Stage 1-2 Archaeological Assessment
Vacant Lot, Quaker Road

Part of Lot 235,
Geographic Township of Thorold,
Historical County of Welland, now the City of Welland in the
Regional Municipality of Niagara, Ontario

Submitted to:
ePrime Construction Management
4999 Victoria Avenue
Niagara Falls, ON L2E 4C9

and

Ontario's Ministry of Heritage, Sport, Tourism and Culture Industries

Submitted by:

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PIF Number: P389-0582-2021
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ORIGINAL REPORT

November 17, 2022

Executive Summary

Detritus Consulting Ltd. ('Detritus') was retained by ePrime Construction Management ('the Proponent') to conduct a Stage 1-2 archaeological assessment on Lot 235 within the Geographic Township of Thorold and historical County of Welland, now the City of Welland within the Regional Municipality of Niagara, Ontario (Figure 1). This investigation was conducted in advance of the construction of a proposed housing development on a vacant lot (the 'Study Area') located on the northern edge of the Town of Welland, to the east of Pelham Corners (Figure 5).

An archaeological assessment was triggered by the Provincial Policy Statement ('PPS') that is informed by the *Planning Act* (Government of Ontario 1990a), which states that decisions affecting planning matters must be consistent with the policies outlined in the larger *Ontario Heritage Act* (Government of Ontario 1990b). According to Section 2.6.2 of the PPS, "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet this condition, a Stage 1-2 assessment was conducted as part of the Site Plan application under archaeological consulting license P389 issued to Dr. Walter McCall by the Ministry of Heritage, Sport, Tourism and Culture Industries ('MHSTCI') and adheres to the archaeological license report requirements under subsection 65 (1) of the *Ontario Heritage Act* (Government of Ontario 1990b) and the MHSTCI's *Standards and Guidelines for Consultant Archaeologists* ('*Standards and Guidelines*'; Government of Ontario 2011).

The Study Area is a rectangular property measuring approximately 7.1 hectares ('ha') and fronting the southern side of Quaker Road between the residential properties at 555 and 607 Quaker Road. At the time of assessment, most of the property comprised agricultural land bounded by narrow swathes of dense woodlot along its eastern and western sides (Figure 5). The eastern strip extends around the southeastern corner of the Study Area. The remainder of the southern end was occupied by manicured grass. No structures were present within the Study Area.

The Study Area was part of a much larger parcel that was subject to a previous Stage 1 assessment, conducted by Archaeological Services Inc. ('ASI') in 2018 (ASI 2018; PIF# P449-0207-2018). The Stage 1 investigation area measured 189ha and was generally bounded by Steve Bauer Trail to the west; various commercial and industrial lots fronting Niagara Street to the east; residential developments, agricultural land, and woodlot to the north; and the campus of Niagara College to the south (Figure 4). Based on the results of ASI's assessment, approximately 99% (187.4ha) of the Stage 1 assessment are exhibited archaeological potential. This potential extended across approximately 80% of the current Study Area, excluding much of the southeastern quadrant.

Although portions of the Stage 1 assessment area, including a section of the current Study Area, did not exhibit archaeological potential, ASI recommended that any future developments within the Study Area be preceded by a Stage 2 field assessment (ASI 2018).

The Stage 2 field assessment was conducted on May 9, 2022. The manicured grass and wooded areas were subject to a test pit survey at five-mares ('m') intervals. No archaeological material was encountered. The agricultural land was subject to a typical pedestrian survey conducted a 5m intervals. This investigation resulted in the documentation of a single Euro-Canadian site, registered with the MHSTCI as H1 (AgGt-296).

The Stage 2 assessment of H1 (AgGt-296) resulted in the documentation of 233 primarily Euro-Canadian artifacts spanning an area of 37m east to west by 28m north to south in the northeastern corner of the Study Area. A single pre-contact Aboriginal bifacial tool manufactured from Onondaga chert was also recovered. The Euro-Canadian artifacts included almost exclusively ceramics and household artifacts, which comprised 94.8% of the Stage 2 assemblage.

The ceramic assemblage was dominated by sherds of refined white earthenware ('RWE') (82.17%, n=129), most of which (n=114) were undecorated. The decorated pieces featured transfer printed designs in green (n=9), blue (n=4) and black (n=1). Whereas blue and black transfer printed designs were common throughout the 19th century from 1830 onwards, green was common

between 1830 and 1845, and again after 1890. The remainder of the ceramic assemblage included undecorated sherds of stoneware (n=17) and ironstone (n=11), suggestive of a late 19th century occupation.

A late 19th century occupation is supported also by the household assemblage, which comprised almost exclusively glassware. Most of the glassware included bottle fragments (n=59), almost two thirds of which were clear and possibly machine manufactured in the late 19th or 20th century. Among the tinted bottle pieces are two bottle finishes, including an amethyst prescription finish and an aqua brandy finish. Both were common from the 1870s to the 1920s. Two pieces of milk glass and a mason jar fragment, also common during this same interval, rounded out the glassware. An unknown animal bone and a pig's tooth rounded out the household artifacts.

The remainder of the Euro-Canadian assemblage includes five cut nails, three red brick fragments, two pieces of window glass measuring greater than 1.6 millimetres in thickness, and a single Prosser button, all of which are indicative of a middle to late 19th century occupation.

Considering the available evidence, H1 (AgGt-296) has been identified as a middle to late 19th century domestic refuse deposit associated with the occupation of G. A. Swayze, who occupied Lot 235 in 1876 according to *The Illustrated Historical Atlas of the Counties of Lincoln and Welland* (Page & Co. 1876).

The single biface that was also recovered from H1 (AgGt-296) is not considered to represent a pre-contact occupation of the site. Rather, this isolated lithic artifact further documents the longstanding occupation of the region as a whole prior to the arrival of European settlers, as evidenced by the three sites producing pre-contact Aboriginal artifacts registered within one kilometre of the Study Area.

Based on the results of the Stage 2 field assessment, and the documentation of at least 20 artifacts that date the period of use at the site to before 1900, H1 (AgGt-296) meets the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011), and retains cultural heritage value or interest ('CHVI'). **A Stage 3 archaeological site-specific assessment is recommended for H1 (AgGt-296)**.

The Stage 3 assessments of H1 (AgGt-296) will be conducted according to Section 3.2 of the *Standards and Guidelines* (Government of Ontario 2011). Typically, a Stage 3 assessment for a site documented during a pedestrian survey begins with an intensive controlled surface pickup ('CSP') across the Stage 2 limits, conducted as per Section 3.2.1 of the *Standards and Guidelines* (Government of Ontario 2011). The Stage 2 pedestrian survey at H1 (AgGt-296), however, consisted of an intensive surface collection across the entire limits of the site; all artifacts were individually mapped and collected for laboratory analysis. Thus, the conditions for a Stage 3 CSP at H1 (AgGt-296) were met during the Stage 2 assessment. The Stage 3 assessment of the site will consist of test unit excavation only, conducted as per Section 3.2.2 of the *Standards and Guidelines* (Government of Ontario 2011).

Because it is not yet evident if the level of CHVI at H1 (AgGt-296) will result in a recommendation to proceed to Stage 4, the Stage 3 assessment at the site will consist of the hand excavation of 1m square test units across its Stage 2 limits, as per Table 3.1, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011). Additional 1m test units, amounting to 20% of the grid total, will be placed in areas of interest within each site extent as per Table 3.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011). All excavated soil will be screened through six-millimetre mesh; all recovered artifacts will be recorded by their corresponding site and grid unit designation and collected for laboratory analysis. If a subsurface cultural feature is encountered, the plan of the exposed feature will be recorded and geotextile fabric will be placed over the unit before backfilling the unit.

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

Table of Contents

Project Personnel

Project Manager:	Garth Grimes, P017
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Acknowledgments

Generous contributions by Stephanie Fisher of ePrime Construction Management made this report possible.

1.0 Project Context

1.1 Development Context

Detritus Consulting Ltd. ('Detritus') was retained by ePrime Construction Management ('the Proponent') to conduct a Stage 1-2 archaeological assessment on Lot 235 within the Geographic Township of Thorold and historical County of Welland, now the City of Welland within the Regional Municipality of Niagara, Ontario (Figure 1). This investigation was conducted in advance of the construction of a proposed housing development on a vacant lot (the 'Study Area') located on the northern edge of the Town of Welland, to the east of Pelham Corners (Figure 5).

An archaeological assessment was triggered by the Provincial Policy Statement ('PPS') that is informed by the *Planning Act* (Government of Ontario 1990a), which states that decisions affecting planning matters must be consistent with the policies outlined in the larger *Ontario Heritage Act* (Government of Ontario 1990b). According to Section 2.6.2 of the PPS, "development and site alteration shall not be permitted on lands containing archaeological resources or areas of archaeological potential unless significant archaeological resources have been conserved." To meet this condition, a Stage 1-2 assessment was conducted as part of the Site Plan application under archaeological consulting license P389 issued to Dr. Walter McCall by the Ministry of Heritage, Sport, Tourism and Culture Industries ('MHSTCI') and adheres to the archaeological license report requirements under subsection 65 (1) of the *Ontario Heritage Act* (Government of Ontario 1990b) and the MHSTCI's *Standards and Guidelines for Consultant Archaeologists* ('*Standards and Guidelines*'; Government of Ontario 2011).

The purpose of a Stage 2 Property Assessment is to provide an overview of any archaeological resources within the Study Area; to determine whether any of the resources might be archaeological sites with cultural heritage value or interest ('CHVI'); and to provide specific direction for the protection, management and/or recovery of these resources. In compliance with the *Standards and Guidelines* (Government of Ontario 2011), the objectives of the following Stage 2 Property Assessment are as follows:

- To document all archaeological resources within the Study Area;
- to determine whether the Study Area contains archaeological resources requiring further assessment; and
- to recommend appropriate Stage 3 assessment strategies for archaeological sites identified.

The licensee received permission from the Proponent to enter the Study Area and conduct all required archaeological fieldwork activities, including the recovery of artifacts.

