Stage 4 Mitigation of Impacts
AgGt-260

Part of Lot 67 Uppers Lane, Including Part of Road Allowance Between Lots 67 and 68,
City of Thorold,
Regional Municipality of Niagara, Ontario

Submitted to:
FARZ Holdings Inc. c/o
LARKIN+ Land Use Planners Inc.
849 Gorham Street
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and

Ontario's Ministry of Tourism, Culture and Sport

Submitted by:

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PIF Number: P389-0383-2018
CP Number: 2018-154

ORIGINAL REPORT

October 29, 2018

Executive Summary

Detritus Consulting Ltd. ('Detritus') was retained by FARZ Holdings Inc. c/o LARKIN+ Land Use Planners Inc. ('the Proponent') to conduct a Stage 4 mitigation of impacts for archaeological site AgGt-260, located on part of Lot 67 Uppers Lane, including part of the Road Allowance Between Lots 67 and 68, City of Thorold, Regional Municipality of Niagara, Ontario ('Study Area'; Figure 1).

The current investigation was triggered by the Provincial Policy Statement ('PPS') that is informed by the *Ontario 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 4 mitigation was conducted for AgGt-260 during the pre-approval phase of the development under archaeological consulting license P389, issued to Dr. Walter McCall by the Ministry of Tourism, Culture and Sport ('MTCS') and adheres to the archaeological license report requirements under subsection 65 (1) of the *Ontario Heritage Act* (Government of Ontario 1990b) and the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* ('*Standards and Guidelines*'; Government of Ontario 2011a).

AgGt-260 was identified during the Stage 2 pedestrian survey of the Study Area comprising entirely of agricultural field. This assessment was conducted by A.M. Archaeological Associates in April and June of 2018 (A.M. Archaeological Associates 2018; PIF# P035-0277-2018; Figure 2). AgGt-260 was identified in the northwestern portion of the Study Area and comprised 23 pre-contact Aboriginal artifacts scattered across an area of 32m by 58m. The Stage 2 artifact assemblage comprised 21 pieces of chipping detritus as well as a single biface and a single projectile point. The projectile point was determined to be a Hi-Lo type point dating to the Late Paleo-Indian period (*circa* 8500-8000 B.C.; Ellis and Deller 1990). Given the quantity of artifacts recovered and the special interest of the Hi-Lo point, AgGt-260 was recommended for a Stage 3 archaeological assessment as per Section 2.2, Standards 1a (1) and 1b.iii. of the *Standards and Guidelines* (Government of Ontario 2011a).

The Stage 3 assessment of AgGt-260 was conducted in August and September of 2018 by Detritus (Detritus 2018). The Stage 3 assessment of AgGt-260 resulted in the documentation of 41 pieces of pre-contact Aboriginal chipping detritus from the CSP and the hand excavation of 38 test units. The morphological analysis of the chipping detritus suggests that late stage lithic reduction activities occurred at the site for the production and maintenance of formal tools. This conclusion was supported by the biface and Hi-Lo projectile point recovered during the Stage 2 assessment. No formal tools, Aboriginal ceramics, or fire cracked rock were recovered during the Stage 3 assessment, nor were any subsurface features observed. Based on all the available evidence, AgGt-260 was interpreted as a small activity area occupied seasonally by pre-contact Aboriginal people during the Late Paleo-Indian period and characterized by late stage lithic reduction activities for the production and maintenance of formal tools. Given that AgGt-260 is a Late Paleo-Indian site, it demonstrates the earliest occupation of the province, therefore, the site was determined to retain CHVI, and fulfilled the criteria for a Stage 4 archaeological investigation as per Section 3.4, Standard 1c of the *Standards and Guidelines* (Government of Ontario 2011a). A Stage 4 archaeological mitigation of impacts to AgGt-260 was recommended.

