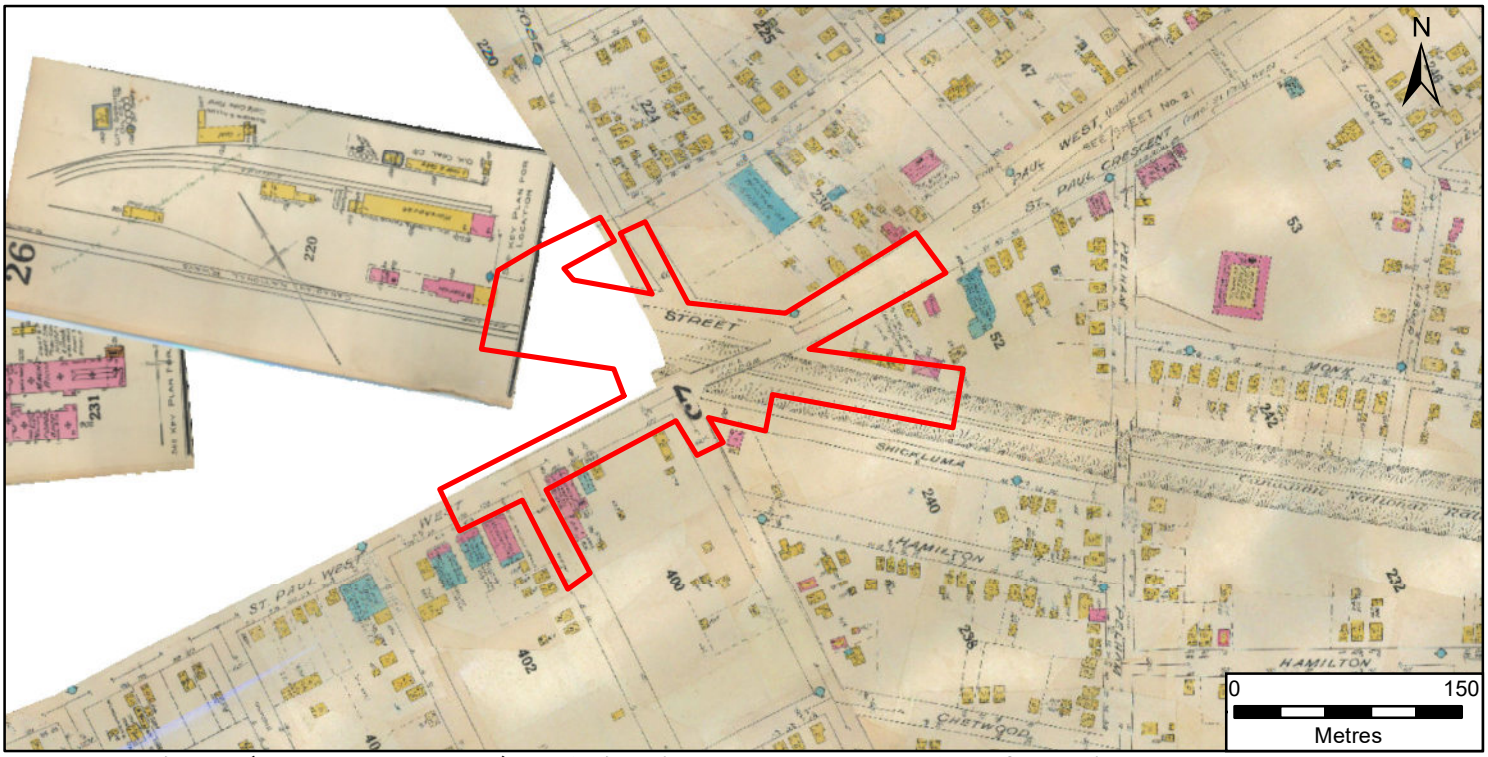

Figure 6: Study Area (Approximate Location) Overlaid on the 1932 Fire Insurance Plans of St. Catharines

