

## Stage 1-2 Archaeological Assessment Clare Avenue Lands, Welland

Part of Lot 236,  
Geographic Township of Thorold,  
Historical County of Welland,  
now Regional Municipality of Niagara, Ontario

**Submitted to:**

Mountainview Homes  
3350 Merritville Highway, Unit 9  
Thorold, Ontario, L2V 4Y6

and

Ontario's Ministry of Citizenship and Multiculturalism

**Submitted by:**



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PIF Number: P462-0152-2022

CP Number: 2022-100

**ORIGINAL REPORT**

February 7, 2023

## Executive Summary

Detritus Consulting Ltd. ('Detritus') was retained by Mountainview Homes (**'the Proponent'**) to conduct a Stage 1-2 archaeological assessment on part of Lot 236 in the Geographic Township of Thorold within the historical County of Welland, now Regional Municipality of Niagara, Ontario (Figure 1). This assessment was undertaken in advance of a proposed residential subdivision development (Figure 6) at a property on Clare Avenue in **Welland (the 'Assessment Property')**. The development will span the southern portion, approximately two-thirds, of the property on **Clare Avenue (the 'Study Area';** Figure 5) given that the northern one-third contains an Environmental Conservation Area (**'ECA'**) designated as Significant Woodlands.

**The 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* (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 of the Study Area was conducted during the pre-approval phase of the proposed development under archaeological consulting license P462 issued to Mr. Michael Pitul by the Ministry of Citizenship and Multiculturalism ('MCM') and adheres to the archaeological license report requirements under subsection 65 (1) of the Ontario Heritage Act (Government of Ontario, 1990b) and the MCM's Standards and Guidelines for Consultant Archaeologists ('Standards and Guidelines'; Government of Ontario, 2011).**

The Assessment Property is a rectangular parcel that lies to the east of Clare Avenue separated from it by a narrow strip of greenspace known as the Steve Bauer Trail. The Assessment Property measures 7.46 **hectares ('ha')** and is bound to the west by the Steve Bauer Trail; to the east by ECA, to the north and south by residential properties on Quaker Road (647 to 673 Quaker Road) and Briarsdale Crescent (91 to 131 Briarsdale Crescent) respectively; and at the northeast corner by Nouvel Horizon Elementary School, located at 621 Quaker Road (Figure 4).

According to Section 6.1.2.2.E of the *Official Plan* of the City of Welland, the northern one-third of the Assessment Property is designated as ECA in the form of Significant Woodlands greater than 2ha in size (City of Welland, 2019). As such, no development or site alteration are permitted within the ECA until an Environmental Impact Study has been completed (Niagara Region, 2021). See correspondence in Section 1.0, Subsection 1.1 to 1.3) of the Supplementary Documentation for an email from the Proponent; a copy of the *Official Plan* of the City of Welland (City of Welland, 2019); and a copy of the *Recommendation Report – Northwest Welland Secondary Plan (OPA 29) – City of Welland* (Niagara Region, 2021), including a map. As per Section 7.8.1 Standard 1e of the *Standards and Guidelines* (Government of Ontario 2011) a no-go letter has been signed by the Proponent, indicating no development is to occur within the unassessed portion of the Assessment Property designated as ECA in the form of Significant Woodlands (see Section 1.4 in the Supplementary Documentation). In addition, **a letter/an email from the City of Welland (the 'Approval Authority')** indicating that they have implemented or about to implement the constraints on the ECA portion of the property can also be found in Section 1.5 of the Supplementary Documentation.

The reduced Study Area measures 4.54ha and occupies the southern portion of the Assessment Property bound to the south by residential properties on Briarsdale Crescent, to the north by ECA, to the east by wooded land, and to the west by the Steve Bauer Trail that separates it from Clare Avenue. At the time of assessment, the Study Area was an agricultural field with no visible disturbances.

The Study Area was part of a much larger parcel that was subject to a Stage 1 assessment, **conducted by Archaeological Services Inc. ('ASI') in 2018** (Archaeological Services Inc., 2018). The Stage 1 investigation area measured 189ha and was generally bound 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 3). **Based on the results of ASI's assessment, approximately 99% (187.4ha) of the Stage 1 assessment area exhibited archaeological potential.** This potential extended across the

entire current Study Area. ASI recommended that any future development within the Study Area be preceded by a Stage 2 field assessment. The Stage 1 background research indicated that the Study Area exhibited moderate to high potential for the identification and recovery of archaeological resources. As such, a Stage 2 field assessment was recommended for all the agricultural land, within the Study Area.

The Stage 2 assessment took place on July 4<sup>th</sup> 2022. The agricultural land was accessible for ploughing and was assessed using a typical pedestrian survey at five-metre (**‘m’**) intervals. This investigation resulted in the identification and documentation of a single pre-contact Aboriginal site, registered with the MCM as P1 (AgGt-313) and three pre-contact Aboriginal findspots, identified in the field as Findspot 1, Findspot 2 (AgGt-323), and Findspot 3 (AgGt-324) (Tile 5 of the Supplementary Documentation).

The Stage 2 assessment of P1 (AgGt-313) resulted in the documentation of 14 pre-contact Aboriginal artifacts from 14 findspot locations scattered an area roughly 14m by 7m in the southeastern quadrant of the agricultural field approximately 16m from the eastern edge of the Study Area. All of the artifacts recovered from the site were manufactured from Onondaga chert and were identified as pieces of chipping detritus. Morphological analysis of the chert flakes suggests late-stage reduction occurred at the site for the production and maintenance of formal tools and projectile points.

Based on the results of the Stage 2 investigation, P1 (AgGt-313) has been interpreted as a small activity area occupied during the pre-contact period and characterised by late-stage lithic reduction activities. Given the presence of at least ten non-diagnostic pre-contact Aboriginal artifacts in a 10m by 10m pedestrian survey area within an area on or west of the Niagara Escarpment, P1 (AgGt-313) meets the criteria for a Stage 3 Site Specific Assessment, as per Section 2.2, Standard 1ai(3) of the *Standards and Guidelines* (Government of Ontario, 2011) and retains cultural heritage value or **interest (‘CHVI’)** and was recommended for a Stage 3 site specific assessment.

The Stage 2 assessment of Findspot 1 resulted in the documentation of a single pre-contact Aboriginal artifact in the form of a fragmentary projectile point manufactured from Flint Ridge chert recovered during the pedestrian survey of the agricultural land in the southeastern quadrant of the Study Area, approximately 40m to the northwest of P1 (AgGt-313). No other artifacts were documented during the pedestrian survey in the vicinity of Findspot 1. Given the results of the Stage 2 assessment, Findspot 1 does not fulfill any of the criteria for a Stage 3 assessment listed in Section 2.2 of the *Standards and Guidelines* (Government of Ontario, 2011). The CHVI of Findspot 1 is judged to be sufficiently documented; therefore, no further archaeological assessment is recommended for Findspot 1.

The Stage 2 assessment of Findspot 2 (AgGt-323) resulted in the documentation of four pre-contact Aboriginal artifacts manufactured from Onondaga chert, recovered during the pedestrian survey of the agricultural land along the southwestern edge of the Study Area, from an area of roughly 7m by 4m approximately 162m northwest of P1 (AgGt-313). The artifacts are all chipping detritus including two secondary flakes, one tool thinning flake, and one piece of shatter. No other artifacts were documented during the pedestrian survey in the vicinity of Findspot 2 (AgGt-323). Given the results of the Stage 2 assessment, Findspot 2 (AgGt-323) does not fulfill any of the criteria for a Stage 3 assessment listed in Section 2.2 of the *Standards and Guidelines* (Government of Ontario, 2011). The CHVI of Findspot 2 (AgGt-323) is judged to be sufficiently documented; therefore, no further archaeological assessment is recommended for Findspot 2 (AgGt-323).

The Stage 2 assessment of Findspot 3 (AgGt-324) resulted in the documentation of four pre-contact Aboriginal artifacts, including one blade fragment, manufactured from Onondaga chert, recovered during the pedestrian survey of the agricultural land along the southeastern edge of the Study Area from an area roughly 3.3m by 2.6m approximately 99m north of P1 (AgGt-313). The remaining artifacts are all chipping detritus consisting of one secondary flake and two tool thinning flakes. No other artifacts were documented during the pedestrian survey in the vicinity of Findspot 3 (AgGt-324). Given the results of the Stage 2 assessment, Findspot 3 (AgGt-324) does not fulfill any of the criteria for a Stage 3 assessment listed in Section 2.2 of the *Standards*

*and Guidelines* (Government of Ontario, 2011). The CHVI of Findspot 3 (AgGt-324) is judged to be sufficiently documented; therefore, no further archaeological assessment is recommended for Findspot 3 (AgGt-324).