The MTCS prefers that sites recommended for Stage 4 mitigation be avoided and protected rather than excavated, as per Section 7.9.4, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011a). If these options are not feasible, Stage 4 archaeological mitigation by hand excavation is an alternative. In consultation with the client, avoidance and protection at AgGt-260 was not a viable option. As such, it was recommended that the Stage 4 mitigation at AgGt-260 consist of a hand excavated block of 1m units surrounding the highest yielding Stage 3 test units, as per Sections 4.2.1 and 4.2.2 of the *Standards and Guidelines* (Government of Ontario 2011a).

The Stage 4 mitigation of AgGt-260 resulted in the documentation of five pieces of pre-contact Aboriginal chipping detritus from 16 1m units. Eight of these surrounded both of the highest yielding Stage 3 units at 280E, 510N and 285E, 520N, as per Section 4.2.2, Standard 3c of the

Standards and Guidelines (Government of Ontario 2011a). These units formed two excavation blocks measuring 3m by 3m each. These Stage 4 excavation blocks corresponded with the activity area identified during the Stage 3 assessment in the southern portion of the site. No formal tools, Aboriginal ceramics, or fire cracked rock were recovered during the Stage 4 mitigation, nor were any subsurface features observed.

The Stage 4 excavation at AgGt-260 produced five pre-contact Aboriginal artifacts, all of which were chipping detritus fragments. Overall, the combined investigations at AgGt-260 yielded 67 pieces of chipping detritus, 1 biface and 1 Hi-Lo like project point, dating to the Late Paleo-Indian period of occupation. Furthermore, the entire assemblage is manufactured from Onondaga chert. The complete absence of primary flakes recovered within the combined investigations suggests that late stage lithic reduction activities were conducted at AgGt-260 for the production and maintenance of formal tools. The presence of a biface and a projectile point within the Stage 2 assemblage supports this conclusion. The predominance of Onondaga chert, meanwhile, indicates that the occupants of the site were largely relying on a single source of raw material. Outcrops of Onondaga chert are found along the north shore of Lake Erie between Long Point and the Niagara River, which is approximately 24km to the south of the site.

Given the lack of features and limited number of diagnostic tools recovered at AgGt-260, it is difficult to define the site as more than a small activity area occupied seasonally by pre-contact Aboriginal people during the Late Paleo-Indian period and characterized by formal tool preparation and maintenance activities.

The Stage 4 mitigation of AgGt-260 is now complete. The CHVI of AgGt-260 has been fully documented and the information will be preserved for future study. **AgGt-260 has no further CHVI**, as per Section 7.11.4 Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011a).

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
Field Directors:	Mike Pitul, R462
Field Technicians:	Gary Cole, A1159; Jonathan Lovely; Uwe Maihofer; and Sarah Markulin
Artifact Analysis:	Mike Pitul, R462
Report Preparation:	Amanda Laprise, R470
Mapping and GIS:	Amanda Laprise, R470
Licensee Review:	Walter McCall, P389

Acknowledgments

Generous contributions by the following individuals and agencies made this report possible.

- Mr. Aleks Todorovski, LARKIN+ Land Use Planners Inc.

1.0 Project Context

1.1 Development Context

Detritus Consulting Ltd. ('Detritus') was retained by FARZ Holdings Inc. c/o LARKIN+ Land Use Planners Inc. ('the Proponent') to conduct a Stage 4 mitigation of impacts for archaeological site AgGt-260, located on part of Lot 67 Uppers Lane, including part of the Road Allowance Between Lots 67 and 68, City of Thorold, Regional Municipality of Niagara, Ontario ('Study Area'; Figure 1).

The current investigation was triggered by the Provincial Policy Statement ('PPS') that is informed by the *Ontario 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 4 mitigation was conducted for AgGt-260 during the pre-approval phase of the development under archaeological consulting license P389, issued to Dr. Walter McCall by the Ministry of Tourism, Culture and Sport ('MTCS') and adheres to the archaeological license report requirements under subsection 65 (1) of the *Ontario Heritage Act* (Government of Ontario 1990b) and the MTCS' 2011 *Standards and Guidelines for Consultant Archaeologists* ('*Standards and Guidelines*'; Government of Ontario 2011a).