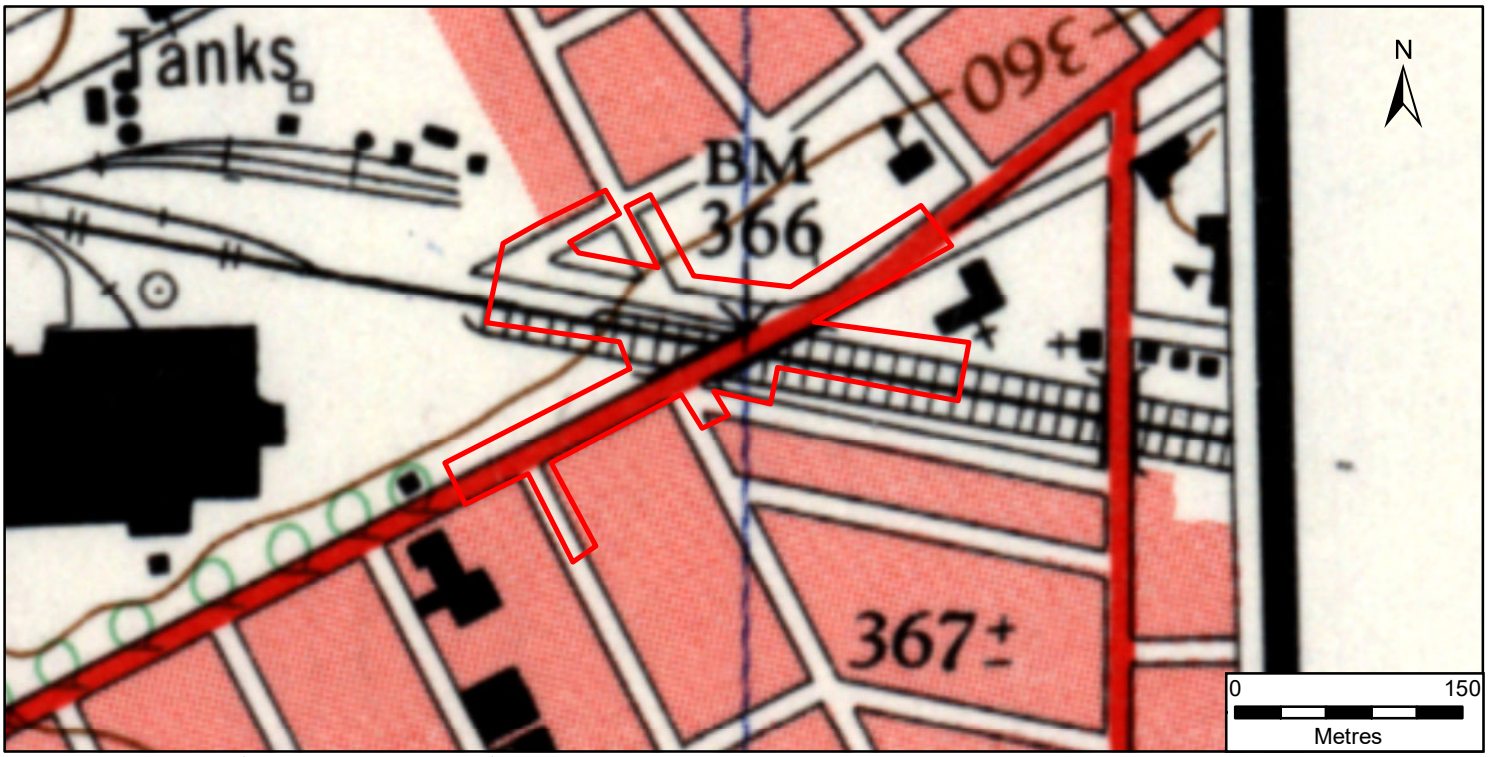

Figure 7: Study Area (Approximate Location) Overlaid on the 1973 NTS Port Dalhousie Sheet