1.2 Historical Context

1.2.1 Post-Contact Aboriginal Resources

The earliest documented pre-European settlers arrived to the Niagara Peninsula from southwestern Ontario during the 14th century AD, at the peak of Iroquois culture. By 1400, the majority of the region was occupied by an Iroquoian speaking tribe referred to as the Attawandaran (aka the Atiquandaronk or Attouanderonks), who exploited the fertile land and abundant water sources throughout the region for fishing, hunting, and agriculture (Niagara Falls Info 2022). This moniker was given to the community by the neighbouring Wendat as a slur against their unusual dialect. Those Attawandaran tribes who settled along the Niagara River were referred to as the Onguiaahra (later the Ongiara), which has been loosely translated as one of "the Straight," "the Throat," or "the Thunder of Waters" (Niagara-on-the-Lake 2016; Niagara-on-the-Lake Realty 2022). The Town of Niagara-on-the-Lake derives its name from the Onguiaahra village site on which it was founded. The name 'Neutral' was given to the Attawandaran by French explorers who began arriving in the 17th century. This new designation referred to the community's status as peacekeepers between the warring Huron and Iroquois tribes (Niagara Falls Info 2022).

The earliest recorded European visit to the Niagara region was undertaken by Étienne Brûlé, an interpreter and guide for Samuel de Champlain. In June 1610, Brûlé requested permission to live among the Algonquin people and to learn their language and customs. In return, Champlain agreed to take on a young Huron named Savignon, to teach him the language and customs of the French. The purpose of this endeavour was to establish good relations with Aboriginal communities in advance of future military and colonial enterprises in the area. In 1615, Brûlé joined twelve Huron warriors on a mission to cross enemy territory and seek out the Andaste people, allies of the Huron, to ask for their assistance in an expedition being planned by Champlain (Heidenreich 1990). The mission was a success, but took much longer than anticipated. Brûlé returned with the Andaste two days too late to help Champlain and the Hurons, who had already been defeated by the Iroquois (Heidenreich 1990).

Throughout the middle of the 17th century, the Iroquois of the Five Nations sought to expand upon their territory and to monopolise the local fur trade as well as trade between the European markets and the tribes of the western Great Lakes. A series of bloody conflicts followed known as the Beaver Wars, or the French and Iroquois Wars, were contested between the Iroquois and the French with their Huron and other Algonquian speaking allies of the Great Lakes region. Many communities were destroyed during this protracted conflict including the Huron, Neutral, Erie, Susquehannock, and Shawnee leaving the Iroquois as the dominant group in the region. By 1653 after repeated attacks, the Niagara peninsula and most of Southern Ontario had been vacated. By 1667, all members of the Five Nations had signed a peace treaty with the French and allowed their missionaries to visit their villages (Heidenreich 1990).

Ten years later, hostilities between the French and the Iroquois resumed after the latter formed an alliance with the British through an agreement known as the Covenant Chain (Heidenreich 1990). In 1696, an aging Louis de Buade, Comte de Frontenac et de Palluau, the Governor General of New France, rallied the Algonquin forces and drove the Iroquois out of the territories north of Lake Erie, as well as those to the west of present-day Cleveland, Ohio. A second treaty was concluded between the French and the Iroquois in 1701, after which the Iroquois remained mostly neutral (Noble 1978; Jamieson 1992).

Throughout the late 17th and early 18th centuries, various Iroquoian-speaking communities had been migrating into southern Ontario from New York State. In 1722, the Five Nations adopted the Tuscarora in New York becoming the Six Nations (Pendergast 1995). This period also marks the arrival of the Mississaugas into Southern Ontario and, in particular, the watersheds of the lower Great Lakes (Konrad 1981; Schmalz 1991). The oral traditions of the Mississaugas, as told by Chief Robert Paudash suggest that the Mississaugas defeated the Mohawk nation, who retreated to their homeland south of Lake Ontario. Following this conflict, a peace treaty was negotiated and, at the end of the 17th century, the Mississaugas settled permanently in Southern Ontario (Praxis Research Associates n.d.). Around this same time, members of the Three Fires Confederacy (the Chippewa, Ottawa, and Potawatomi) began immigrating from Ohio and Michigan into southwestern Ontario (Feest and Feest 1978).

The Study Area first entered the Euro-Canadian historical record on December 7th, 1792 as part of Treaty No. 3, which included land acquired in the 'Between the Lakes Purchase' dating to May 22, 1784. According to the terms of the treaty, the Mississaugas ceded to the Crown approximately 3,000,000 acres of land between Lake Huron, Lake Erie, and Lake Ontario in return for trade goods valued at £1180.

The limits of the Treaty 3 lands are documented as comprising,

> *Lincoln County excepting Niagara Township; Saltfleet, Binbrook, Barton, Glanford and Ancaster Townships, in Wentworth County; Brantford, Onondaga, Tusc[a]r[o]ra, Oakland and Burford Townships in Brant County; East and West Oxford, North and South Norwich, and Dereham Townships in Oxford County; North Dorchester Township in Middlesex County; South Dorchester, Malahide and Bayham Township in Elgin County; all Norfolk and Haldimand Counties; Pelham, Wainfleet, Thorold, Cumberland and Humberstone Townships in Welland County.*
>
> Morris 1943: 17-18

One of the stated objectives of the Between the Lakes Purchase was "to procure for that part of the Six Nation Indians coming into Canada a permanent abode" (Morris 1943: 17). Shortly after the transaction had been finalised in May of 1784, Sir Frederick Haldimand, the Governor of Québec, made preparations to grant a portion of land to those Six Nations who remained loyal to the Crown during the American War of Independence. More specifically, Haldimand arranged for the purchase of approximately 550,000 acres of land adjacent to the Treaty 3 limits from the Mississaugas. This tract of land, referred to as either the Haldimand Tract or the 1795 Crown Grant to the Six Nations, was provided for in the Haldimand Proclamation of October 25th, 1784 and was intended to extend a distance of six miles on each side of the Grand River from mouth to source (Weaver 1978). By the end of 1784, representatives from each constituent nation of the Six Nations, as well as other allies, relocated to the Haldimand Tract with Joseph Brant (Weaver 1978; Tanner 1987).

Throughout southern Ontario, the size and nature of the pre-contact settlements and the subsequent spread and distribution of Aboriginal material culture began to shift with the establishment of European settlers. By 1834 it was accepted by the Crown that losses of portions of the Haldimand Tract to Euro-Canadian settlers were too numerous for all lands to be returned. Lands in the Lower Grand River area were surrendered by the Six Nations to the British Government in 1832, at which point most Six Nations people moved into Tuscarora Township in Brant County and a narrow portion of Oneida Township (Page & Co. 1879; Weaver 1978; Tanner 1987). Following a decline in population and the surrender of most of their lands along the Credit River, the Mississaugas were given 6000 acres of land on the Six Nations Reserve, establishing the Mississaugas of New Credit First Nation, now the Mississaugas of the Credit First Nation ('MCFN'), in 1847 (Smith 2002).

Despite the encroachment of European settlers on previously established Aboriginal territories, "written accounts of material life and livelihood, the correlation of historically recorded villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought" (Ferris 2009). As Ferris observes, despite the arrival of a competing culture, First Nations communities throughout Southern Ontario have left behind archaeologically significant resources that demonstrate continuity with their pre-contact predecessors, even if they have not been recorded extensively in historical Euro-Canadian documentation.

1.2.2 Euro-Canadian Land Use

The current Study Area is located in the Geographic Township of Thorold and historical County of Welland, now the Town of Pelham within the Regional Municipality of Niagara, Ontario.

The history of the region began in 1763, when the Treaty of Paris brought an end to the Seven Years War, contested between the French and the British and their respective allies. Under the Royal Proclamation of that same year, the large stretch of land from Labrador in the east, moving southwest through the Saint Lawrence River Valley to the Great Lakes, and on to the confluence of the Ohio and Mississippi Rivers became the British Province of Québec (Niagara Historical Society and Museum 2008).

On July 24, 1788, Sir Guy Carleton, the Governor-General of British North America, divided the Province of Québec into the administrative districts of Hesse, Nassau, Mecklenburg, and Lunenburg (Archives of Ontario 2012-2015). Further change came in December 1791 when the former province was rearranged into Upper Canada and Lower Canada under the provisions of the Constitutional Act. Colonel John Graves Simcoe was appointed as Lieutenant-Governor of Upper Canada and he spearheaded several initiatives to populate the province including the establishment of shoreline communities with effective transportation links between them (Coyne 1895).

In July 1792, Simcoe divided Upper Canada into 19 counties stretching from Essex in the west to Glengarry in the east. Each new county was named after a county in England or Scotland; the constituent townships were then given the names of the corresponding townships from each original British county (Powell and Coffman 1956).

Later that year, the four districts originally established in 1788 were renamed the Western, Home, Midland, and Eastern Districts. As population levels in Upper Canada increased, smaller and more manageable administrative bodies were needed resulting in the establishment of many new counties and townships. As part of this realignment, the boundaries of the Home and Western Districts were shifted and the London and Niagara Districts were established. Under this new territorial arrangement, the Study Area became part of the Niagara District (Archives of Ontario 2012-15). In 1845, after years of increasing settlement that began after the War of 1812, the southern portion of Lincoln County was severed to form Welland County. The two counties would be amalgamated once again in 1970 to form the Regional Municipality of Niagara.

The *George Tremaine Map of Lincoln and Welland Canada West* (the '*Tremaine Map*', G. M. Tremaine 1862.) demonstrates the extent to which Thorold Township had been settled by 1862 (Figure 2). Landowners are listed for every lot within the township, many of which had been subdivided multiple times into smaller parcels to accommodate an increasing population throughout the late 19th century. Structures are prevalent throughout the township, almost all of which front early roads. The Study Area occupies the northwestern quadrant of Lot 235. According to the Tremaine map, A. Killman occupied the entire lot. No structures are illustrated on the property.

According to the *Illustrated Historical Atlas of the Counties of Lincoln and Welland* ('*Historical Atlas*'), by 1876, the western third of Lot 235 had been subdivided into two smaller parcels. G. A. Swayze owned the western third, which corresponds with the current Study Area. E. Sisler is identified as the owner of the rest of Lot 235. No structures or orchards are illustrated on the Swayze property. It should be recognized that historical county atlases were funded by subscriptions fees and were produced primarily to identify factories, offices, residences and landholdings of subscribers. Landowners who did not subscribe were not always listed on the maps (Caston 1997). Moreover, associated structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984).

Looking farther afield, the Welland Canal and the Welland River can be observed to the east of the Study Area, and the communities of Port Robinson and Allanburgh to the northeast, linked by a branch of the Wellington Railroad.