The purpose of a Stage 4 mitigation of impacts by hand excavation is to document an archaeological site through its controlled removal in order to address archaeological concerns under land use planning and development processes. In compliance with the *Standards and Guidelines* (Government of Ontario 2011a), the objectives of the current Stage 4 mitigation at AgGt-260 are:

- To document the archaeological context, cultural features and artifacts for all parts of the site;
- to document the removal of the archaeological site; and
- to preserve the information recovered about the archaeological site for future study.

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

Prior to the arrival of European settlers, the Niagara region was occupied by the Neutral or Attawandaron tribe. The earliest recorded visit to the Niagara region was undertaken by Etienne 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 and 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 their assistance in an expedition being planned by Champlain. The mission was a success, but took much longer than anticipated. Brûlé returned with the Andaste, but arrived 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 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 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 (Heidenreich 1990).

The late 17th and early 18th centuries represent a turning point in the evolution of the post-contact Aboriginal occupation of Southern Ontario. It was at this time that various Iroquoian-speaking communities began migrating from New York State, followed by the arrival of new Algonkian-speaking groups from northern Ontario (Konrad 1981; Schmalz 1991). More specifically, this period marks the arrival of the Mississaugas into Southern Ontario and, in particular, the watersheds of the lower Great Lakes. 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 and, at the end of the 17th century, the Mississaugas' settled permanently in Southern Ontario, including the Niagara Peninsula (Praxis Research Associates n.d.). Around this same time, members of the Three Fires Confederacy (Chippewa, Ottawa, and Potawatomi) began immigrating from Ohio and Michigan into southwestern Ontario (Feest and Feest 1978:778-779).

The current Study Area falls within the lands surrendered by Treaty Number 3. According to Morris, Treaty Number 3

> *…was made with the Mississa[ug]a Indians 7th December, 1792, though purchased as early as 1784. This purchase in 1784 was to procure for that part of the Six Nation Indians coming into Canada a permanent abode. The area included in this Treaty is, Lincoln County excepting Niagara Township; Saltfleet, Binbrook, Barton, Glanford and Ancaster Townships, in Wentworth County; Brantford, Onondaga, Tusc[a]r[o]ra, Oakland and Burford Townships in Brant County; East and West Oxford, North and South Norwich, and Dereham Townships in Oxford County; North Dorchester Township in Middlesex County; South Dorchester, Malahide and Bayham Township in Elgin County; all Norfolk and Haldimand Counties; Pelham, Wainfleet, Thorold, Cumberland and Humberstone Townships in Welland County …*
>
> Morris 1943:17-18

The size and nature of the pre-contact settlements and the subsequent spread and distribution of Aboriginal material culture in Southern Ontario began to shift with the establishment of European settlers. 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. 1879:8; Tanner 1987:127; Weaver 1978:526). Despite the inevitable 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 2009:114). 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

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 2009). 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 and he spearheaded several initiatives to populate the province including the

establishment of shoreline communities with effective transportation links between them (Coyne 1895:33).

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 1956:17-18).

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 2009).

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 *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 & Co 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 bodies.

According to the *Historical Atlas* map of Thorold Township (Figure 2) the northern three quarters of Lot 67 was owned by J.J. Upper and the southern quarter was owned by Alex Fraser. No structures or orchards are visible on either parcel. Also illustrated is the early community of Allanburgh and the Welland Railway located to the southwest of the Study Area.

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 1997:100). Moreover, associated structures were not necessarily depicted or placed accurately (Gentilcore and Head 1984).

1.2.3 Recent Reports

Two archaeological reports have been written for archaeological work pertaining to AgGt-260 (Table 1). The results of these investigations will be discussed in more detail in Section 1.3.4 below.