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STUDY AREA

Base:
1932 Fire Insurance Plans
of St. Catharines
1973 NTS Port Dalhousie Sheet

ASI PROJECT NO.: 18EA-170
DATE: 1/8/2019

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Figure 8: Study Area (Approximate Location) Overlaid on the 1921 Aerial Photograph of St. Catharines

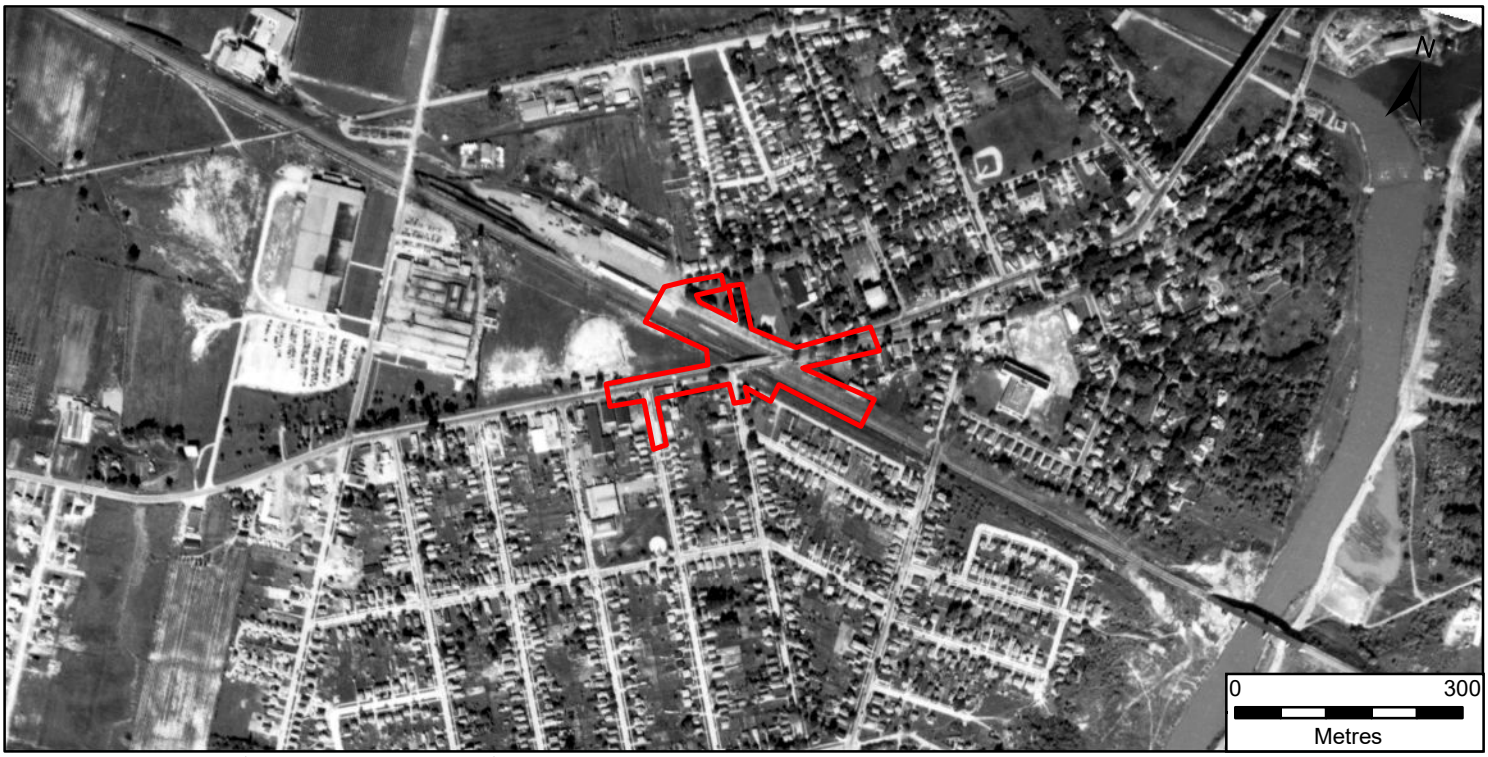

Figure 9: Study Area (Approximate Location) Overlaid on the 1954 Aerial Photograph of St. Catharines