The Stage 3 archaeological assessment of P1 (AgGt-313) will be conducted according to Section 3.2 of the *Standards and Guidelines* (Government of Ontario, 2011). Typically, a Stage 3 assessment for sites documented during a pedestrian survey of ploughed agricultural land begins with a **controlled surface pickup ('CSP') across the Stage 2 limits** of site, conducted as per Section 3.2.1 of the *Standards and Guidelines* (Government of Ontario, 2011). The Stage 2 pedestrian survey, however, consisted of an intensive surface collection across the entire site limits within the agricultural fields; all artifacts were mapped digitally and collected for laboratory analysis. Thus, the conditions for a Stage 3 CSP were met during the Stage 2 assessment. Instead, the Stage 3 assessment of P1 (AgGt-313) will consist of test unit excavation only, conducted according to Section 3.2.2 of the *Standards and Guidelines* (Government of Ontario, 2011).

The following test unit strategy was formulated based on advice provided by the MCM (see the Supplementary Documentation for email correspondence). The Stage 3 assessment of P1 (AgGt-313) will consist of the hand excavation of one 1m square test units every 10m across the Stage 2 site limits in systematic levels and into the first five centimetres of subsoil, as per Table 3.1, Standard 3 of the *Standards and Guidelines* (Government of Ontario, 2011). Additional 1m test units, amounting to 40% of the grid total, will be placed in areas of interest within the site extent as per Table 3.1, Standard 4 of the *Standards and Guidelines* (Government of Ontario, 2011). Should areas of artifact concentration or features be discovered during the excavation of the initial Stage 3 grid and infill units, the grid will be reduced to 5m intervals, with 20% infill in those areas as per Table 3.1, Standards 1 and 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 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 a more detailed discussion regarding the results of the current Stage 1-2 assessment, including a complete set of recommendations, the reader should examine the complete report.*

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## Project Personnel

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## Acknowledgments

Generous contributions by Matt Vartanian of Mountainview Homes made this report possible.

## 1.0 Project Context

### 1.1 Development Context

Detritus Consulting Ltd. ('Detritus') was retained by Mountainview Homes, ('the Proponent') to conduct a Stage 1-2 archaeological assessment on part of Lot 236 in the Geographic Township of Thorold within the historical County of Welland, now Regional Municipality of Niagara, Ontario (Figure 1). This assessment was undertaken in advance of a proposed residential subdivision development (Figure 6) at a property on **Clare Avenue in Welland (the 'Assessment Property')**. The development will span the southern portion, approximately two-thirds, of the property on **Clare Avenue (the 'Study Area')**; Figure 5) given that the northern one-third contains an Environmental Conservation Area designated as Significant Woodlands ('ECA').

The 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* (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 of the Study Area was conducted during the pre-approval phase of the proposed development under archaeological consulting license P462 issued to Mr. Michael Pitul by the Ministry of Citizenship and Multiculturalism ('MCM') and adheres to the archaeological license report requirements under subsection 65 (1) of the *Ontario Heritage Act* (Government of Ontario, 1990b) and the MCM's *Standards and Guidelines for Consultant Archaeologists* ('Standards and Guidelines'; Government of Ontario, 2011).**

The purpose of a Stage 1 Background Study is to compile all available information about the known and potential archaeological heritage resources within the Study Area 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 1 assessment were:

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

To meet these objectives Detritus archaeologists employed the following research strategies:

- A review of relevant archaeological, historic and environmental literature pertaining to the Study Area;
- a review of the land use history, including pertinent historic maps; and
- an examination of the Ontario Archaeological Sites Database ('ASDB') to determine the presence of known archaeological sites in and around the Study Area.

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 assessment were:

- 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 land and conduct all required archaeological fieldwork activities, including the recovery of artifacts.

## 1.2 Historical Context

### 1.2.1 Post-Contact Aboriginal Resources

Prior to the arrival of European settlers, much of the central and southern Ontario was occupied by Iroquoian speaking linguistic groups that had united to form confederacies, including the Huron-Wendat, the Neutral (or Attawandaran), and the Petun in Ontario, as well as the Five Nations Iroquois Confederacy in Upper New York State (Warrick, 2013; Birch, 2010). Of these groups, the Huron-Wendat established themselves to the east of the Niagara escarpment and the Neutral, to the west (Warrick, 2000).

Throughout the middle of the 17<sup>th</sup> century, the Iroquois Confederacy sought to expand upon their territory and to monopolize the fur trade between the European markets and the tribes of the western Great Lakes region. A series of bloody conflicts followed known as the Beaver Wars or the French and Iroquois Wars, contested between the Iroquois Confederacy and the Algonkian speaking communities of the Great Lakes region. Many communities were destroyed including the Huron, Neutral, 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 (Heindereich, 1990).

At this same time, the Anishinaabeg Nation, an Algonkian-speaking community situated inland from the northern shore of Lake Huron, began to challenge the Haudenosaunee for dominance in the Lake Huron and Georgian Bay region in order to advance their own role in the fur trade (Gibson, 2006). The Algonkian-speaking groups that settled in the area bound by Lake Ontario, Lake Erie, and Lake Huron were referred to by the English as the Chippewas or Ojibwas. By 1680, the Ojibwa began expanding into the evacuated Huron-Wendat territory, and eventually into Southern Ontario. By 1701, the Haudenosaunee had been driven out of Ontario completely and were replaced by the Ojibwa (Gibson, 2006; Schmalz, 1991).

The late 17<sup>th</sup> and early 18<sup>th</sup> centuries also mark the arrival of an Ojibwa band known as the Mississaugas into Southern Ontario and, in particular, the watersheds of the lower Great Lakes. **‘The Mississaugas’ is the name that the Jesuits had used in 1840 for the Algonquin** community living near the Mississagi River on the northwestern shore of Lake Huron (Smith, 2022). The oral traditions of the Mississaugas, as recounted by Chief Robert Paudash and recorded in 1904, 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 between the two groups (Praxis Research Associates, n.d.).

From the beginning of the 18<sup>th</sup> century until the end of the Seven Years’ War in 1763, the Ojibwa nation, including the Mississaugas, experienced a golden age in trade holding no alliance with either the French or the British (Schmalz, 1991). At the end of the 17<sup>th</sup> **century, the Mississaugas’** settled permanently in Southern Ontario (Praxis Research Associates, n.d.). Around this same time, in 1722, the Five Nation Iroquois Confederacy adopted the Tuscarora in New York becoming the Six Nations (Pendergast, 1995).

The Study Area first entered the Euro-Canadian historical record on December 7<sup>th</sup>, 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, pp. 17-8

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, p. 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, 1879; Weaver, 1978; Tanner, 1987). Following the population decline 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, 2022).

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, p. 114). 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 Resources

The Study Area is located in the geographic Township of Thorold and the historical County of Welland, now the Regional Municipality of Niagara, Ontario (Figure 1).

**In 1763, the Treaty of Paris brought an end to the Seven Years’ War, contested between the British, the French, and their respective allies.** Under the Royal Proclamation of 1763, the large stretch of land from Labrador in the east, moving southeast 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 of Québec 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; 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 & 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, comprising Lincoln County, Haldimand County and other lands (Archives of Ontario, 2012-2015).

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 county takes its name from the Welland River, which runs through the centre of the county and was itself named by Simcoe after a stream in Lincolnshire, England. This county was home to the Niagara Falls as well as many of the earliest settled townships in Upper Canada (Middleton & Landon, 1927).

Thorold Township is one **of these early townships. It was settled by Butler's Rangers** and originally called Township Number 9 but was officially formed in 1788 to provide land for United Empire Loyalist refugees and disbanded soldiers following the American Revolutionary War. It was named in honour of Sir John Thorold, Member of Parliament in the government of Upper Canada (Thompson, 1898). The early settlements of the Township of Thorold included Beaverdams, St. Johns, and Decew Falls. These fell into decline after the opening of the first Welland Canal when the canal towns of Thorold, Port Robinson, and Allanburg began to prosper (Jackson, 1997).

**Port Robinson's history** is linked to that of the Welland Canal. When the First Welland Canal was opened in 1829, Port Robinson was the southern terminus. The small port was named for John Beverley Robinson, Chief Justice of Upper Canada. Much of the early rapid and growth of the village can be attributed to canal construction and specifically the work that went on to pass the **canal through the 'Deep Cut', a 20m high hill between Port Robinson and Allanburg that had to be cut through for the canal to continue.** Many of the labourers used for the project were based in Port Robinson while work continued from 1824-28 on this section of canal. Between 1843 and 1851 during construction of the Second Canal a company of Negro soldiers were encamped in Port Robinson to keep order among the **frequently feuding canal workers. The soldiers' mess was located beside St. Paul's Anglican Church in Port Robinson** (Detritus, 2002). Port Robinson went into decline after Welland became the administrative centre for the County and particularly after 1880 when shipyards were closed (Archaeological and Historic Sites Board of Ontario, 2019).