Table 1: Archaeological Assessment Reports for AgGt-260

Year	Title	Author	PIF Numbers
2018	*Stage 1-2 Archaeological Assessment of Part Lot 67 Uppers Lane, including Part of Road Allowance Between Lots 67 and 68, City of Thorold, R.M. Niagara, Ontario*	A.M. Archaeological Associates	P035-0277-2018
2018	*Stage 3 Archaeological Assessment, AgGt-260 Part Lot 67 Uppers Lane, including Part of Road Allowance Between Lots 67 and 68, City of Thorold, Regional Municipality of Niagara, Ontario*	Detritus	P017-0670-2018

1.3 Archaeological Context

1.3.1 Property Description and Physical Setting

AgGt-260 was identified in an agricultural field in the northwest portion of 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 mid-19th 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 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 soy beans in rotation with cereal grains as well as alfalfa and clover (Huffman and Dumanski 1986).

The closest potable water source is Beaver Dams Creek, which is located approximately 934 metres (m) to the north of the Study Area.

1.3.2 Pre-Contact Aboriginal Land Use

This portion of southern Ontario has been demonstrated to have 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 2 provides a general outline of the cultural chronology of Thorold Township, based on Ellis and Ferris (1990).

Table 2: 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

Time Period	Cultural Period	Comments
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 archaeological resources, the registered archaeological site records kept by the MTCS were consulted. In Ontario, information concerning archaeological sites stored in the ASDB (Government of Ontario n.d.) is maintained by the MTCS. This database contains archaeological sites 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 under review is within Borden 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 MTCS 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.

An examination of the ASDB has shown that there 26 archaeological sites registered within a 1km radius of the Study Area (Table 2). Twenty-two of the sites are pre-contact Aboriginal, five of which date between the Late Paleo-Indian and Late Woodland periods. Additionally, four sites are post-contact Euro-Canadian and one site is multi-component.

Table 3: Registered Archaeological Sites within 1km

Borden Number	Site Name	Time Period	Affinity	Site Type
AgGt-72	Blackhorse Valve	Pre-Contact	Aboriginal	findspot
AgGt-130	T Brown	Post-Contact	Euro-Canadian	homestead
AgGt-131	Robert Spencer	Post-Contact	Euro-Canadian	homestead
AgGt-132	B. Williams	Post-Contact	Euro-Canadian	homestead
AgGt-133	K Smith	Post-Contact	Euro-Canadian	homestead
AgGt-134	-	Other	Aboriginal	findspot
AgGt-135	-	Other	Aboriginal	findspot
AgGt-136	-	Other	Aboriginal	findspot
AgGt-137	-	Other	Aboriginal	findspot
AgGt-138	-	Other	Aboriginal	findspot
AgGt-139	Glen Gordon 1	Post-Contact, Woodland, Late	Aboriginal	Unknown, habitation
AgGt-140	Glen Gordon 2	Other	Aboriginal	scatter
AgGt-141	Glen Gordon 3	Other	Aboriginal	scatter
AgGt-142	Glen Gordon 4	Other	Aboriginal	scatter
AgGt-175	Walker II	Pre-Contact	Aboriginal	
AgGt-176	Walker X	Archaic, Middle	Aboriginal	
AgGt-177	Walker VI	Pre-Contact	Aboriginal	
AgGt-178	Walker IX	Pre-Contact	Aboriginal	
AgGt-179	Walker I	Archaic, Late	Aboriginal	
AgGt-180	Walker III	Pre-Contact	Aboriginal	
AgGt-181	Walker IV	Pre-Contact	Aboriginal	
AgGt-182	Walker V	Pre-Contact	Aboriginal	
AgGt-183	Walker VII	Archaic, Early	Aboriginal	
AgGt-184	Walker VIII	Pre-Contact	Aboriginal	
AgGt-260		Paleo-Indian, Late	Aboriginal	camp / campsite
AgGt-261	Joy	Woodland, Late	Aboriginal	findspot

A Stage 1-3 archaeological assessments was conducted adjacent to the west and southwest of the Study Area by AMICK Consultants Limited ('AMICK'; AMICK 2006a). This assessment resulted in the recovery of thirteen sites, AgGt-130 to AgGt-142. A Stage 4 assessment was conducted by AMICK (AMICK 2006b) for the Webber Estates Site (AgGt-133). These reports were unavailable for review.