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STUDY AREA

Base:
1921 Aerial Photography
1954 Aerial Photography
St. Catharines Sheet

ASI PROJECT NO.: 18EA-170
DATE: 02-Jan-19

DRAWN BY: BW
FILE: 18EA170_Fig6_7

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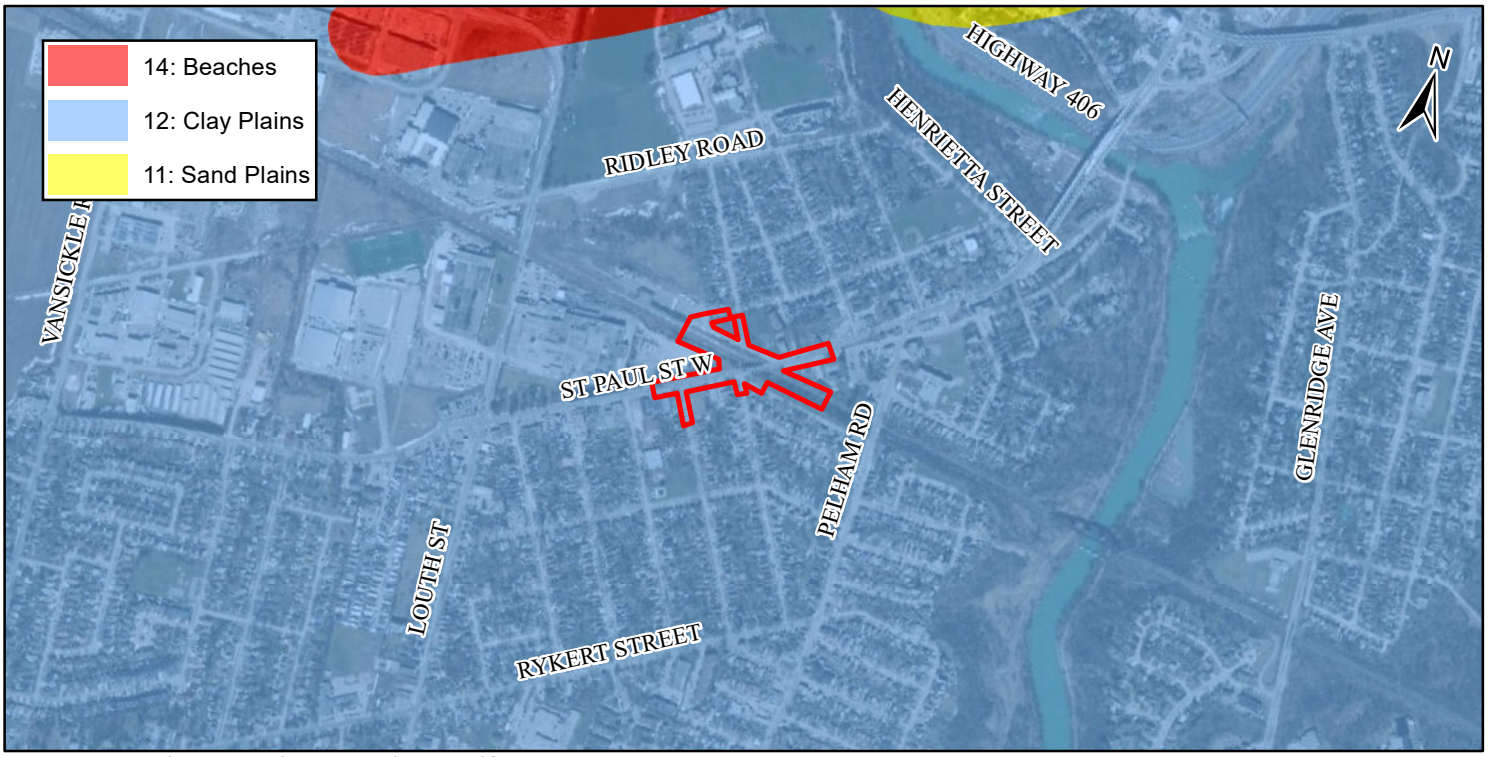