Within Lincoln County, the *Illustrated Historical Atlas of the Counties of Lincoln and Welland ('Historical Atlas')*, **demonstrates the extent to which Thorold Township had been settled by 1876** (Page, 1876; 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 and orchards are prevalent throughout the township, almost all of which front early roads and water

The current Study Area occupies a part of Lot 236 in Thorold Township. According to the *Historical Atlas*, by 1876, the Lot was divided equally north to south (Page, 1876). The western half of the lot, in which the Study Area lies, was owned by J.H.E. Page. The eastern half was owned by G.A. Both lots show a building and orchard fronting the road at the north end of the Lot, which is now known as Quaker Road. The road at the south end of Lot 236 is also now a major road, Woodlawn Road, and the road at the west edge of the Lot is now Clare Avenue. Lot 236 is near to the southwestern corner of Thorold township, and the Welland River is shown running north to south to the east of the Study Area. At some distance the early communities of

Port Robinson and Font Hill are visible to the east and north of the Study Area, and at a greater distance, beyond the Welland River, is the Welland Railroad.

Although significant and detailed landowner information is available on the current *Historical Atlas*, 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 & Head, 1984).

## 1.3 Archaeological Context

### 1.3.1 Property Description and Physical Setting

The Assessment Property is a rectangular parcel that lies to the east of Clare Avenue separated from it by a narrow strip of greenspace known as the Steve Bauer Trail. The Assessment Property measures 7.46ha and is bound to the west by the Steve Bauer Trail, to the east by ECA, to the north and south by residential properties on Quaker Road and Briarsdale Crescent, respectively, and at the northeast corner by Nouvel Horizon Elementary School (Figure 4).

According to Section 6.1.2.2.E of the *Official Plan* of the City of Welland, the northern one-third of the Assessment Property is designated as ECA in the form of Significant Woodlands greater than 2ha in size (City of Welland, 2019). As such, no development or site alteration are permitted within the ECA until an Environmental Impact Study has been completed (Niagara Region, 2021). See correspondence in Section 1.0, Subsection 1.1 to 1.3) of the Supplementary Documentation for an email from the Proponent; a copy of the *Official Plan* of the City of Welland (City of Welland, 2019); and a copy of the *Recommendation Report – Northwest Welland Secondary Plan (OPA 29) – City of Welland* (Niagara Region, 2021), including a map. As per Section 7.8.1 Standard 1e of the *Standards and Guidelines* (Government of Ontario 2011) a no-go letter has been signed by the Proponent, indicating no development is to occur within the unassessed portion of the Assessment Property designated as ECA in the form of Significant Woodlands (see Section 1.4 in the Supplementary Documentation). In addition, Section 6.1 of the *Official Plan* listing the constraints on the ECA portion of the property can also be found in Section 1.5 of the Supplementary Documentation.

The reduced Study Area measures 4.54ha and occupies the southern portion of the Assessment Property bound to the south by residential properties on Briarsdale Crescent, to the north by ECA, to the east by wooded land, and to the west by the Steve Bauer Trail that separates it from Clare Avenue. At the time of assessment, the Study Area was an empty agricultural field with no visible disturbances.

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 mid-19<sup>th</sup> century. Much of the region today continues to be used for agricultural purposes.

The Study Area is situated 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 & Putnam, 1984, p. 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 & Presant, 1989). The soil is suitable for corn and soybeans in rotation with cereal grains as well as alfalfa and clover (Huffman & 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 & Manville, 1987). In the early 19<sup>th</sup> century, Euro-Canadian settlers began to clear the forests for agricultural purposes.

Three individual sources of potable water lie to the north, east and west of the Study Area in the form of tributaries of the Welland Canal each at roughly 600m distance.

### 1.3.2 Pre-Contact Aboriginal Land Use

This portion of southern Ontario was 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, based on 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 MCM (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 13 kilometres (‘km’) 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 MCM will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

According to the ASDB, nine sites have been registered within 1km of the Study Area. These include two post-contact Euro-Canadian sites and seven pre-contact Aboriginal sites dating to the Early Woodland and Archaic periods. For further information see Table 2, below.

**Table 2: Registered Archaeological Sites within 1km**

<b>Borden Number</b>	<b>Site Name</b>	<b>Time Period</b>	<b>Affinity</b>	<b>Site Type</b>	<b>Current Development Review Status</b>
AgGt-57		Other	Aboriginal	Other—findspot	
AgGt-45		Woodland, Early	Aboriginal	findspot	
AgGt-44	Milburn	Archaic, Late	Aboriginal	Other—camp/campsite	
AgGt-36	Quaker Park	Archaic, Early	Aboriginal	Other—camp/campsite	
AgGt-287		Archaic, Late	Aboriginal	hunting loss	No Further CHVI
AgGt-286		Archaic, Middle	Aboriginal	hunting loss	No Further CHVI
AgGt-285		Pre-Contact	Aboriginal	findspot	No Further CHVI
AgGt-284		Post-Contact	Euro-Canadian	farmstead	Further CHVI
AgGt-269		Post-Contact	Euro-Canadian	residential	No Further CHVI

The Study Area was part of a much larger parcel that was subject to a previous Stage 1 assessment, conducted ASI in 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 (ASI, 2018).*

The Stage 1 investigation area measured 189 hectares (“ha”) 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 3). **Based on the results of ASI’s assessment, approximately 99%** (187.4ha) of the Stage 1 assessment area exhibited archaeological potential. This potential extended across the entire current Study Area. ASI recommended that any future developments within the Study Area be preceded by a Stage 2 field assessment.

**To the best of Detritus’ knowledge, no additional assessments have been conducted on adjacent properties, nor have sites been registered within 50m of the Study Area.**

### 1.3.4 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present on a subject property. Detritus applied archaeological potential criteria commonly used by the MCM (Government of Ontario, 2011) to determine areas of archaeological potential within the Study Area. 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 sites locations and types to varying degrees. The MCM (Government of Ontario, 2011) categorizes water sources 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 discussed above, the sources of potable water lie to the north, east and west of the Study Area in the form of tributaries of the Welland Canal each at roughly 600m distance.

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 was discussed earlier, the soils within this region are imperfectly drained, but suitable for pre-contact and post contact Aboriginal agricultural. Given this, the distance to potable water and the length of occupation of Thorold Township prior to the arrival of Euro-Canadian settlers, the pre-contact Aboriginal archaeological potential, as evidenced by the seven pre-contact sites within 1km, of the Study Area 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 *Historical Atlas* (Page, 1876; Figure 2) map of Thorold Township has revealed that the Study Area in close proximity to historic roads, the early communities of Port Robinson and Fonthill, the Welland River, and the Welland Railroad. Considering also the presence of two Euro-Canadian sites within 1km of the Study Area, the potential for post-contact Euro-Canadian archaeological resources is judged to be moderate to high.

Given that no disturbance areas were identified, Detritus determined that the entirety of the Study Area, including the agricultural field, demonstrated the potential for the recovery of pre-contact Aboriginal, post-contact Aboriginal, and Euro-Canadian archaeological resources, and were recommended for Stage 2 field assessment.

## 2.0 Field Methods

The Stage 2 assessment of the Study Area was conducted on July 4<sup>th</sup>, 2022, under archaeological consulting license P462 issued to Mr. Michael Pitul. The Study Area was surveyed by the Proponent prior to assessment, to help identify any limits that were not clearly visible, such as along the wooded areas to the north, east, and west of the Study Area.

During the Stage 2 assessment, the weather was mixed cloud with a temperature of 30°C. Assessment conditions were excellent; at no time were the field, weather, or lighting conditions detrimental to the recovery of archaeological material. Photos 1 to 6 demonstrate the land conditions at the time of the survey throughout the Study Area. Figure 5 provides an illustration of the Stage 2 assessment methods, as well as photograph locations and directions.