1.2.3 Recent Reports

The Study Area was part of a much larger parcel that was subject to a previous Stage 1 assessment, conducted by Archaeological Services Inc. ('ASI') in 2018 (ASI 2018; PIF# P449-0207-2018) and documented in the following assessment report;

> *Stage 1 Archaeological Assessment of the Northwest Welland Secondary Plan, Part of Lots 174, 175, 176, 226, 227, 228, 233, 234, 235 and 236, Geographic Township of Thorold, Welland County, City of Welland, Regional Municipality of Niagara* (Detritus 2021a).

The results of this investigation will be discussed in greater detail below in Section 1.3.4.

1.3 Archaeological Context

1.3.1 Property Description and Physical Setting

The Study Area is a rectangular property measuring approximately 7.1 hectares ('ha') and fronting the southern side of Quaker Road between the residential properties at 555 and 607 Quaker Road. At the time of assessment, most of the Study Area comprised agricultural land bounded by narrow swathes of dense woodlot along its eastern and western sides (Figure 5). The eastern strip extends around the southeastern corner of the Study Area. The remainder of the southern end was occupied by manicured grass. No structures were present within the Study Area.

The majority of the region surrounding the Study Area has been subject to European-style agricultural practices for over 100 years, having been settled by Euro-Canadian farmers by the

early 19th century. Much of the region today continues to be used for agricultural purposes and more recently residential developments.

The Study Area is located within the Haldimand Clay Plain. According to Chapman and Putnam...

> *...although it was all submerged in Lake Warren, the till is not all buried by stratified clay; it comes to the surface generally in low morainic ridges in the north. In fact, there is in that area a confused intermixture of stratified clay and till. The northern part has more relief than the southern part where the typically level lake plains occur.*
>
> Chapman and Putnam 1984:156

Haldimand clay is slowly permeable, imperfectly drained with medium to high water-holding capacities. Surface runoff is usually rapid, but water retention of the clayey soils can cause it to be droughty during dry periods (Kingston and Presant 1989). The soil is suitable for corn and soybeans in rotation with cereal grains as well as alfalfa and clover (Huffman and Dumanski 1986).

The Niagara Region as a whole is located within the Deciduous Forest Region of Canada, and contains tree species which are typical of the more northern Great Lakes-St. Lawrence Biotic zone, such as beech, sugar maple, white elm, basswood, white oak and butternut (MacDonald & Cooper 1997). During pre-contact and early contact times, the land in the vicinity of the Study Area comprised a mixture of hardwood trees such as sugar maple, beech, oak and cherry. This pattern of forest cover is characteristic of areas of clay soil within the Maple-Hemlock Section of the Great Lakes-St. Lawrence Forest Province-Cool Temperate Division (McAndrews and Manville 1987). In the early 19th, Euro-Canadian settlers began to clear the forests for agricultural purposes.

The closest sources of potable water are the seasonal tributary of the Welland Canals that span the southern end of the Study Area. The Welland River is located approximately 4.9 kilometres ('km') to the east.

1.3.2 Pre-Contact Aboriginal Land Use

The Study Area is situated in a portion of Southwestern Ontario has been occupied by people as far back as 11,000 years ago as the glaciers retreated. For the majority of this time, people were practicing hunter gatherer lifestyles with a gradual move towards more extensive farming practices. Table 1 provides a general outline of the cultural chronology of Thorold Township (Ellis and Ferris 1990).

Table 1: Cultural Chronology for Thorold Township

Time Period	Cultural Period	Comments
9500 – 7000 BC	Paleo Indian	first human occupation hunters of caribou and other extinct Pleistocene game nomadic, small band society
7500 - 1000 BC	Archaic	ceremonial burials increasing trade network hunter gatherers
1000 - 400 BC	Early Woodland	large and small camps spring congregation/fall dispersal introduction of pottery
400 BC – AD 800	Middle Woodland	kinship based political system incipient horticulture long distance trade network
AD 800 - 1300	Early Iroquoian (Late Woodland)	limited agriculture developing hamlets and villages
AD 1300 - 1400	Middle Iroquoian (Late Woodland)	shift to agriculture complete increasing political complexity large palisaded villages
AD 1400 - 1650	Late Iroquoian	regional warfare and political/tribal alliances destruction of Huron and Neutral

1.3.3 Previous Identified Archaeological Work

In order to compile an inventory of known archaeological resources in the vicinity of the Study Area, Detritus consulted the ASDB. The ASDB, which is maintained by the MHSTCI (Government of Ontario n.d.), contains information concerning archaeological sites that have been registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden Block is approximately 13km east to west and approximately 18.5km 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 lies within block AgGt.

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

According to the ASDB, four sites have been registered within a 1km radius of the Study Area (Table 2). Three of the four were pre-contact Aboriginal sites dating to the Early Archaic, Late Archaic and Early Woodland periods respectively. The other is a post-contact Euro-Canadian residential site.

Table 2: Registered Sites in the Vicinity of the Study Area

Borden #	Site Name	Time Period	Affinity	Site Type
AgGt-36	Quaker Park	Early Archaic	Aboriginal	camp/campsite
AgGt-44	Milburn	Late Archaic	Aboriginal	camp/campsite
AgGt-45		Early Woodland	Aboriginal	findspot
AgGt-269		Post-Contact	Euro-Canadian	residential

To the best of Detritus knowledge, none of the sites tabulated above were located within 50m of the Study Area and no field surveys have been conducted on adjacent properties.

1.3.4 Summary of Previous Investigations

As was noted above in Section 1.2.3, the Study Area was part of a much larger parcel that was subject to a previous Stage 1 assessment, conducted by ASI in 2018 (ASI 2018). The Stage 1 investigation area measured 189ha and was generally bounded by Steve Bauer Trail to the west; various commercial and industrial lots fronting Niagara Street to the east; residential developments, agricultural land, and woodlot to the north; and the campus of Niagara College to the south (Figure 4). Based on the results of ASI's assessment, approximately 99% (187.4ha) of the Stage 1 assessment are exhibited archaeological potential. This potential extended across approximately 80% of the current Study Area, excluding much of the southeastern quadrant.

Although portions of the Stage 1 assessment area, including a section of the current Study Area, did not exhibit archaeological potential, ASI recommended that any future developments within the Study Area be preceded by a Stage 2 field assessment (ASI 2018).

1.3.5 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. As was discussed earlier, ASI determined that most of the Study Area demonstrated archaeological potential (ASI 2018).

Detritus also applied archaeological potential criteria commonly used by the MHSTCI to determine areas of archaeological potential within the Study Area. According to Section 1.3.1 of the *Standards and Guidelines* (Government of Ontario 2011), these variables include proximity to previously identified archaeological sites, distance to various types of water sources, soil texture and drainage, glacial geomorphology, elevated topography, and the general topographic variability of the area.

Distance to modern or ancient water sources is generally accepted as the most important determinant of past human settlement patterns and, when considered alone, may result in a determination of archaeological potential. However, any combination of two or more other criteria, such as well-drained soils or topographic variability, may also indicate archaeological potential. When evaluating distance to water it is important to distinguish between water and shoreline, as well as natural and artificial water sources, as these features affect site locations and types to varying degrees. As per Section 1.3.1 of the *Standards and Guidelines* (Government of Ontario 2011), water sources may be categorized in the following manner:

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

As was stated above, closest sources of potable water are the seasonal tributary of the Welland Canals that span the southern end of the Study Area. The Welland River is located approximately 4.9 km to the east.

Soil texture is also an important determinant of past settlement, usually in combination with other factors such as topography. The Study Area is situated within the Haldimand Clay Plain physiographic region. As aforementioned, the primary soils within the Study Area, meanwhile, have been documented as being suitable for pre-contact Aboriginal practices. Considering also the length of occupation of the area prior to the arrival of European settlers, as evidenced by the three pre-contact sites registered within 1km of the Study Area, the Aboriginal archaeological potential is judged to be moderate to high.

For Euro-Canadian sites, archaeological potential can be extended to areas of early Euro-Canadian settlement, including places of military or pioneer settlements; early transportation routes; and properties listed on the municipal register or designated under the *Ontario Heritage Act* (Government of Ontario 1990b) or property that local histories or informants have identified with possible historical events.

The 1862 *Tremaine* map of Thorold Township indicates A Killman as the owner of all of Lot 235, including the portion that corresponds to the Study Area. According to the *Historical Atlas* map (Page & Co 1876; Figure 2), by 1876 the Study Area was owned by G. A. Swayze. Considering also the proximity of the Welland Canal and the Welland River to the east of the Study Area, and the historical communities of Port Robinson and Allanburgh to the northeast linked by the Wellington Railroad, the potential for post-contact Euro-Canadian archaeological resources is judged to be moderate to high.

Finally, despite the factors mentioned above, extensive land disturbance can eradicate archaeological potential within a Study Area, as per Section 1.3.2 of the *Standards and Guidelines* (Government of Ontario 2011). Current aerial imagery identified no areas of potential disturbance within the Study Area. As a result, the entire Study Area has been determined to demonstrate pre-contact Aboriginal, post-contact Aboriginal, and Euro-Canadian archaeological potential.

2.0 Field Methods

The Stage 2 field assessment was conducted on May 9, 2022 under consulting license P389 issued to Dr. Walter McCall by the MHSTCI. The limits of the Study Area were determined by Quaker Road to the north; a tree line to the west; the Niagara Catholic District School property to the east; and the residential properties along Northwood Drive to the south.

During the Stage 2 field work, the weather was sunny with a temperature of 22° Celsius. Assessment conditions were excellent; at no time were the field, weather, or lighting conditions detrimental to the recovery of archaeological material. Photos 1 to 16 demonstrate the field conditions throughout the Study Area at the time of the assessment, including areas that met the requirements for a Stage 2 archaeological assessment, as per Section 7.8.6, Standards 1a and b of the *Standards and Guidelines* (Government of Ontario 2011). Figure 5 illustrates the Stage 2 assessment methods, including all photograph locations and directions; Figure 6 illustrates the Stage 2 assessment methods in relation to the current development map.