Figure 10: Study Area - Physiographic Landforms

Figure 11: Study Area - Surficial Geology

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STUDY AREA

Base:
Ontario Geological Survey,
Ministry of Northern Development and Mines,
© Queen's Printer for Ontario, 2003.

0 500
Metres

ASI PROJECT NO.: 18EA-170
DATE: 1/3/2019
DRAWN BY: JF
FILE: 18EA170_Fig8_9_geology

Path: X:\2018 Projects\EA\18EA-170 St. Paul St CNR Bridge\View\18EA170_geo.mxd

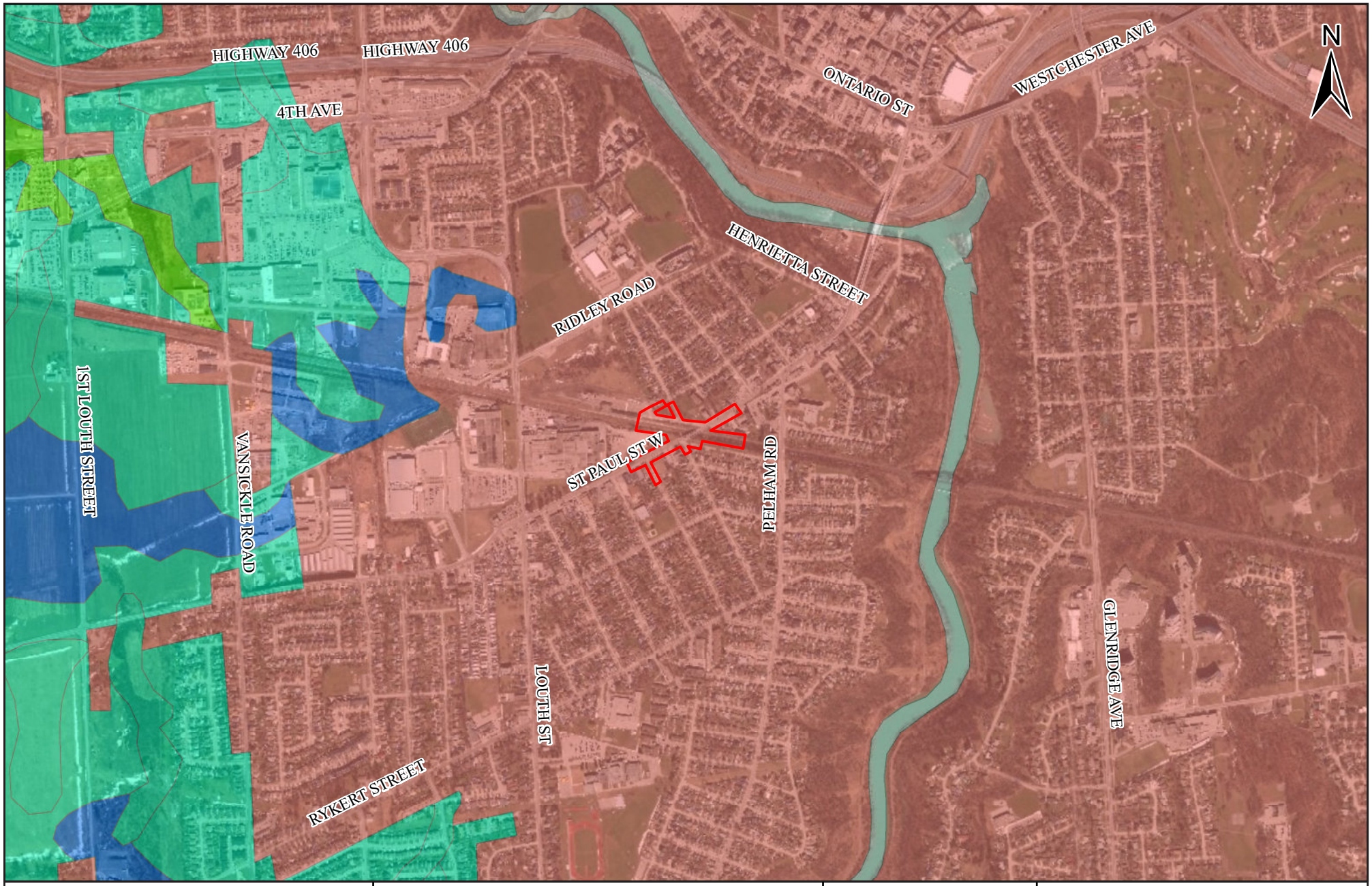

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Figure 12: Study Area - Soil Drainage

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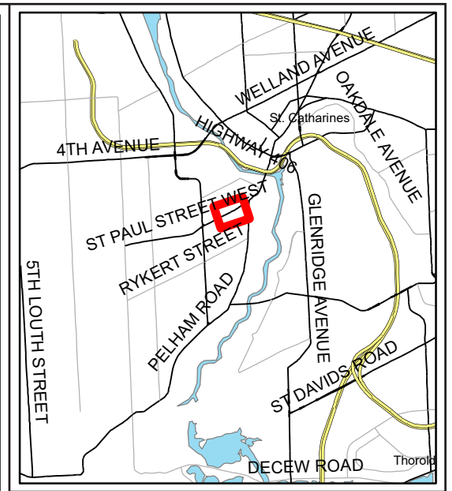

PHOTO LOCATION AND DIRECTION

STUDY

DISTURBED - NO POTENTIAL

PREVIOUSLY ASSESSED - NO POTENTIAL

POTENTIAL - ARCHAEOLOGICAL ASSESSMENT REQUIRED

PROPERTY PARCEL

BASE:
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS,

0 50
Meters

ASI PROJECT NO.: 18EA-170
DATE: 1/11/2019

DRAWN BY: JF
FILE: 18EA170_Fig13_stage1_v2