Except for a small strip of ECA at the northeast corner, the entire Study Area comprised an agricultural field, which was ploughed and allowed to weather as per Section 2.1.1, Standards 2 and 3 of the *Standards and Guidelines* (Government of Ontario, 2011; Photos 1 to 6). The ploughing was deep enough to provide total topsoil exposure, and to provide 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 area was subject to pedestrian survey at five-metre intervals in accordance with Section 2.1.1, Standard 6 of the *Standards and Guidelines* (Government of Ontario, 2011). 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* (Government of Ontario, 2011). 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 identification of a single pre-contact Aboriginal archaeological site, registered as P1 (AgGt-313) and three pre-contact Aboriginal findspots, identified in the field as Findspot 1 to 3.

The Stage 2 assessment of P1 (AgGt-313) resulted in the documentation of 14 pre-contact Aboriginal artifacts from 14 CSP locations scattered across an area roughly 14m by 7m in the southeastern quadrant of the agricultural field approximately 16m from the eastern edge of the Study Area. Findspot 1 comprises a single pre-contact Aboriginal artifact from an isolated findspot in the southeastern quadrant of the Study Area, approximately 40m to the northwest of P1 (AgGt-313). Findspot 3 (AgGt-324) produced four pre-contact Aboriginal artifacts recovered along the southwestern edge of the Study Area, from an area of roughly 7m by 4m approximately 162m northwest of P1 (AgGt-313). Findspot 3 (AgGt-324) also produced four pre-contact Aboriginal artifacts but recovered along the southeastern edge of the Study Area from an area roughly 3.3m by 2.6m approximately 99m north of P1 (AgGt-313).

Despite an intensified pedestrian survey of all agricultural lands within 20m of the artifacts, no other archaeological materials were identified. All of the artifacts recovered from P1 (AgGt-313), Findspot 1, 2 and 3 were digitally mapped and collected for laboratory analysis. A UTM reading was taken for each artifact, in addition to a fixed reference landmark as per Section 2.1, Standard 4 of the *Standards and Guidelines* (Government of Ontario, 2011), see section 4.0 in the Supplementary Documentation. P1 (AgGt-313) was registered with the MCM as per Section 7.12 of the *Standards and Guidelines* (Government of Ontario, 2011).



### 3.0 Record of Finds

The Stage 2 archaeological assessment was conducted employing the methods described in Section 2.0 and resulted in the identification of one pre-contact Aboriginal site P1 (AgGt-313) and three pre-contact Aboriginal findspots; Findspots 1, 2, and 3. An inventory of the documentary record generated by fieldwork is provided in Table 3, below. Maps indicating the exact site location of P1 (AgGt-313) and Findspots 1, 2, and 3 as well as all UTM coordinates recorded during the assessment are included in the Supplementary Documentation to this report. A description of the locations and the recovered artifacts are provided in Sections 3.2 and 3.3.

**Table 3: Inventory of Document Record**

<b>Document Type</b>	<b>Current Location of Document Type</b>	<b>Additional Comments</b>
1 Page of Field Notes	Detritus' office	Stored digitally in project file
1 Map provided by the Proponent	Detritus' office	Stored digitally in project file
1 Field Map	Detritus' office	Stored digitally in project file
17 Digital 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 His Majesty the King in right of the Province of Ontario or another suitable public institution acceptable to the MCM and the Study Area's owners.

### 3.1 Cultural Material

As was discussed above, one pre-contact Aboriginal site and three findspots were identified within the Study Area. Photographs of the artifacts recovered from the Stage 2 assessment are depicted in Section 9.2 of this report. A sample of artifacts are depicted in Section 9.2 of this report.

The majority of the artifacts collected during the Stage 2 assessment were manufactured from Onondaga chert and one artifact, a projectile point fragment, was manufactured from Flint Ridge chert. Chert type identifications were accomplished visually using reference materials located in the Detritus office.

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

Flint Ridge Chalcedony is a higher quality Flint Ridge deposit of bluish-grey chert that is semi-translucent and vitreous. It occurs as a bedded chert within the parent limestone and is irregularly distributed throughout the Flint Ridge formation of east central Ohio along the Flint Ridge in Licking, Muskingum, and Perry Counties (DeRegacourt & Georgiady, 1998). It appears this chert was highly prized by the Aboriginal inhabitants of Ohio and was widely traded and utilized, as evidenced by Flint Ridge chalcedony tools found as widespread as Indiana, northern Kentucky, Ohio, Michigan, southern Ontario, northern west Virginia and western Pennsylvania (DeRegacourt & Georgiady, 1998).

Furthermore, all pieces of chipping detritus were subject to morphological analysis following the classification scheme described by Lennox, Dodd and Murphy for the Wiacek Site (Lennox, Dodd, & Murphy, 1986) and expanded upon by Fisher for the Adder Orchard site (Fisher, 1997). The flake types that were identified during the analysis of the current Stage 2 assemblage include secondary, shatter, and thinning flakes.

Primary and secondary flakes, along with cortical removal flakes, are a product of percussion flaking undertaken during the initial reduction phases of raw material into blanks, bifaces and preforms. These early-stage reduction flakes tend to exhibit minimal dorsal flake scarring, and are often characterized by the presence of cortex, or the original unflaked chert exterior, on their dorsal surfaces and proximal ends. For cortical removal flakes, over half of the dorsal surface comprises cortex; for primary flakes, less than half. Secondary flakes, meanwhile, may not contain any cortex. Thinning flakes are produced during the latter stages of lithic reduction, when blanks, bifaces, and preforms are shaped into projectile points and formal tools. They are the result of pressure flaking, where the maker uses a softer material such as antler, wood or bone to apply direct pressure onto a specific part of the tool. Pressure flaking generally produces smaller, thinner flakes than does percussion flaking. Thinning flakes also exhibit more flake scars on their dorsal surface than do primary or secondary flakes. Fragmentary flakes are flakes that may have some identifiable flake characteristic but cannot be classified with certainty into a specific category.

Chipping detritus is the waste product from the production of stone tools and is the most frequently recovered artifact on pre-contact Aboriginal sites in southern Ontario. Chipping detritus has a low significance and interpretive value when it is not associated with any diagnostic material, therefore they cannot be used to determine the cultural affiliation or time period of the occupation of a site.

## 3.2 P1 (AgGt-313)

The Stage 2 assessment of P1 (AgGt-313) resulted in the documentation of 14 pre-contact Aboriginal artifacts from 14 CSP locations scattered across an area roughly 14m by 7m in the southeastern quadrant of the agricultural field approximately 16m from the eastern edge of the Study Area. All of the artifacts recovered from the site were manufactured from Onondaga chert and were identified as pieces of chipping detritus (Cat#s 10 to 23).

The results of the morphological analysis of the chipping detritus recovered from P1 (AgGt-313) are detailed in Table 4.

**Table 4: Flake Analysis for Site AgGt-313**

Chert type	Secondary		Shatter		Tool Thinning		Total	
	n	%	n	%	n	%	n	%
Onondaga	9	64.29	3	21.43	2	14.29	14	100

According to the morphological analysis presented above, the flake assemblage from P1 (AgGt-313) featured primarily secondary flakes (n=9; 64.29%) with lesser amounts of shatter flakes (n=3; 21.43%). In addition, two pieces of tool thinning flakes (n=2; 14.29%) were also recovered. No other artifacts were documented during the pedestrian survey in the vicinity of P1 (AgGt-313). This variety of flake types suggests late-stage reduction for the production and maintenance of formal tools and projectile points.

### 3.2.1 Artifact Catalogue

A complete catalogue of the Stage 2 artifacts recovered from P1 (AgGt-313) is provided in Table 5 below.

**Table 5: P1 (AgGt-313) Stage 2 Artifact Catalogue**

Cat#	Surface Find #	Artifact	Frequency	Chert Type	Morphology
10	9	Chipping Detritus	1	Onondaga	shatter
11	10	Chipping Detritus	1	Onondaga	secondary
12	11	Chipping Detritus	1	Onondaga	secondary
13	12	Chipping Detritus	1	Onondaga	shatter

Cat#	Surface Find #	Artifact	Frequency	Chert Type	Morphology
14	13	Chipping Detritus	1	Onondaga	secondary
15	14	Chipping Detritus	1	Onondaga	secondary
16	15	Chipping Detritus	1	Onondaga	secondary
17	16	Chipping Detritus	1	Onondaga	tool thinning
18	17	Chipping Detritus	1	Onondaga	secondary
19	18	Chipping Detritus	1	Onondaga	shatter
20	19	Chipping Detritus	1	Onondaga	secondary
21	20	Chipping Detritus	1	Onondaga	secondary
22	21	Chipping Detritus	1	Onondaga	secondary
23	22	Chipping Detritus	1	Onondaga	tool thinning

### 3.3 Findspot 1

Findspot 1 comprises a single isolated projectile point fragment manufactured from Flint Ridge chert recovered during the pedestrian survey of the agricultural land in the southeastern quadrant of the Study Area, approximately 40m to the northwest of P1 (AGgt-313).