Approximately 95% of the Study Area comprised a large agricultural field that was accessible to ploughing, and thus met the criteria for a Stage 2 pedestrian survey as per Section 2.1.1, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011). The land was ploughed and allowed to weather prior to assessment, as per Section 2.1.1, Standards 2 and 3 of the *Standards and Guidelines* (Government of Ontario 2011). The ploughing was deep enough to provide total topsoil exposure, and provided a minimum of 80% surface visibility as per Section 2.1.1, Standards 4 and 5 of the *Standards and Guidelines* (Government of Ontario 2011). The ploughed land was subject to pedestrian survey at a 5m interval in accordance with Section 2.1.1, Standard 6 of the *Standards and Guidelines* (Government of Ontario 2011; Photos 1-3). During the pedestrian survey, when archaeological resources were recovered, survey intervals were intensified to 1m within a 20m radius of the find as per Section 2.1.1 Standard 7 of the *Standards and Guidelines*. This approach was taken to establish whether or not the artifact was an isolated find or part of a larger artifact scatter. The pedestrian survey resulted in the documentation of a single cluster of 233 primarily Euro-Canadian artifacts spanning an area of 37m east to west by 28m north to south in the northeastern corner of the Study Area. The site was registered with the MHSTCI as H1 (AgGt-296), as per Section 7.12, Standard 1b of the *Standards and Guidelines*

All of the surface artifacts encountered during the pedestrian survey were recorded according to their specific findspot designation and were collected for laboratory analysis and description, as per Section 2.1.1, Standard 8 of the *Standards and Guidelines* (Government of Ontario 2011). A reading was taken for each findspot location, in addition to two fixed reference landmarks as per Section 2.1, Standard 4 and Section 5.0, Standard 2a of the *Standards and Guidelines* (Government of Ontario 2011). All coordinates recorded during the Stage 2 assessment were taken using a Garmin eTrex 10 GPS unit with a minimum accuracy 1-2.5m (North American Datum 1983 ('NAD83') and UTM Zone 17T) and are presented in the Supplementary Documentation.

Approximately 5% of the Study Area comprised the wooded and grassy areas that were determined to be inaccessible to ploughing. These areas were subject to a typical Stage 2 test pit survey, conducted at 5m intervals in accordance with Section 2.1.2, Standards 1 and 2 of the *Standards and Guidelines* (Government of Ontario 2011; Photos 4 to 11). Each test pit was at least 30 centimetres ('cm') in diameter and excavated 5cm into sterile subsoil as per Section 2.1.2, Standards 5 and 6 of the *Standards and Guidelines* (Government of Ontario 2011). A small portion of a laneway was observed in the northeastern corner. Given that this small area was less than 5m wide it did not affect the test pit survey intervals.

The test pits featured a single layer of brown sandy loam, identified as topsoil, above an orange brown sandy subsoil. The test pits ranged in depth from 23cm to 37cm. Considering that each test pit was excavated 5cm into subsoil, the topsoil at H1 (AgGt-296) ranged in thickness from 18 to 32cm. The soil was examined for stratigraphy, cultural features, or evidence of fill. All soil was screened through six-millimetre mesh hardware cloth to facilitate the recovery of small artifacts and then used to backfill the pits as per Section 2.1.2, Standards 7 and 9 of the *Standards and Guidelines* (Government of Ontario 2011). The test pit survey resulted in the recovery of no archaeological material; therefore, no additional assessment methods were employed.

3.0 Record of Finds

The Stage 2 archaeological assessment was conducted employing the methods described in Section 2.0 above resulting in the documentation of a single Euro-Canadian site, H1 (AgGt-296). An inventory of the documentary record generated by the fieldwork is provided in Table 3 below.

Table 3: Inventory of Document Record

Document Type	Current Location	Additional Comments
1 Page of Field Notes	Detritus' office	Stored digitally in project file
1 Maps Provided by the Proponent	Detritus' office	Stored digitally in project file
1 Field Map	Detritus' office	Stored digitally in project file
13 Photographs	Detritus' office	Stored digitally in project file

All of the material culture collected during the Stage 2 survey is contained in one box and will be temporarily housed in the offices of Detritus until formal arrangements can be made for its transfer to Her Majesty the Queen in right of the Province of Ontario or another suitable public institution acceptable to the MHSTCI.

3.1 H1 (AgGt-296)

The Stage 2 assessment of H1 (AgGt-296) resulted in the documentation of 233 primarily Euro-Canadian artifacts. A single pre-contact Aboriginal biface rounded out the assemblage (Table 4).

Table 4: H1 (AgGt-296) Artifact Summary

Artifacts	Frequency	%
Ceramics	157	67.38
Household	64	27.47
Structural	10	4.29
Personal	1	0.43
Precontact	1	0.43
Total	**233**	**100.00**

3.1.1 Ceramics (see Appendices 10.2.1 and 10.2.2)

Approximately two-thirds of the artifact assemblage from H1 (AgGt-296) consisted of ceramic pieces, most of which were identified as sherds of refined white earthenware ('RWE'). Ironstone and stoneware pieces rounded out the ceramic assemblage. Table 5 provides a summary of the ceramic assemblage by ware type and Table 6, by surface decoration.

Table 5: Ceramic Assemblage by Ware Type

Ceramics	Frequency	%
RWE	129	82.17
stoneware	17	10.83
ironstone	11	7.01
Total	**157**	**100.00**

Table 6: Ceramic Assemblage by Decoration

Artifact	Frequency	%
RWE, undecorated	115	73.25
Stoneware, undecorated	17	10.83
RWE, transfer printed	14	8.92
ironstone, undecorated	11	7.01
Total	**157**	**100.00**

Most of the ceramic pieces were undecorated (91.1%). The decorated pieces included 14 sherds of RWE featuring transfer printed designs in green (n=9), blue (n=4) and black (n=1). Whereas blue and black transfer printed designs were common throughout the 19th century from 1830 onwards, green was common between 1830 and 1845, and again after 1890. A late 19th century occupation is supported also by the presence of ironstone and stoneware, which replaced red earthenware after 1870.

Additionally, all of the ceramic pieces from H1 (AgGt-296) were examined in order to describe the function of the item from which the ceramic sherd originated. However, for those sherds that were too fragmentary for a functional assignment, an attempt was made to at least provide a formal description, such as to which portion of an item the sherd belonged. For example, what used to be a porcelain teacup but now found in an archaeological context could be classified in the artifact catalogue in a descending order of specificity depending on preservation and artifact size: a teacup (function), a cup (function), a hollowware (form), or a rim fragment (form). Flatware was differentiated based on the absence of curvature in the ceramic cross-section of each sherd. The classifications used in the current investigation are based upon the system established by Matthew Beaudoin (Beaudoin 2013: 78-82). If Beaudoin's classifications could not be applied, then the broader definitions established by Barbara Voss were used (Voss 2008:209). Ultimately, if sherds were small enough that even a general functional or formal ware type could not be determined, then the sherd was simply classified as a rim fragment, a non-rim fragment, a base fragment, or indeterminate.

Among the specimens recovered from H1 (AgGt-296), 33 were identified as hollowware vessels including three transfer printed RWE bowl fragments, three undecorated RWE teacup fragments, one undecorated RWE handle fragment, and one stoneware inkwell fragment. Another eight pieces were classified as flatware, including three transfer printed RWE bowl sherds, and one undecorated platter fragment. The remaining ceramic pieces were too fragmentary to determine form or function. Table 7 provides a summary of the ceramic assemblage from H1 (AgGt-296) by form and Table 8, by function.

Table 7: Ceramic Assemblage by Form

Artifact	Flat	Hollow	Unknown
RWE, undecorated	2	9	104
stoneware, undecorated	0	11	6
RWE, transfer printed	4	4	6
ironstone, undecorated	2	9	11
Total	**8**	**33**	**116**

Table 8: Ceramic Assemblage by Function

Artifact	Plate	Platter	Bowl	Teacup	Inkwell	Handle	Unknown
RWE, undecorated	0	0	0	3	0	1	111
stoneware, undecorated	0	0	0	0	1	0	16
RWE, transfer printed	3	0	3	0	0	0	8
ironstone, undecorated	0	1	0	0	0	0	10
Total	**3**	**1**	**3**	**3**	**1**	**1**	**145**

3.1.2 Household (see Appendix 10.2.3)

Just over one-quarter of the Stage 2 assemblage from H1 (AgGt-296) included household artifacts, which comprised almost exclusively glassware (Table 9).

Table 9: Household Artifact Summary

Artifact	Freq.	%
bottle glass	60	92.19
faunal remains, mammalian	2	3.13
milk glass	2	3.13
glass jar	1	1.56
Total	**64**	**100.00**

Most of the glassware included bottle fragments (n=59), almost two thirds of which were clear and possibly machine manufactured in the late 19th or 20th century. Among the tinted bottle pieces are two bottle finishes, including an amethyst prescription finish (Cat#79) and an aqua brandy finish (Cat#106). Both were common from the 1870s to the 1920s. Two pieces of milk glass and a glass mason jar fragment, also common during this same interval, rounded out the glassware. The remainder of the household artifacts included an unknown animal bone and a pig's tooth.

3.1.3 Structural Artifacts (see Appendix 10.2.4)

Few structural artifacts were recovered during the Stage 2 assessment of H1 (AgGt-296), accounting for less than 5% of the artifact assemblage (Table 10).

Table 10: H1 (AgGt-296) Structural Artifact Summary

Artifact	Freq.	%
cut nails	5	50.00
brick	3	30.00
window glass	2	20.00
Total	**10**	**100.00**

Both of the window glass pieces measured greater 1.6mm in thickness, suggestive of a post-1845 period occupation. The presence of cut nails and red brick also support a middle to late 19th century occupation.

3.1.4 Personal Artifacts (see Appendix 10.2.5)

A single four-hole Prosser style button was the only personal item represented in the Stage 2 assemblage from H1 (AgGt-296). Prosser buttons were common from 1840 onwards and remained popular into the 20th century.

3.1.5 Pre-Contact Aboriginal Artifact

Bifaces are the most common form of pre-contact Aboriginal lithic tool observed on archaeological sites in Southern Ontario, and could be made into a variety of tools with different functions. Due to their long span of production, bifacial tools cannot be used to determine the cultural affiliation or time period of the occupation of a site.

One biface of unknown use was recovered during the Stage 2 assessment of H1 (AgGt-296). The specimen was manufactured from Onondaga chert and appears to be complete, measuring 61mm long, 38mm wide, and 16mm in thickness (Cat#175).

3.1.6 Artifact Catalogue

The complete catalogue of artifacts recovered during the Stage 2 assessment of H1 (AgGt-296) is provided in Appendix 10.1 below.

4.0 Analysis and Conclusions

Detritus was retained by the Proponent to conduct a Stage 1-2 archaeological assessment in advance of the construction of a proposed housing development on a vacant lot located on the northern edge of the Town of Welland, to the east of Pelham Corners.