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Figure 13: St. Paul Street West CNR Bridge Replacement – Results of the Property Inspection

8.0 IMAGES

Plate 1: Southwest view of Permilla St. towards VIA Rail Station; Area south of disturbed road requires Stage 2 survey

Plate 2: Southeast view of Ambrose St.; Area beyond of disturbed road requires Stage 2 survey

Plate 3: Northeast view of Permilla St. at Great Western St.; North side of the road is disturbed, no potential

Plate 4: Northwest view of Great Western St.; Area is disturbed, no potential

Plate 5: Northwest view of Great Western St. at St. Paul St. W.; Area is disturbed, no potential

Plate 6: Northeast view of St. Paul St. W.; Area is disturbed, no potential

Plate 7: Northeast view of St. Paul St. W.; Area north of disturbed ROW requires Stage 2 survey

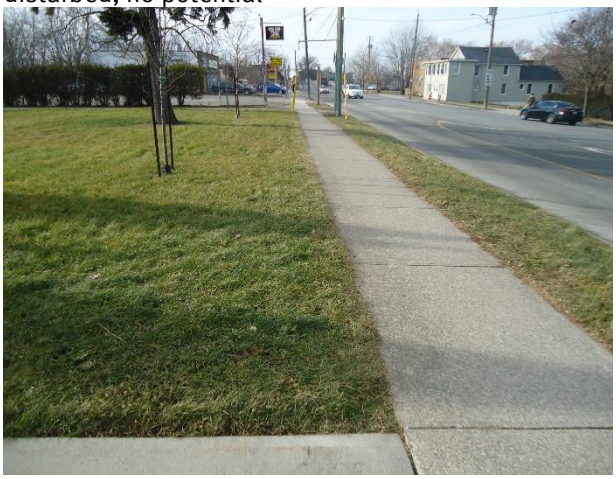

Plate 8: Southwest view of St. Paul St. W.; Area south of disturbed ROW requires Stage 2 survey