The results of the morphological analysis of the point fragment are detailed in Table 6 below.

**Table 6: Findspot 1 Projectile Point Analysis**

Cat#	Artifact	Chert Type	Comments
1	Point Fragment	Flint Ridge	L=22.5mm, W=17.13mm, Thick=5.28mm, Haft=10.78

The point is fragmentary but preserves an expanding stem and lower portion of a slanting shoulder. Further identification is not possible due to its poor preservation. It measures 22.5 millimetre ('mm') in length, 17.13mm in width and has a thickness of 5.28mm (Cat#1; Plate 1). No other artifacts were documented during the pedestrian survey in the vicinity of Findspot 1. Given the isolated nature of the artifact, it is difficult to draw any useful conclusions regarding site function.

#### 3.3.1 Artifact Catalogue

A complete catalogue of the Stage 2 artifacts recovered from Findspot 1 is provided in Table 7 below.

**Table 7: Findspot 1 Stage 2 Artifact Catalogue**

Cat #	Surface Find #	Artifact	Frequency	Chert Type	Comments
1	PP1	Point Fragment	1	Flint Ridge	Fragment; L=22.5mm, W=17.13mm, Thick=5.28mm, Haft=10.78

### 3.4 Findspot 2 (AgGt-323)

Findspot 2 (AgGt-323) comprises four surface finds recovered during the pedestrian survey of the agricultural land along the southwestern edge of the Study Area, from an area of roughly 7m by 4m approximately 162m northwest of P1 (AgGt-313). All of the artifacts were manufactured from Onondaga chert and all were identified as pieces of chipping detritus. (Cat#s 6 to 9).

The results of the morphological analysis of the chipping detritus recovered from Findspot 2 (AgGt-323) are detailed in Table 8 below.

**Table 8: Flake Analysis for Findspot 2 (AgGt-323)**

Chert type	Secondary		Shatter		Tool Thinning		Total	
	n	%	n	%	n	%	n	%
Onondaga	2	50	1	25	1	25	100	4

According to the morphological analysis presented above, the flake assemblage from Findspot 2 (AgGt-323) included two secondary flakes (n=2; 50%), one shatter flake (n=1; 25%), and one tool thinning flake (n=1; 25%). No other artifacts were documented during the pedestrian survey in the vicinity of Findspot 2 (AgGt-323). Given the isolated nature of the artifacts, it is difficult to draw any useful conclusions regarding site function.

### 3.4.1 Artifact Catalogue

A complete catalogue of the Stage 2 artifacts recovered from Findspot 2 (AgGt-323) is provided in Table 9 below.

**Table 9: Findspot 2 (AgGt-323) Stage 2 Artifact Catalogue**

Cat#	Surface Find #	Artifact	Frequency	Chert Type	Morphology
2	1	Chipping Detritus	1	Onondaga	secondary
3	2	Chipping Detritus	1	Onondaga	tool thinning
4	3	Chipping Detritus	1	Onondaga	shatter
5	4	Chipping Detritus	1	Onondaga	secondary

## 3.5 Findspot 3 (AgGt-324)

Findspot 3 (AgGt-324) comprises four surface finds recovered during the pedestrian survey of the agricultural land along the southeastern edge of the Study Area from an area roughly 3.3m by 2.6m approximately 99m north of P1 (AgGt-313). The assemblage comprised three pieces of chipping detritus and one blade; all manufactured from Onondaga chert.

According to the morphological analysis, the flake assemblage from Findspot 3 (AgGt-324) included two tool thinning flakes (n=2; 66.7%) and one secondary flake (n=1; 33.3%). The blade fragment measures 30.74 mm in length, 13.4 mm in width and has a thickness of 4.20mm (Cat #6; Plate 5). No other artifacts were documented during thea pedestrian survey in the vicinity of Findspot 3 (AgGt-324). Given the isolated nature of the artifacts, it is difficult to draw any useful conclusions regarding site function.

### 3.5.1 Artifact Catalogue

A complete catalogue of the Stage 2 artifacts recovered from Findspot 3 (AgGt-324) is provided in Table 10 below.

**Table 10: Findspot 3 (AgGt-324) Stage 2 Artifact Catalogue**

Cat #	Surface Find #	Artifact	Frequency	Chert Type	Morphology	Comments
6	CSP5	Blade	1	Onondaga	-	L=30.74mm, W=13.4mm, TH=4.20mm
7	CSP6	Chipping Detritus	1	Onondaga	tool thinning	
8	CSP7	Chipping Detritus	1	Onondaga	secondary	
9	CSP8	Chipping Detritus	1	Onondaga	tool thinning	

## 4.0 Analysis and Conclusions

Detritus was retained by the Proponent to conduct a Stage 1-2 archaeological assessment on part of Lot 236 in the Geographic Township of Thorold within the historical County of Welland, now Regional Municipality of Niagara, Ontario (Figure 1). This assessment was undertaken in advance of a proposed residential subdivision development (Figure 6) at a property on Clare Avenue in **Welland (the 'Assessment Property')**. **The development will span the southern portion,** approximately two-thirds, of the property on **Clare Avenue (the 'Study Area');** (Figure 5) given that the northern one-third contains an ECA designated as Significant Woodlands.

The Stage 1 background research indicated that the Study Area exhibited moderate to high potential for the identification and recovery of archaeological resources. As such, a Stage 2 field assessment was recommended for all the agricultural land, within the Study Area.

The Stage 2 assessment took place on July 4<sup>th</sup> 2022. The agricultural land was accessible for ploughing, and was assessed using a typical pedestrian survey at five-metre intervals. This investigation resulted in the identification and documentation of a single pre-contact Aboriginal site, registered with the MCM as P1 (AgGt-313) and three pre-contact Aboriginal findspots, identified in the field as Findspot 1 to 3, one of which was registered as Findspot 1 (Tile 4 of the Supplementary Documentation).

The Stage 2 assessment of P1 (AgGt-313) resulted in the documentation of 14 pre-contact Aboriginal artifacts from 14 CSP locations scattered an area roughly 14m by 7m in the southeastern quadrant of the agricultural field approximately 16m from the eastern edge of the Study Area. All of the artifacts recovered from the site were manufactured from Onondaga chert and were identified as pieces of chipping detritus (n=14). Morphological analysis of the chert flakes suggests late-stage reduction for the production and maintenance of formal tools and projectile points.

Based on the results of the Stage 2 investigation, P1 (AgGt-313) has been interpreted as a small activity area by late stages of lithic reduction activities.

The Stage 2 assessment of Findspot 1 resulted in the documentation of a single pre-contact Aboriginal artifact in the form of a projectile point fragment manufactured from Flint Ridge chert recovered during the pedestrian survey of the agricultural land in the southeastern quadrant of the Study Area, approximately 40m to the northwest of P1 (AgGt-313). No other artifacts were documented during the pedestrian survey in the vicinity of Findspot 1.

The Stage 2 assessment of Findspot 2 (AgGt-323) resulted in the documentation of four pre-contact Aboriginal artifacts manufactured from Onondaga chert, recovered during the pedestrian survey of the agricultural land along the southwestern edge of the Study Area, from an area of roughly 7m by 4m approximately 162m northwest of P1 (AgGt-313). The artifacts were identified as chipping detritus including two secondary flakes, one shatter flake and one tool thinning flake. No other artifacts were documented during the pedestrian survey in the vicinity of Findspot 2 (AgGt-323).

The Stage 2 assessment of Findspot 3 (AgGt-324) resulted in the documentation of four pre-contact-Aboriginal artifacts, including one blade fragment, manufactured from Onondaga chert, recovered during the pedestrian survey of the agricultural land along the southeastern edge of the Study Area from an area roughly 3.3m by 2.6m approximately 99m north of P1 (AgGt-313). The remaining artifacts were identified as chipping detritus including one secondary flake and two tool thinning flakes. No other artifacts were documented during the pedestrian survey in the vicinity of Findspot 3 (AgGt-324).

#### **4.1 Preliminary Indication of Site Possibly Requiring Stage 4 Archaeological Mitigation**

As is discussed below in Section 5.0, P1 (AgGt-313) retains CHVI and is recommended for Stage 3 assessment. A preliminary indication of whether the site could be eventually recommended for Stage 4 archaeological mitigation is required under Section 7.8.3 Standard 2c of the *Standards and Guidelines* (Government of Ontario, 2011). No firm recommendation for, or against, Stage 4 archaeological mitigation will be made until the forthcoming Stage 3 archaeological assessments have been conducted. Given that P1 (AgGt-313) consists of a diffuse scatter of pre-contact Aboriginal artifacts, it is clear that a Stage 4 archaeological mitigation will be recommended for this site.