ASI conducted a Stage 1 assessment of the Study Area in 2018 as part of their investigation of a much larger parcel that incorporated the current development property. Based on the results of ASI's assessment, 99% of the Stage 1 assessment area exhibited archaeological potential. This potential extended across most of the current Study Area, excluding much of the southeastern quadrant. Although portions current Study Area did not exhibit archaeological potential, ASI recommended that any future developments within the larger Stage 1 assessment area as a whole be preceded by a Stage 2 field assessment (ASI 2018).

The Stage 2 field assessment of the current Study Area was conducted on May 9, 2021. The manicured grass and wooded areas were subject to a typical test pit survey. No archaeological material was encountered. The agricultural land was subject to a typical pedestrian survey. This investigation resulted in the documentation of a single Euro-Canadian site, registered with the MHSTCI as H1 (AgGt-296).

The Stage 2 assessment of H1 (AgGt-296) resulted in the documentation of 233 primarily Euro-Canadian artifacts spanning an area of 37m east to west by 28m north to south in the northeastern corner of the Study Area. A single pre-contact Aboriginal bifacial tool manufactured from Onondaga chert was also recovered. The Euro-Canadian artifacts included almost exclusively ceramics and household artifacts, which comprised 94.8% of the Stage 2 assemblage.

The ceramic assemblage was dominated by sherds of RWE, most of which were undecorated. The decorated pieces featured transfer printed designs in green, blue, and black (n=1), which were common in the middle to late 19th century. The remainder of the ceramic assemblage included undecorated sherds of stoneware and ironstone, suggestive of a late 19th century occupation.

A late 19th century occupation is supported also by the household assemblage, which comprised almost exclusively glassware. Most of the glassware included bottle fragments, almost two thirds of which were clear and possibly machine manufactured in the late 19th or 20th century. Among the tinted bottle pieces are two bottle finishes that were common from the 1870s to the 1920s. Two pieces of milk glass and a mason jar fragment, also common during this same interval, rounded out the glassware. Also included among the household artifacts are an unknown animal bone and a pig's tooth.

The remainder of the Euro-Canadian assemblage includes five cut nails, three red brick fragments, two pieces of window glass measuring greater than 1.6 millimetres in thickness, and a single Prosser button, all of which are indicative of a middle to late 19th century occupation.

Considering the available evidence, H1 (AgGt-296) has been identified as a middle to late 19th century domestic refuse deposit associated with the occupation of G. A. Swayze, who occupied Lot 235 in 1876 according to *The Illustrated Historical Atlas of the Counties of Lincoln and Welland* (Page & Co. 1876).

The single biface that was also recovered from H1 (AgGt-296) is not considered to represent a pre-contact occupation of the site. Rather, this isolated lithic artifact further documents the longstanding occupation of the region as a whole prior to the arrival of European settlers, as evidenced by the four sites producing pre-contact Aboriginal artifacts registered within one kilometre of the Study Area.

5.0 Recommendations

Based on the results of the Stage 2 field assessment, and the documentation of at least 20 artifacts that date the period of use at the site to before 1900, H1 (AgGt-296) meets the criteria for a Stage 3 assessment as per Section 2.2, Standard 2c of the *Standards and Guidelines* (Government of Ontario 2011), and retains cultural heritage value or interest ('CHVI'). **A Stage 3 archaeological site-specific assessment is recommended for H1 (AgGt-296).**

The Stage 3 assessments of H1 (AgGt-296) will be conducted according to Section 3.2 of the *Standards and Guidelines* (Government of Ontario 2011). Typically, a Stage 3 assessment for a site documented during a pedestrian survey begins with an intensive controlled surface pickup ('CSP') across the Stage 2 limits, conducted as per Section 3.2.1 of the *Standards and Guidelines* (Government of Ontario 2011). The Stage 2 pedestrian survey at H1 (AgGt-296), however, consisted of an intensive surface collection across the entire limits of the site; all artifacts were individually mapped and collected for laboratory analysis. Thus, the conditions for a Stage 3 CSP at H1 (AgGt-296) were met during the Stage 2 assessment. The Stage 3 assessment of the site will consist of test unit excavation only, conducted as per Section 3.2.2 of the *Standards and Guidelines* (Government of Ontario 2011).

Because it is not yet evident if the level of CHVI at H1 (AgGt-296) will result in a recommendation to proceed to Stage 4, the Stage 3 assessment at the site will consist of the hand excavation of 1m square test units across its Stage 2 limits, as per Table 3.1, Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011). Additional 1m test units, amounting to 20% of the grid total, will be placed in areas of interest within each site extent as per Table 3.1, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011). All excavated soil will be screened through six-millimetre mesh; all recovered artifacts will be recorded by their corresponding site and grid unit designation and collected for laboratory analysis. If a subsurface cultural feature is encountered, the plan of the exposed feature will be recorded and geotextile fabric will be placed over the unit before backfilling the unit.

6.0 Advice on Compliance with Legislation

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

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

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

The *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.

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

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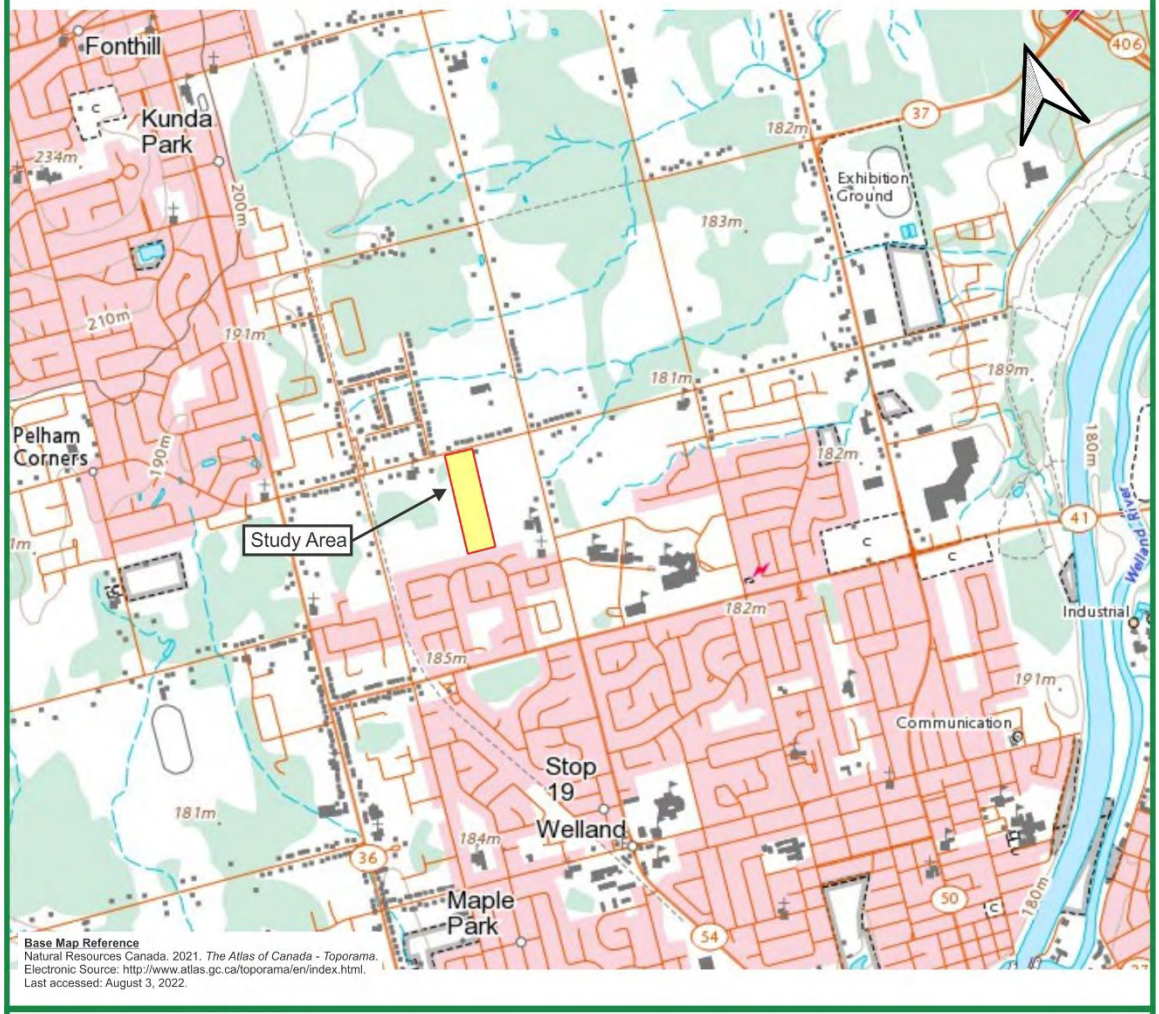
8.0 Maps