Plate 9: Southwest view of St. Paul St. W. bridge; Area is disturbed, no potential

Plate 10: Southeast view of railway corridor; Area is disturbed, no potential

Plate 11: Northeast view of St. Paul St. W. bridge; Area is disturbed, no potential

Plate 12: Northwest view of Shickluna St.; Area is disturbed, no potential

Plate 13: Northwest view of Leeper St.; Area northwest of disturbed ROW and driveway requires Stage 2 survey

Plate 14: Southeast view of Shickluna St.; Area beyond disturbed ROW and driveway requires Stage 2 survey

Plate 15: Southwest view of St. Paul St. W.; Area is disturbed, no potential

Plate 16: Northwest view of railway corridor; Area is disturbed, no potential

Plate 17: Southeast view of St. Paul St. W.; Area is disturbed, no potential

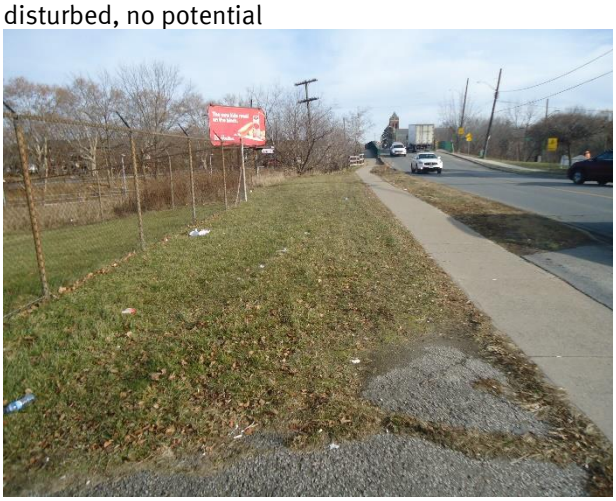

Plate 18: Northeast view of St. Paul St. W.; Area is disturbed, and previously assessed, no potential

Plate 19: Southwest view of St. Paul St. W.; Area is disturbed, and previously assessed, no potential

Plate 20: Southeast view of Merigold St.; Area is disturbed, no potential

Plate 21: Northeast view of St. Paul St. W. at Merigold St.; Area is disturbed, no potential

Plate 22: Northwest view of Merigold St.; Area is disturbed, no potential

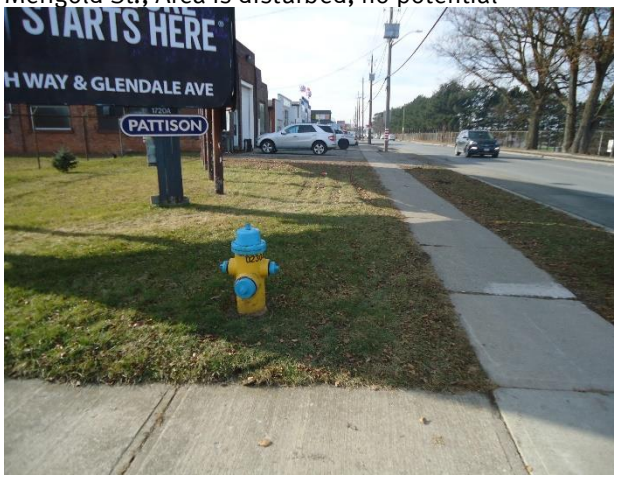

Plate 23: Southwest view of St. Paul St. W.; Area is disturbed, no potential

Plate 24: Northeast view of St. Paul St. W.; Area is disturbed, and previously assessed, no potential