## 5.0 Recommendations

Given the presence of at least ten non-diagnostic pre-contact Aboriginal artifacts in a 10m by 10m pedestrian survey area within an area on or west of the Niagara Escarpment, P1 (AgGt-313) meets the criteria for a Stage 3 Site Specific Assessment, as per Section 2.2, Standard 1ai(3) of the *Standards and Guidelines* (Government of Ontario, 2011) and **retains cultural heritage value or interest ('CHVI')**.

The Stage 3 archaeological assessment of P1 (AgGt-313) will be conducted according to 3.2 of the *Standards and Guidelines* (Government of Ontario, 2011). Typically, a Stage 3 assessment for sites documented during a pedestrian survey of ploughed agricultural land begins with a **controlled surface pickup ('CSP') across the Stage 2 limits of site, conducted as per Section 3.2.1 of the *Standards and Guidelines* (Government of Ontario 2011)**. The Stage 2 pedestrian survey, however, consisted of an intensive surface collection across the entire site limits within the agricultural fields; all artifacts were mapped digitally and collected for laboratory analysis. Thus, the conditions for a Stage 3 CSP were met during the Stage 2 assessment. Instead, the Stage 3 assessment of P1 (AgGt-313) will consist of test unit excavation only, conducted according to Section 3.2.2 of the *Standards and Guidelines* (Government of Ontario, 2011).

The following test unit strategy was formulated based on advice provided by the MCM (see the Supplementary Documentation for email correspondence). The Stage 3 assessment of P1 (AgGt-313) will consist of the hand excavation of one 1m square test units every 10m across the Stage 2 site limits in systematic levels and into the first 5cm of subsoil, as per Table 3.1, Standard 3 of the *Standards and Guidelines* (Government of Ontario, 2011). Additional 1m test units, amounting to 40% of the grid total, will be placed in areas of interest within the site extent as per Table 3.1, Standard 4 of the *Standards and Guidelines* (Government of Ontario, 2011). Should areas of artifact concentration or features be discovered during the excavation of the initial Stage 3 grid and infill units, the grid will be reduced to 5m intervals, with 20% infill in those areas as per Table 3.1, Standards 1 and 2 of the *Standards and Guidelines* (Government of Ontario, 2011). All excavated soil will be screened through 6mm mesh; all recovered artifacts will be recorded by their corresponding 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.

Given the results of the Stage 2 assessment, Findspots 1, 2, and 3 do not fulfill any of the criteria for a Stage 3 assessment listed in Section 2.2 of the *Standards and Guidelines* (Government of Ontario, 2011). The CHVI of Findspots 1, 2, and 3 are judged to be sufficiently documented; therefore, no further archaeological assessment is recommended for Findspots 1, 2, or 3.

## 6.0 Advice on Compliance with Legislation

This report is submitted to the Minister of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c O.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Citizenship and Multiculturalism, a letter will be issued by the ministry stating that there are no further concerns 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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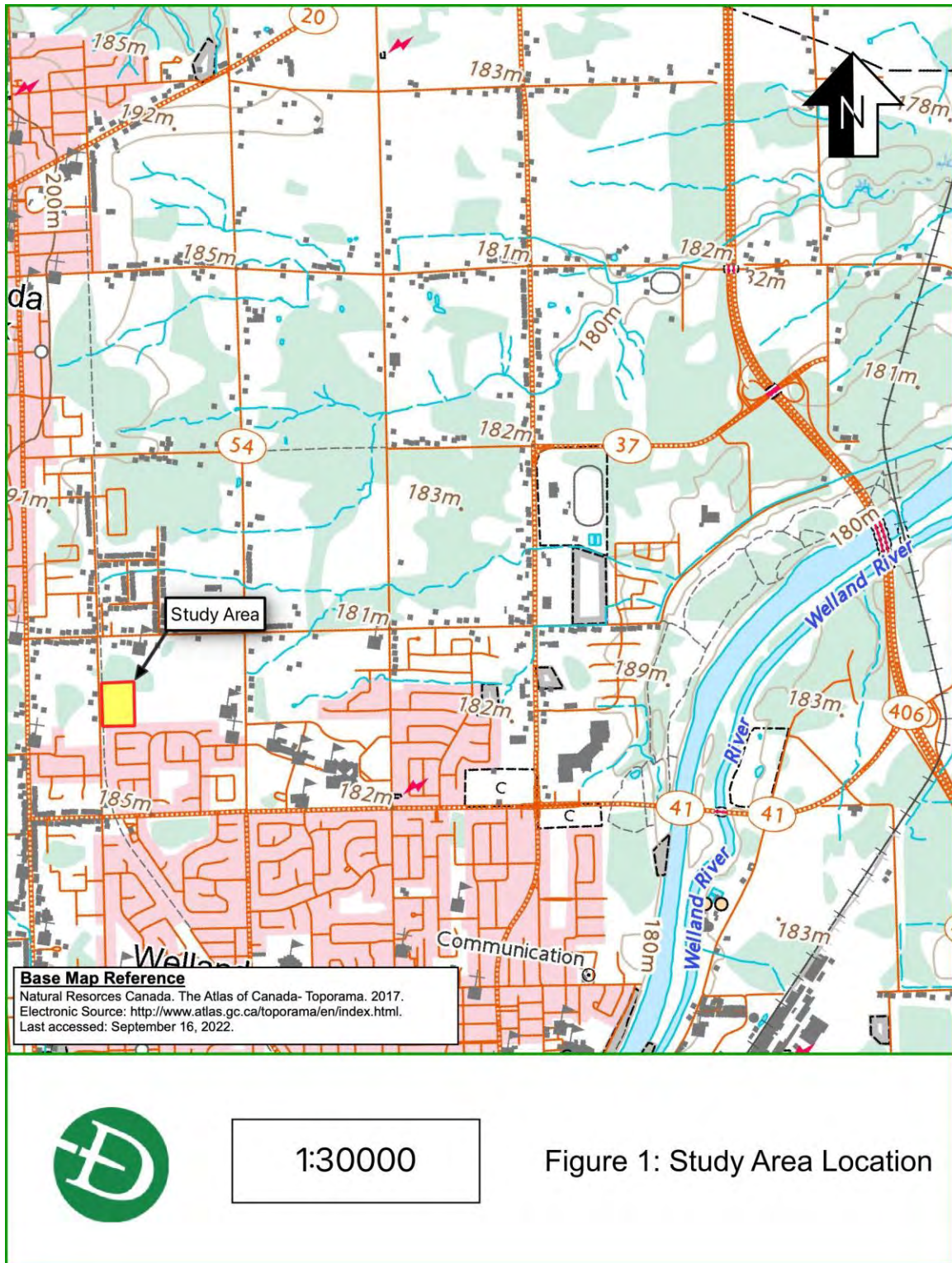
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## 8.0 Maps