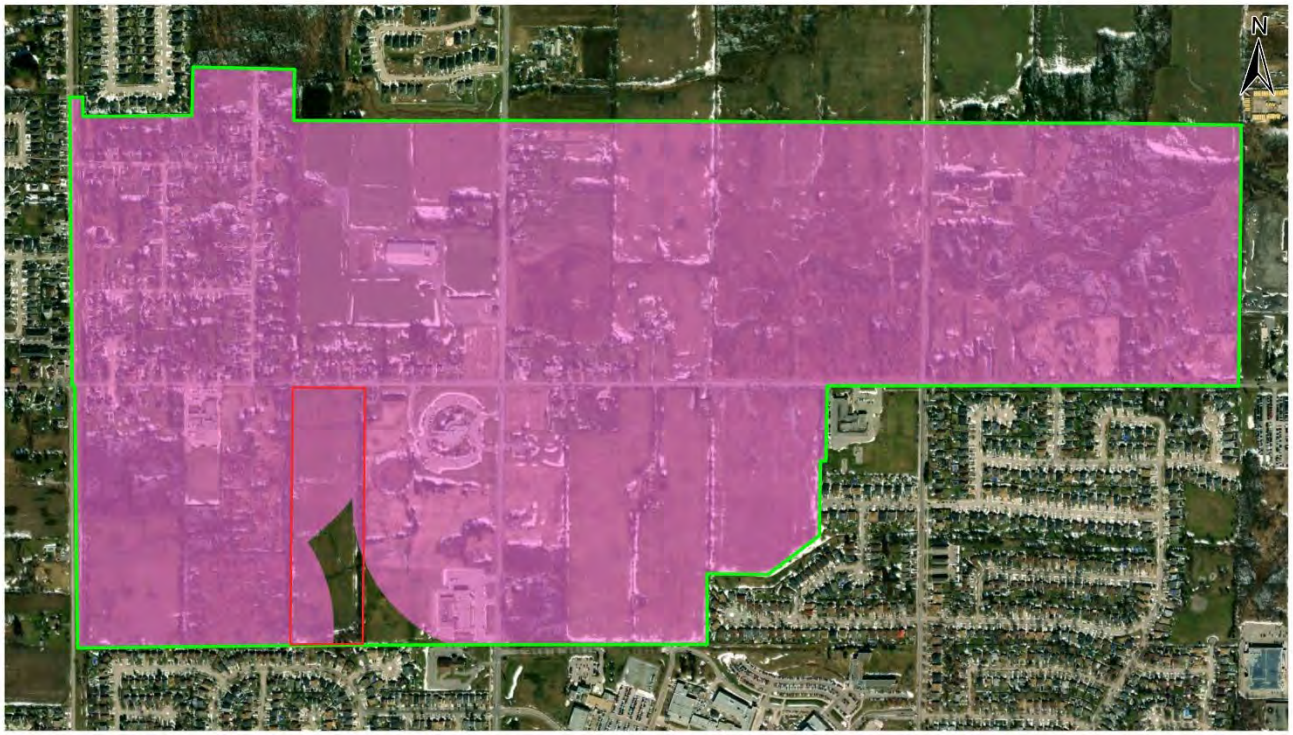
Scale 1:30 000

Figure 1: Study Area

Figure 2: Portion of the 1862 *Tremaine's Map of the Counties of Lincoln and Welland, Canada West*

Not to Scale

Figure 3: Portion of the 1876 *Historical Atlas* Map of Thorold Township



Legend

Study Area Stage 1 Assessment Area (ASI 2018) Archaeological Potential (ASI 2018)

0 300
Metres

Figure 4: Previous Assessment of the Study Area

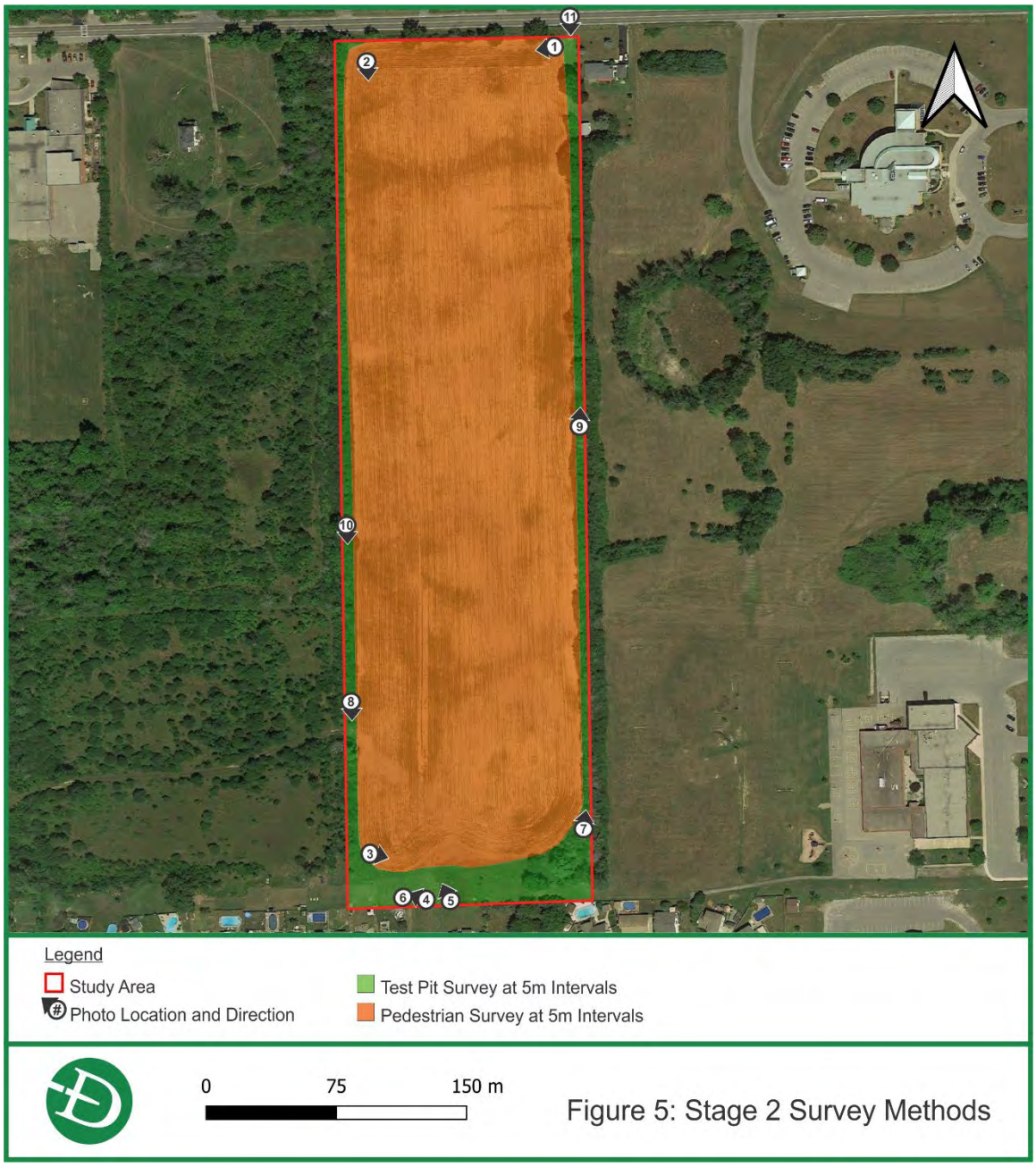
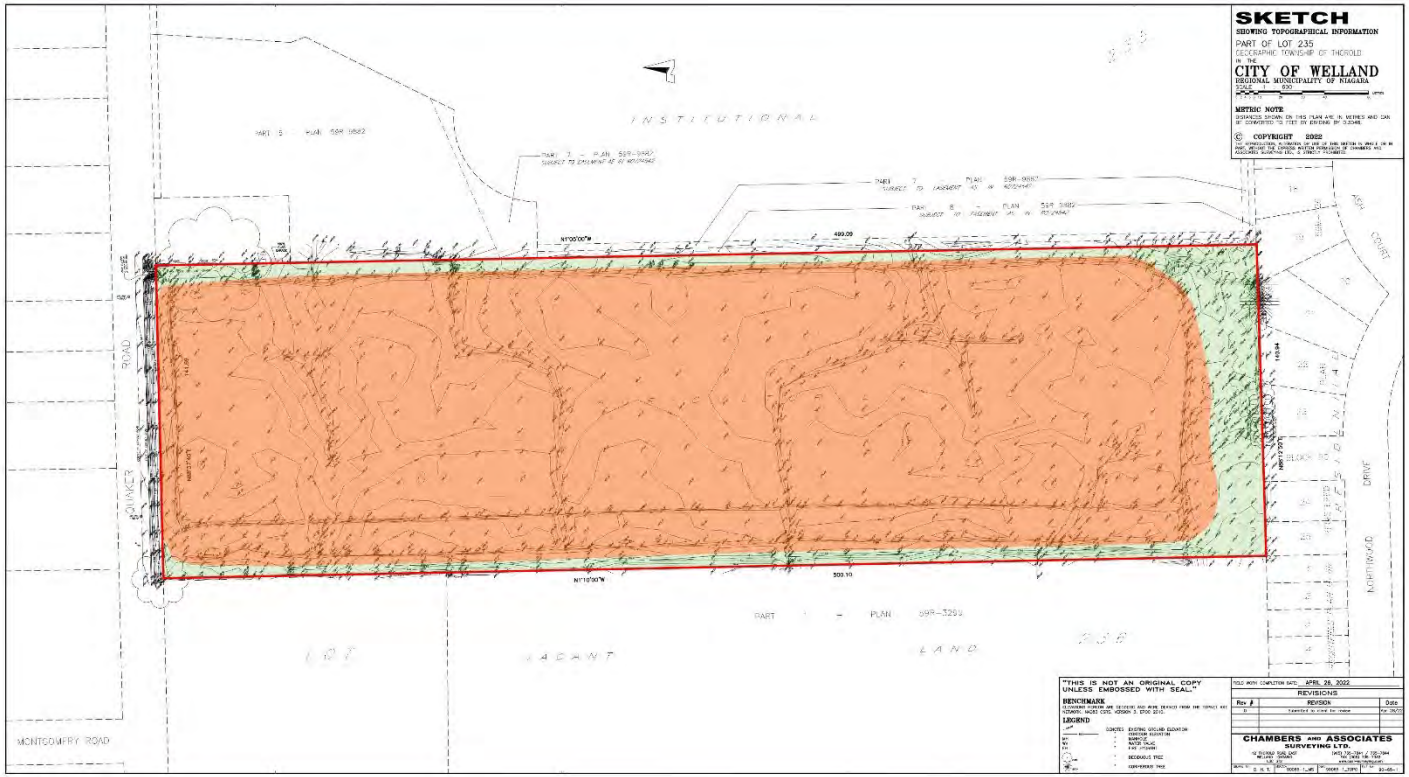