Additionally, AgGt-203 is the only other site registered in the AgGt Borden block that has been dated to the Paleo-Indian period. AgGt-203 is an isolated projectile point, discovered during the Stage 1-2 conducted by Detritus in 2014 (Detritus 2014) and is located approximately 9km to the southwest of the current Study Area.

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

1.3.4 Summary of Previous Investigations

AgGt-260 was identified during the Stage 2 pedestrian survey of the Study Area comprising entirely of agricultural field. This assessment was conducted by A.M. Archaeological Associates in April and June of 2018 (A.M. Archaeological Associates 2018; PIF# P035-0277-2018; Figure 2). AgGt-260 was identified in the northwestern portion of the Study Area and comprised 23 pre-contact Aboriginal artifacts scattered across an area of 32m by 58m. The Stage 2 artifact assemblage comprised 21 pieces of chipping detritus as well as a single biface and a single projectile point. The projectile point was determined to be a Hi-Lo type point dating to the Late Paleo-Indian period (*circa* 8500-8000 B.C.; Ellis and Deller 1990). Given the quantity of artifacts recovered and the special interest of the Hi-Lo point, AgGt-260 was recommended for a Stage 3 archaeological assessment as per Section 2.2, Standards 1a (1) and 1b.iii. of the *Standards and Guidelines* (Government of Ontario 2011a).

The Stage 3 assessment of AgGt-260 was conducted in August and September of 2018 by Detritus (Detritus 2018). The Stage 3 assessment of AgGt-260 resulted in the documentation of 41 pieces of pre-contact Aboriginal chipping detritus from the CSP and the hand excavation of 38 test units. The morphological analysis of the chipping detritus suggests that late stage lithic reduction activities occurred at the site for the production and maintenance of formal tools. This conclusion was supported by the biface and Hi-Lo projectile point recovered during the Stage 2 assessment.

No formal tools, Aboriginal ceramics, or fire cracked rock were recovered during the Stage 3 assessment, nor were any subsurface features observed. Based on all the available evidence, AgGt-260 was interpreted as a small activity area occupied seasonally by pre-contact Aboriginal people during the Late Paleo-Indian period and characterized by late stage lithic reduction activities for the production and maintenance of formal tools. Given that AgGt-260 is a Late Paleo-Indian site, it demonstrates the earliest occupation of the province, therefore, the site was determined to retain CHVI, and fulfilled the criteria for a Stage 4 archaeological investigation as per Section 3.4, Standard 1c of the *Standards and Guidelines* (Government of Ontario 2011a). A Stage 4 archaeological mitigation of impacts to AgGt-260 was recommended.

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2.0 Field Methods

The Stage 4 mitigation of AgGt-260 was conducted on September 13 and 14, 2018 under archaeological consulting license P389 issued to Dr. Walter McCall by the MTCS. This investigation began with a review of all available reports of previous archaeological fieldwork as per Section 4.2, Standard 2 of the *Standards and Guidelines* (Government of Ontario 2011a). Upon arrival at the site, the original Stage 3 grid was still in place and all excavated units still open and visible. Lighting and soil conditions were suitable and visibility was excellent. At no time were field or weather conditions detrimental to the recovery of archaeological material. Photos 1 to 4 illustrate conditions during the Stage 4 block excavation. Table 4 provides a summary of the weather and field conditions during the Stage 4 mitigation at AgGt-260.