Figure 1: Study Area Location Map





**Figure 2: Historic Map Showing Study Area Location**

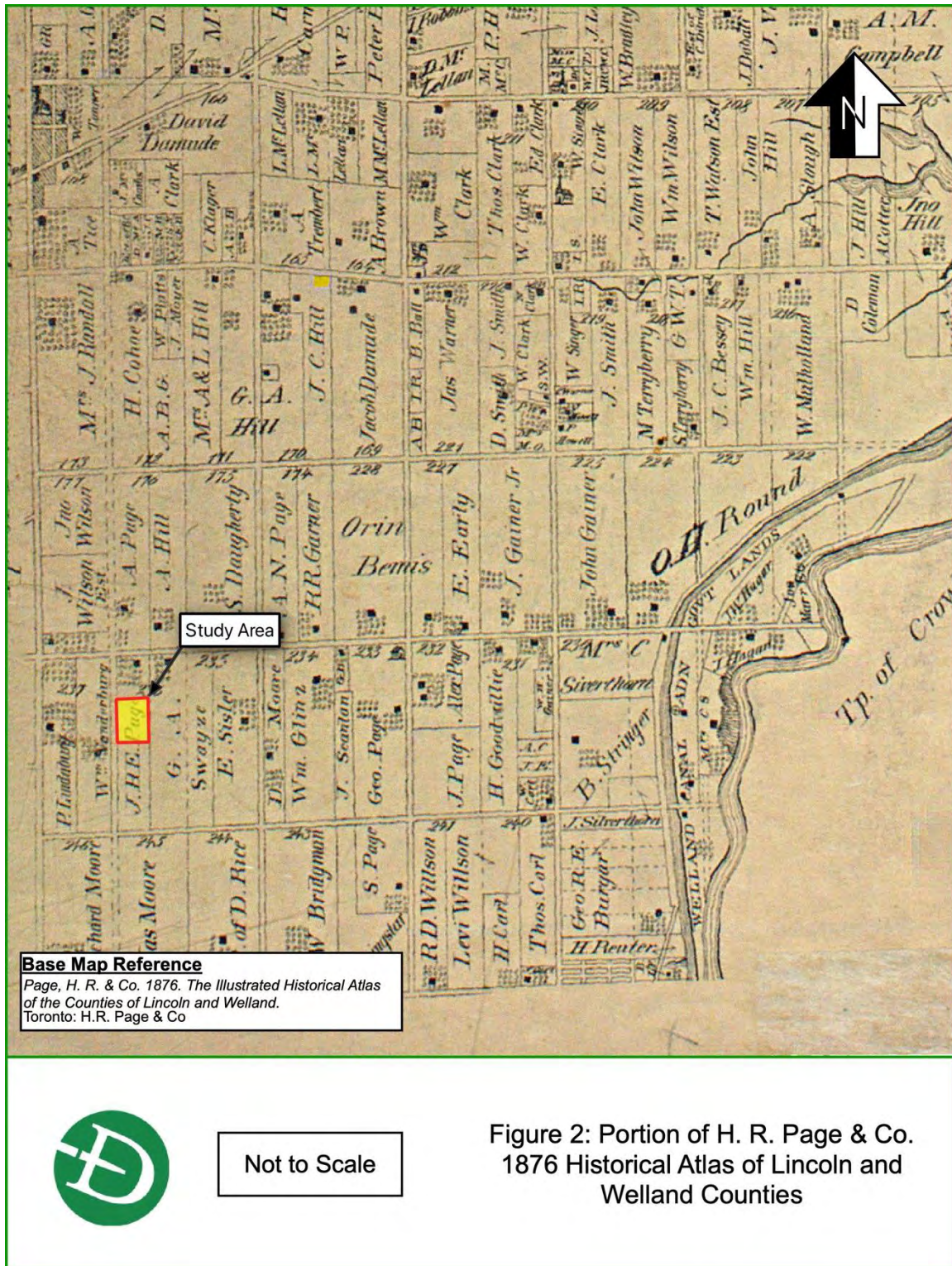




Figure 3: Archaeological Potential of Study Area

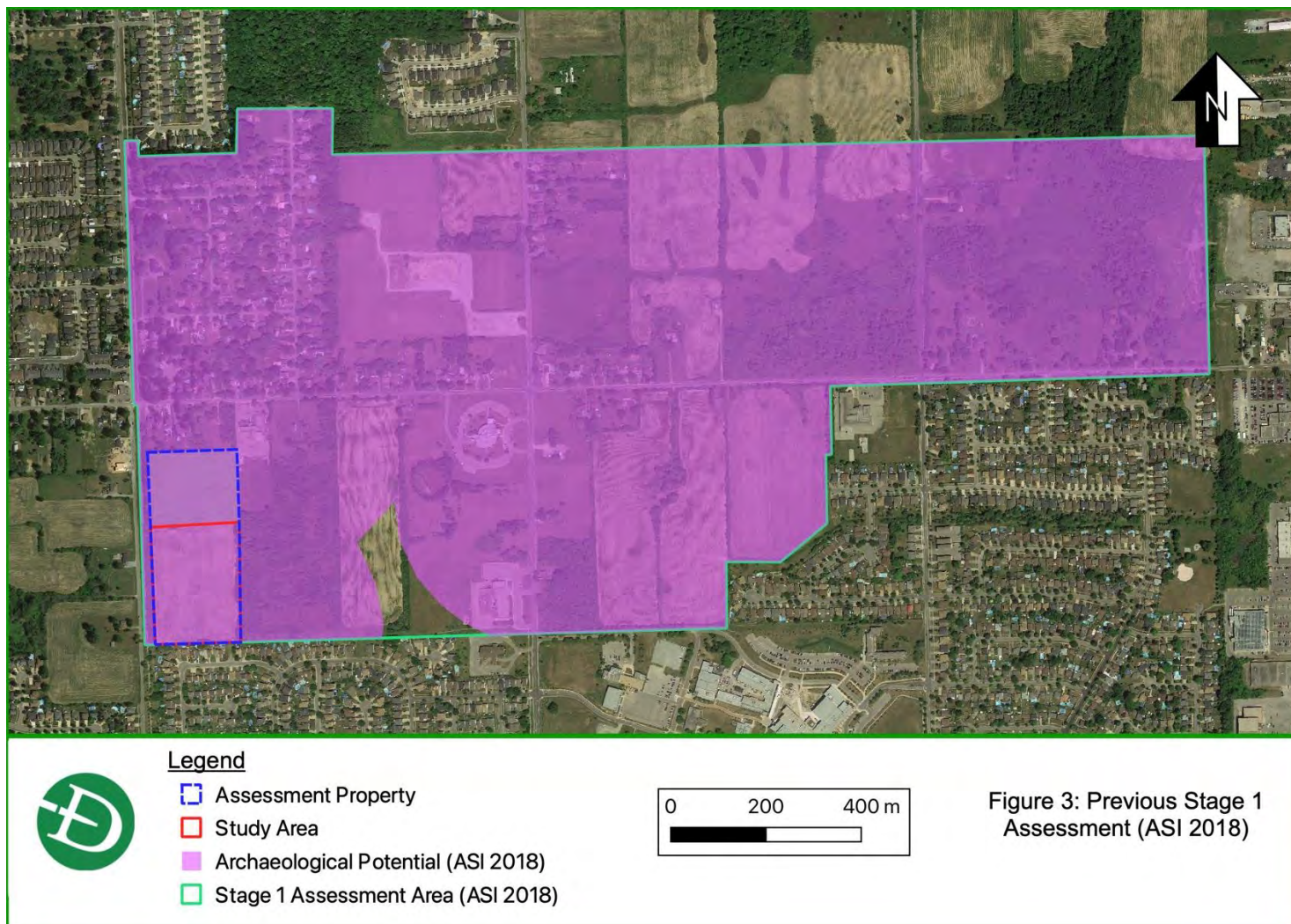




Figure 4: Map of the Assessment Property and Scoped Study Area





Figure 5: Stage 2 Field Methods Map

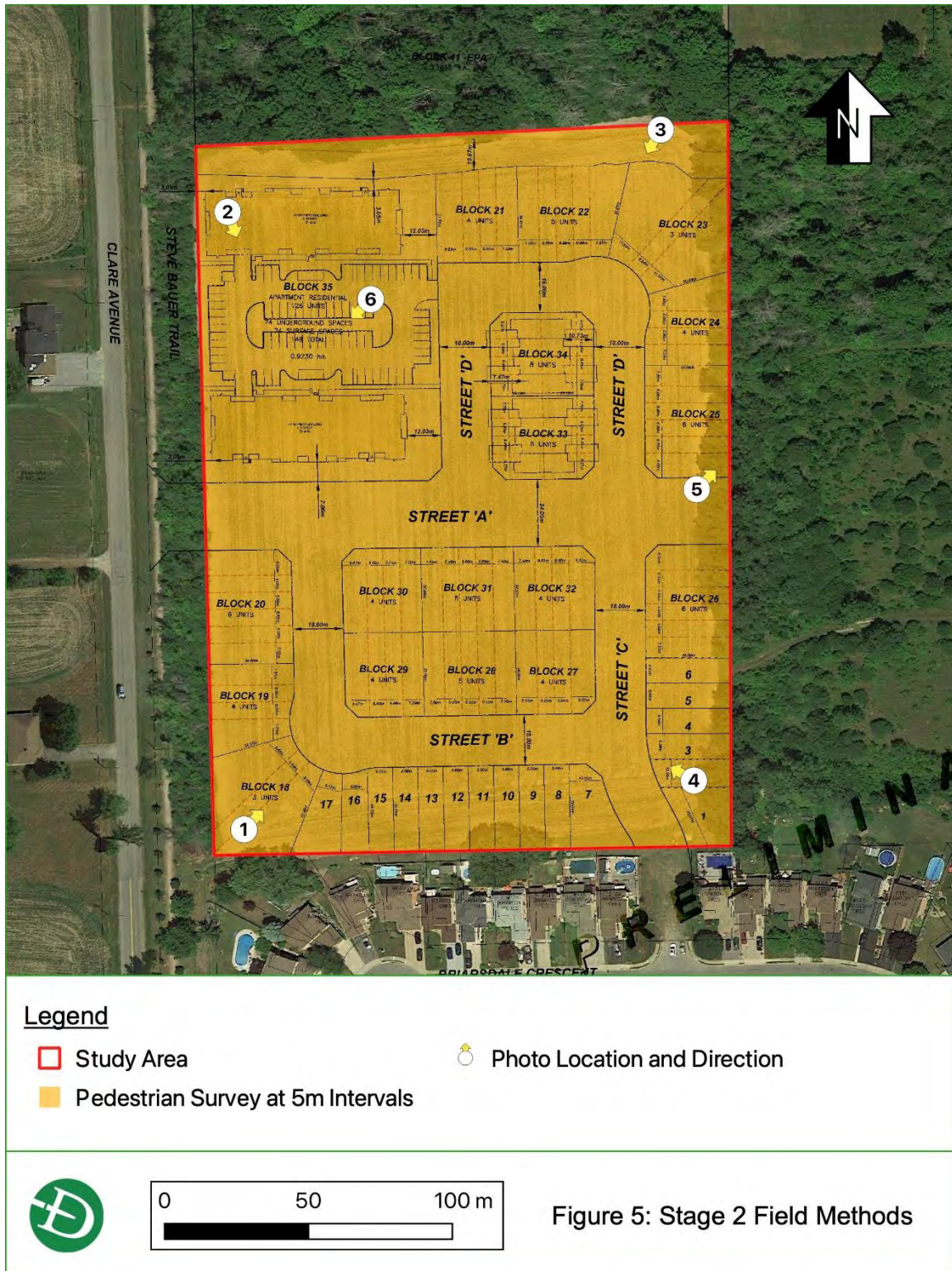
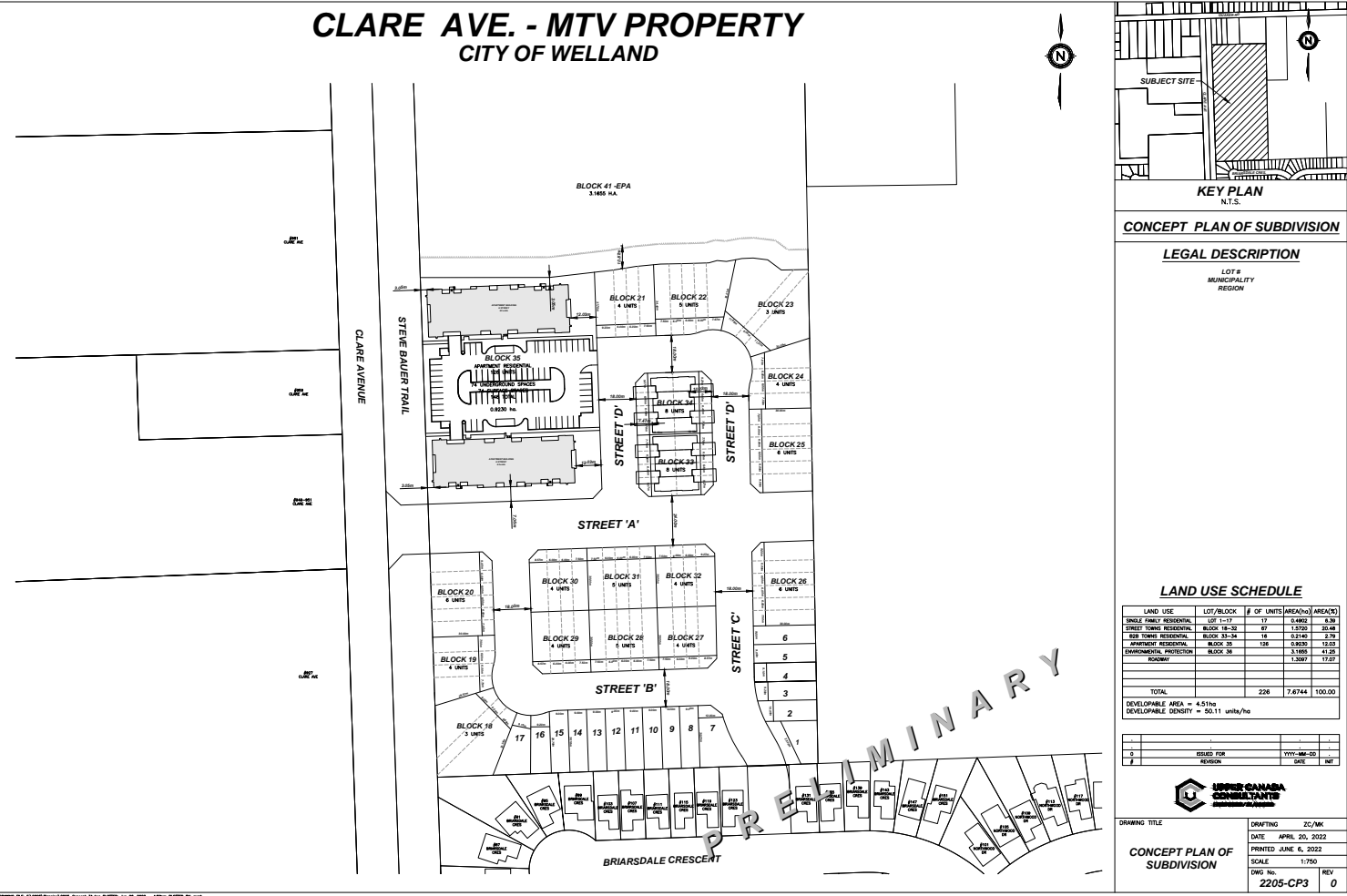




Figure 6: Development Plan



## 9.0 Images

### 9.1 Field Photos

**Photo 1: Ploughed field, Pedestrian  
Surveyed at a 5m interval, from southwest  
corner looking northeast**



**Photo 2: Ploughed field, Pedestrian  
Surveyed at a 5m interval, from northwest  
corner looking southeast**



**Photo 3: Ploughed field, Pedestrian  
Surveyed at a 5m interval, from northeast  
corner looking southwest**



**Photo 4: Ploughed field, Pedestrian  
Surveyed at a 5m interval, from southeast  