Figure 5: Stage 2 Survey Methods



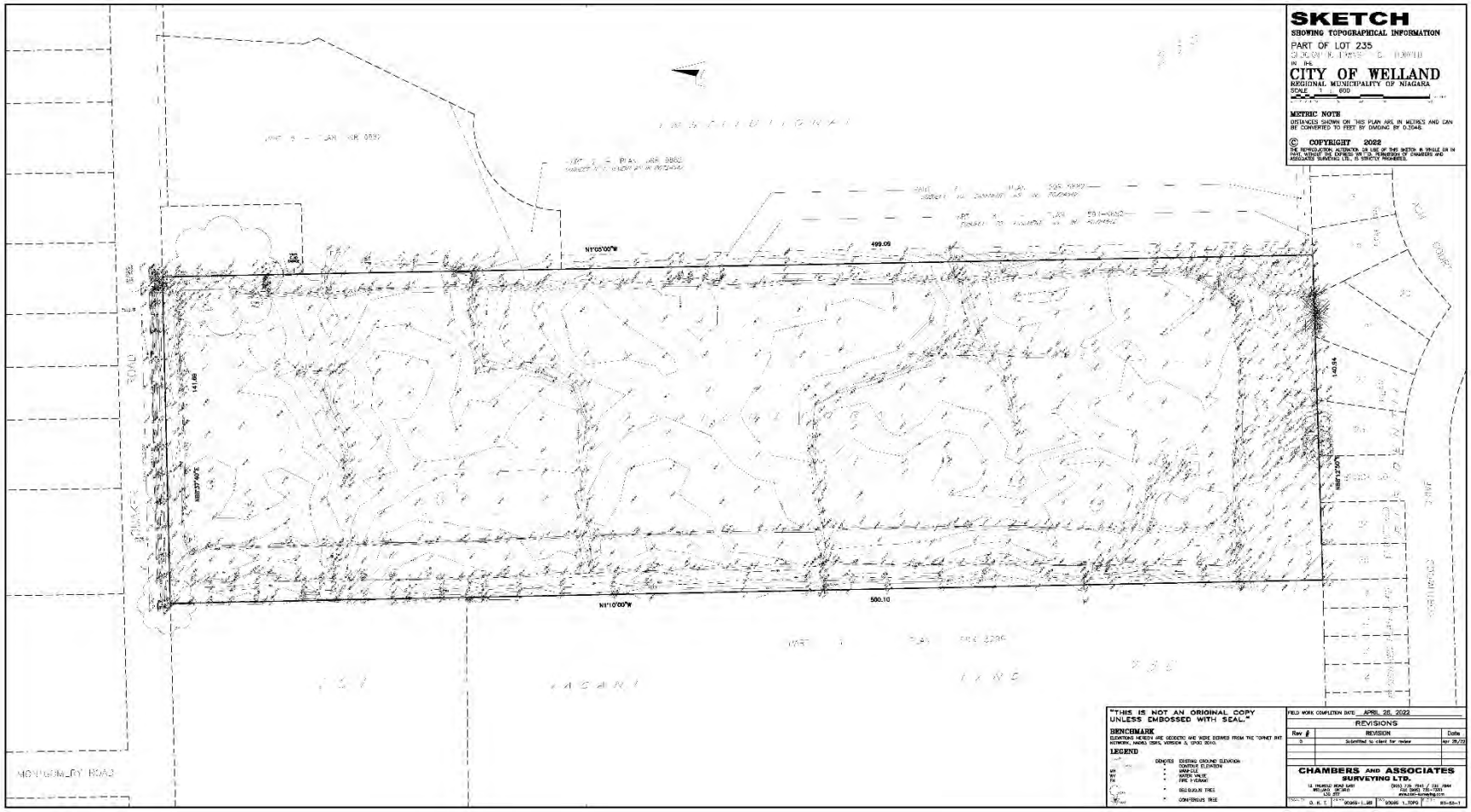
Legend

- Study Area
- Test Pit Survey at 5m Intervals
- Pedestrian Survey at 5m Intervals

0 75 150 m

Figure 6: Stage 2 Survey Methods in Relation to the Development of the Study Area

Figure 7: Development Map



9.0 Images

9.1 Field Photos

Photo 1: Stage 2 Pedestrian Survey at 5m Intervals, facing west

Photo 2: Stage 2 Pedestrian Survey at 5m Intervals, facing south

Photo 3: Stage 2 Pedestrian Survey at 5m Intervals, facing south

Photo 4: Stage 2 Test Pit Survey at 5m Intervals, facing west

Photo 5: Manicured Grass Stage 2 Test Pit Survey at 5m Intervals, facing northwest

Photo 6: Typical Stage 2 Test Pit Survey at 5m Intervals

Photo 7: Stage 2 Test Pit Survey at 5m Intervals, facing north

Photo 8: Stage 2 Test Pit Survey at 5m Intervals, facing south

Photo 9: Stage 2 Test Pit Survey at 5m Intervals, facing north

Photo 10: Stage 2 Test Pit Survey at 5m Intervals, facing south

Photo 11: Disturbed Driveway Not Assessed; Grass Test Pit Surveyed at 5m Intervals, facing south

9.2 Artifact Photos

Plate 1: Sample of Euro-Canadian Artifacts Recovered from H1 (AgGt-296)

Plate 2: Biface Recovered from H1 (AgGt-296)

10.0 Appendix

10.1 Stage 2 Artifact Catalogue H1 (AgGt-296)

Cat #	Context	Artifact	Freq.	Ceramic Form	Ceramic Function	Colour	Comments
1	SF1	bottle glass	1			clear	
2	SF2	stoneware	1	unknown	unknown		yellow glaze
3	SF3	stoneware	1	unknown	unknown		black glaze
4	SF4	RWE, undecorated	1	hollow	unknown		
5	SF5	RWE, undecorated	1	unknown	unknown		
6	SF6	RWE, undecorated	1	unknown	unknown		
7	SF7	bottle glass	1			brown	
8	SF8	ironstone, undecorated	1	hollow	unknown		
9	SF9	stoneware	1	hollow	unknown		black glaze
10	SF10	faunal remains, mammalian	1				tooth, bovine
11	SF11	RWE, undecorated	1	unknown	unknown		
12	SF12	RWE, undecorated	2	unknown	unknown		
13	SF13	RWE, undecorated	1	hollow	unknown		
14	SF14	bottle glass	1			clear	
15	SF15	RWE, undecorated	1	unknown	unknown		
16	SF15	bottle glass	2			clear	
17	SF16	bottle glass	2			clear	
18	SF16	RWE, undecorated	1	unknown	unknown		
19	SF17	RWE, undecorated	2	unknown	unknown		
20	SF18	RWE, undecorated	2	unknown	unknown		
21	SF18	bottle glass	2			clear	
22	SF19	RWE, undecorated	2	unknown	unknown		
23	SF20	ironstone, undecorated	1	hollow	unknown		
24	SF21	RWE, undecorated	3	unknown	unknown		
25	SF22	RWE, undecorated	1	unknown	unknown		
26	SF23	RWE, undecorated	2	unknown	unknown		
27	SF24	RWE, undecorated	1	unknown	unknown		
28	SF24	stoneware	1	hollow	unknown		black glaze

Cat #	Context	Artifact	Freq.	Ceramic Form	Ceramic Function	Colour	Comments
29	SF25	bottle glass	1			brown	
30	SF26	RWE, undecorated	3	unknown	unknown		
31	SF27	RWE, undecorated	1	unknown	unknown		
32	SF28	bottle glass	2			clear	
33	SF28	RWE, undecorated	1	unknown	unknown		
34	SF29	bottle glass	1			aqua	
35	SF30	RWE, undecorated	1	unknown	unknown		
36	SF31	RWE, transfer printed	1	unknown	unknown	green	
37	SF32	RWE, undecorated	1	hollow	teacup		
38	SF33	RWE, undecorated	1	unknown	unknown		
39	SF34	RWE, undecorated	1	hollow	unknown		
40	SF35	RWE, undecorated	1	unknown	unknown		
41	SF36	RWE, transfer printed	1	hollow	unknown	green	
42	SF37	RWE, undecorated	4	unknown	unknown		
43	SF37	bottle glass	1			clear	
44	SF38	ironstone, undecorated	1	hollow	unknown		
45	SF38	stoneware	1	hollow	unknown		black glaze
46	SF39	RWE, undecorated	1	hollow	teacup		
47	SF40	RWE, undecorated	1	unknown	unknown		
48	SF40	bottle glass	1			olive	
49	SF41	ironstone, undecorated	1	hollow	unknown		
50	SF42	RWE, undecorated	1	unknown	unknown		
51	SF42	button, prosser	1			white	four holes
52	SF43	cut nail	1				
53	SF43	RWE, undecorated	1	unknown	unknown		
54	SF44	cut nail	1				
55	SF45	stoneware	1	unknown	unknown		black glaze
56	SF46	ironstone, undecorated	2	hollow	unknown		
57	SF46	RWE, undecorated	1	hollow	handle		
58	SF46	bottle glass	1			clear	
59	SF47	RWE, undecorated	1	unknown	unknown		
60	SF48	RWE, undecorated	2	unknown	unknown		

Cat #	Context	Artifact	Freq.	Ceramic Form	Ceramic Function	Colour	Comments
61	SF48	bottle glass	1			clear	
62	SF49	ironstone, undecorated	1	hollow	unknown		
63	SF50	RWE, undecorated	1	unknown	unknown		
64	SF51	RWE, undecorated	3	unknown	unknown		
65	SF51	stoneware	1	hollow	unknown		black glaze
66	SF52	bottle glass	1			clear	
67	SF53	RWE, undecorated	1	unknown	unknown		
68	SF54	bottle glass	1			clear	
69	SF55	RWE, transfer printed	2	unknown	unknown	green	
70	SF55	RWE, undecorated	2	unknown	unknown		
71	SF55	bottle glass	1			clear	
72	SF55	cut nail	1				
73	SF56	stoneware	1	hollow	inkwell		
74	SF57	RWE, transfer printed	1	flat	plate	green	rim
75	SF57	RWE, undecorated	2	unknown	unknown		
76	SF58	RWE, undecorated	1	unknown	unknown		
77	SF59	RWE, undecorated	3	unknown	unknown		
78	SF60	RWE, undecorated	1	unknown	unknown		
79	SF61	bottle finish	1			amethyst	prescription finish; mid 1870s-1920s
80	SF61	bottle glass	1			brown	
81	SF61	bottle glass	3			clear	
82	SF61	RWE, undecorated	1	unknown	unknown		
83	SF61	brick	1			red	
84	SF62	RWE, undecorated	2	unknown	unknown		
85	SF63	bottle glass	1			green	
86	SF64	bottle glass	2			aqua	
87	SF64	RWE, undecorated	1	unknown	unknown		
88	SF64	cut nail	1				
89	SF65	bottle glass	1			green	
90	SF66	RWE, undecorated	1	hollow	teacup		
91	SF67	milk glass	1				
92	SF68	RWE, undecorated	1	unknown	unknown		