corner looking northwest**



**Photo 5: Ploughed field, Pedestrian  
Surveyed at a 5m interval, work photo  
looking northeast**

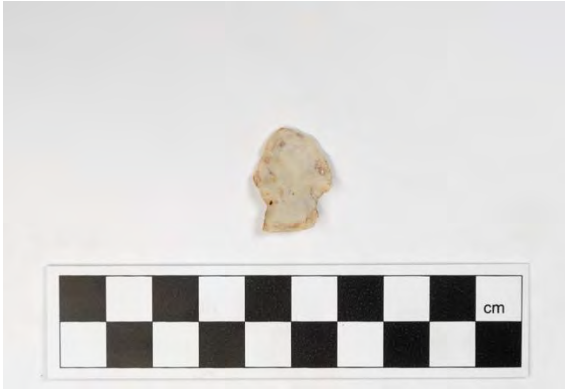


**Photo 6: Ploughed field, Pedestrian  
Surveyed at a 5m interval, work photo  
looking southwest**

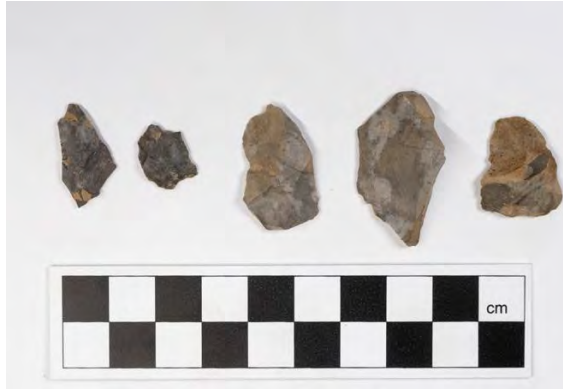


## 9.2 Artifacts

**Plate 1: Fragmentary projectile point of Flint Ridge chert, Cat #1 from Findspot 1**



**Plate 2: Chipping Detritus (left to right), Cat #s 2, 5 from Findspot 2 (AgGt-323); Cat# 11, 20, 22 from P1 (AgGt-313)**



**Plate 3: Thinning flakes (left to right), Cat # 3 from Findspot 2 (AgGt-323); Cat# 7, 9 from Findspot 3 (AgGt-324); Cat# 17 from P1 (AgGt-313)**



**Plate 4: Chipping Detritus (left to right), Cat # 4 from Findspot 2 (AgGt-323); Cat# 10, 12, 18 from P1 (AgGt-313)**



**Plate 5: Blade fragment, Cat # 6 from Findspot 3 (AgGt-324)**