Cat #	Context	Artifact	Freq.	Ceramic Form	Ceramic Function	Colour	Comments
93	SF69	RWE, undecorated	1	unknown	unknown		
94	SF70	RWE, undecorated	1	unknown	unknown		
95	SF70	bottle glass	2			aqua	
96	SF71	bottle glass	1			aqua	
97	SF72	RWE, undecorated	2	unknown	unknown		
98	SF72	bottle glass	1			clear	
99	SF73	RWE, transfer printed	3	hollow	bowl	blue	
100	SF74	RWE, undecorated	2	unknown	unknown		
101	SF75	bottle glass	1			clear	
102	SF76	RWE, undecorated	1	unknown	unknown		
103	SF77	faunal remains, mammalian	1				unknown fragment
104	SF78	ironstone, undecorated	1	hollow	unknown		base
105	SF79	bottle glass	1			clear	
106	SF80	bottle finish	1			aqua	brandy finish; 1860s-1920s
107	SF81	RWE, undecorated	2	unknown	unknown		
108	SF82	RWE, transfer printed	1	unknown	unknown	green	
109	SF83	RWE, undecorated	1	unknown	unknown		
110	SF84	RWE, undecorated	1	unknown	unknown		
111	SF85	RWE, undecorated	1	unknown	unknown		
112	SF86	RWE, undecorated	1	unknown	unknown		
113	SF86	bottle glass	1			aqua	
114	SF87	milk glass	1				
115	SF88	RWE, undecorated	2	flat	unknown		
116	SF89	stoneware	1	unknown	unknown		black glaze
117	SF89	RWE, undecorated	2	unknown	unknown		
118	SF89	bottle glass	1			clear	
119	SF90	ironstone, undecorated	1	flat	unknown		
120	SF90	bottle glass	1			clear	
121	SF91	RWE, undecorated	2	hollow	unknown		
122	SF92	bottle glass	1			aqua	
123	SF93	bottle glass	1			aqua	
124	SF94	ironstone, undecorated	1	hollow	unknown		base

Cat #	Context	Artifact	Freq.	Ceramic Form	Ceramic Function	Colour	Comments
125	SF94	stoneware	1	hollow	unknown		black glaze, rim
126	SF95	bottle glass	1			clear	
127	SF96	stoneware	1	hollow	unknown		black glaze
128	SF97	bottle glass	2			clear	
129	SF98	stoneware	1	hollow	unknown		black glaze
130	SF99	RWE, transfer printed	1	unknown	unknown	green	
131	SF100	bottle glass	1			clear	
132	SF101	RWE, undecorated	1	unknown	unknown		
133	SF101	bottle glass	1			clear	
134	SF102	RWE, undecorated	3	unknown	unknown		
135	SF103	RWE, undecorated	2	unknown	unknown		
136	SF104	RWE, undecorated	2	unknown	unknown		
137	SF104	bottle glass	2			clear	
138	SF104	brick	1			red	
139	SF105	RWE, undecorated	1	unknown	unknown		
140	SF105	bottle glass	1			brown	
141	SF106	stoneware	1	unknown	unknown		black glaze
142	SF107	RWE, transfer printed	2	flat	plate	green	rim
143	SF107	RWE, transfer printed	1	flat	unknown	blue	
144	SF108	RWE, undecorated	2	unknown	unknown		
145	SF109	bottle glass	1			olive	
146	SF110	bottle glass	1			clear	
147	SF111	RWE, undecorated	1	unknown	unknown		
148	SF112	stoneware	1	hollow	unknown		black glaze
149	SF113	ironstone, undecorated	1	flat	platter		
150	SF114	glass jar	1			clear	mason jar; patented 1858, common after 1880
151	SF115	RWE, undecorated	2	unknown	unknown		
152	SF115	cut nail	1				
153	SF116	RWE, undecorated	4	unknown	unknown		
154	SF117	RWE, undecorated	1	unknown	unknown		
155	SF118	RWE, undecorated	1	unknown	unknown		
156	SF119	RWE, undecorated	4	unknown	unknown		

Cat #	Context	Artifact	Freq.	Ceramic Form	Ceramic Function	Colour	Comments
157	SF120	stoneware	1	hollow	unknown		black glaze
158	SF120	window glass	2				>1.6mm
159	SF121	RWE, transfer printed	1	unknown	unknown	black	
160	SF122	stoneware	1	unknown	unknown		black glaze
161	SF122	bottle glass	3			clear	
162	SF123	bottle glass	1			clear	
163	SF124	RWE, undecorated	1	unknown	unknown		
164	SF124	bottle glass	1			clear	
165	SF125	RWE, undecorated	1	unknown	unknown		
166	SF126	RWE, undecorated	2	unknown	unknown		
167	SF127	RWE, undecorated	1	unknown	unknown		
168	SF127	bottle glass	1			clear	
169	SF127	brick	1			red	
170	SF128	RWE, undecorated	2	unknown	unknown		
171	SF129	RWE, undecorated	1	unknown	unknown		
172	SF130	stoneware	1	hollow	unknown		black glaze, rim
173	SF131	bottle glass	1			brown	
174	SF132	bottle glass	1			green	
175	SF133	Biface	1				Onondaga chert; L=61mm, W=38mm, Th=16mm

10.2 Euro Canadian Artifact Descriptions

10.2.1 Ceramic Ware Types

Ironstone

Ironstone is a variety of RWE that was designed by the Turner family in the late 1700s (Tharp n.d). Like its contemporaries, it featured a white surface, but with a bluish tint. Furthermore, ironstone vessels were usually thicker than earlier whiteware varieties with a dense, heavy paste. The impetus behind their development was a desire among Staffordshire potters to find a cheap alternative to imported porcelain. By 1813 James Mason had reworked and patented 'ironstone China.' The patent lasted only fourteen years; by that time a variety of Staffordshire potteries were producing a similar product. Nevertheless, the Mason's brand name had become associated with all of the various stone China ceramics that were in production. Ironstone began to be imported from England to Canada during the 1840s and came to dominate the ceramic trade during the middle part of the century (The Potteries.org 2003). In terms of appearance, ironstone vessels were commonly left plain with infrequent applied surface decoration, although moulded designs were common (Adams 1994).

RWE

In the 1820s, the blue-tinted pearlware glaze gave way to a whiter variety that some archaeologists have taken to calling whiteware; like pearlware, however, this term was not used by manufacturers. According to Miller, the white appearance of whiteware was caused by reducing the amount of cobalt added to the glaze and adding it instead to the paste (Miller 1980a). Because whiteware was manufactured by many different recipes it can be difficult to distinguish from other ceramics in the period, including sherds of pearlware, especially when examining small sherds. As Miller suggests,

> *...if an assemblage of ceramics from the first half of the 19th Century is placed before six archaeologists and they are asked for counts of creamware, pearlware, whiteware, and stone china wares, the results will probably be six different enumerations*
>
> Miller 1980a: 2

Accordingly, the term RWE is used in this report to identify whiteware sherds as well as any sherds that are too small to distinguish between whiteware, pearlware or ironstone, noting that this approach gives a conservative date to any pearlware sherds not correctly identified.

Stoneware

Stoneware vessels are made from a heavy, non-porous paste and, although naturally impermeable, they were usually glazed with a grey or brown slip. Early 19th century varieties were manufactured in England, Germany and the United States and featured a salt glaze. Stoneware vessels were relatively infrequent in Southern Ontario until the mid-1800s; by 1850, at least two potteries in Ontario (Brantford and Toronto) were producing stoneware. Because they were large and durable, stoneware vessels were typically utilitarian, functioning as food storage containers, beer jugs and tankards, butter crocks, and cream jars. By 1870, stoneware utilitarian vessels had almost completed earlier red and yellow varieties in Ontario (Lamb 2003).

10.2.2 Ceramic Ware Types

Transfer Printing

The technique of transferring a pattern from an engraved metal plate to the surface of a ceramic vessel is thought to have developed in the middle of the 18th century (Jervis 1911); it became more widely used among Staffordshire potteries in the 1790s (Shaw 1829). In Southern Ontario, transfer printing was popular through the first half of the 19th century before simpler techniques or no decoration whatsoever became popular. It underwent a revival after 1870 until the end of the Century (Majewski and O'Brien 1987). Blue was the dominant colour available for printed ceramics before 1830, although blue transfer printed designs remained popular on various ware

types throughout the 19th century. Brown, black and green transfer printed wares were popular between 1830 and 1870. Green transfer printing experienced a revival after 1890 (Adams 1994).

10.2.3 Household Artifacts

Bottle Glass

Bottle glass fragments are generally not diagnostic and are often simply categorized according to colour. Clear, or colourless glass was uncommon prior to the 1870s. Until 1880, clear glass bottles often displayed an aqua tinge that resulted from the iron additives used to de-colourise it. Clear or colourless glass came into much more widespread use after the development of automatic bottle manufacturing machines in the early 20th century (Lindsey 2021).

Milk glass, meanwhile, was most commonly used for cosmetic containers, toiletry bottles or cream jars. The opaque white glass was very commonly used for such products dating from about 1870 through to the 20th century (Lindsey 2021).

10.2.4 Structural Artifacts

Nails

Originally all nails were hand made and required skill, as well as a forge to manufacture. As a result, early nails were relatively expensive and methods were sought to have them machine made. Whereas machine cut, or square nail manufacture began in the late 1790s, cut nails only become readily available in Upper Canada by the 1830s. Cut nails revolutionized house framing and were common for a long period, from approximately 1830 to 1890 by which time they had been largely supplanted by wire nails. Wire drawn nails are identical to the type of nails used today, with their round heads and wire shafts (Adams 1994).

Window Glass

Window glass can be temporally diagnostic in a limited manner, but only if at least ten specimens are available. In the 1840s, window glass thickness changed dramatically, in large part due to the lifting of the English import tax on window glass in 1845. This tariff taxed glass by weight and encouraged manufacturers to produce thinner panes. Most window glass manufactured before 1845 tended to be thinner, measuring less than 1.6mm; later window glass was thicker. Because window glass thickness varied even within a single pane an assemblage of at least ten specimens is required to provide an adequate sample (Kenyon 1980).

10.2.5 Personal Artifacts

Buttons

Buttons fashioned from freshwater or tropical shells were commonly used as shirt buttons in the 1840s until they were replaced by more affordable varieties such as Prosser buttons (Adams 1994). The patent for the Prosser button method provides a *terminus post quem* of 1840. The method involves pressure moulding powdered minerals common in the recipe of ceramics, such as clay, flint and feldspar, and firing them at high temperatures to achieve a vitrified finish. While the Prosser buttons were moulded in various patterns or embossed and decorated with transfer and hand-painted glazes, the most common are simple white, sew-though, dish type varieties used on men's shirts (Sprague 2002). They were the most inexpensive buttons available in the 19th century, and remained popular through to the 1920s. Prosser buttons were still being produced in France until the 1960s (Venovcevs 2013).