Table 4: Field and Weather Conditions

Date	Activity	Weather	Field Conditions
September 13, 2018	test unit excavation	sunny and 27˚C	soil dry and screens easily
September 14, 2018	test unit excavation	sunny and 32˚C	soil dry and screens easily

The Stage 4 mitigation of AgGt-260 resulted in the hand excavation of 16 1m units. Eight of these surrounded each of the highest yielding Stage 3 units at 280E, 510N and 285E, 520N, as per Section 4.2.2, Standard 3c of the *Standards and Guidelines* (Government of Ontario 2011a). These units formed two excavation blocks measuring 3m by 3m each. The extent of the excavation block was determined in accordance with Table 4.1 of the *Standards and Guidelines* (Government of Ontario 2011a). Five chert flakes were recovered in all, with artifact yields ranging from 0 to 2.

All Stage 4 units were excavated by hand in systematic levels, as per Section 4.2.2 of the *Standards and Guidelines* (Government of Ontario 2011a). Each 1m unit contained a single stratigraphic layer (plough zone) and was excavated into the first five centimetres (cm) of subsoil. All soil was screened through six-millimetre (mm) hardware cloth. All artifacts recovered during the Stage 4 block excavation were recorded with reference to their 1m grid unit number and retained for laboratory analysis and description. The subsoil surface of each unit was shovel shined, trowelled and examined for any evidence of subsurface cultural features, none of which were present. The Stage 4 units excavated at AgGt-260 ranged in depth from 20cm to 23cm; considering that each test unit had been excavated 5cm into subsoil, the plough zone ranged in depth from 15cm to 18cm. No formal tools, Aboriginal ceramics, or fire cracked rock were recovered during any stage of investigation, nor were any subsurface features observed.

3.0 Record of Finds

The Stage 4 mitigation of AgGt-260 was conducted employing the methods described in Section 2.0. An inventory of the documentary record generated by fieldwork is provided in Table 5 below. Maps indicating the exact site location of AgGt-260 and all UTM coordinates recorded during the Stage 4 mitigation are included in the Supplementary Documentation to this report. A description of the site and the artifacts recovered during the Stage 4 excavation is provided in greater detail below; a photographic sample of the artifacts is presented in Section 9.2.

Table 5: Inventory of Document Record

Document Type	Current Location of Document Type	Additional Comments
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
27 Digital Photographs	Detritus office	stored digitally in project file

All of the material culture collected during the Stage 4 mitigation is contained in one box and will be temporarily housed in the office 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 MTCS and the project area's owners.

3.1 Cultural Material

The Stage 4 excavation at AgGt-260 resulted in the documentation of five pre-contact Aboriginal artifacts, all of which were pieces of chipping detritus all manufactured from Onondaga chert. No formal tools, Aboriginal ceramics, or fire cracked rock were recovered, nor were any subsurface features observed. Chert type identifications were accomplished visually using reference materials located in the personal collections or online.

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

Furthermore, all pieces of chipping detritus were subject to morphological analysis following the classification scheme described by Lennox *et al*. (1986:79-81) and expanded upon by Fisher (1997: 41-49). Flake types identified during the morphological analysis of the chipping detritus assemblages include fragmentary flakes. Cortical removal, primary and secondary flakes are produced during the initial reduction phases of raw material blanks and tend to exhibit minimal dorsal flake scarring. These flakes are also characterized by the presence of cortex, or original unflaked area, on their dorsal surfaces and proximal ends. For cortical removal flakes, cortex makes up over half of the dorsal surface. For primary flakes, cortex makes up less than half of the dorsal surface, while secondary flakes may not contain any. Thinning flakes are produced during the latter stages of reduction when raw material blanks are shaped into preforms and formal tools. They are the result of precise flake removal through pressure flaking, where the maker applies direct pressure onto a specific part of the tool in order to facilitate flake removal. 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

Due to the size of the Stage 4 assemblage, all pieces of chipping detritus were subject to morphological analysis. A sample of artifacts recovered from AgGt-260 can be seen in Section 9.2.

According to the morphological analysis all of the flakes recovered during the Stage 4 excavation at AgGt-260 were flake fragments. Given the recovery of only flake fragments in the Stage 4 assemblage it is difficult to draw any useful conclusions regarding site function.

Overall, the combined investigations at AgGt-260 yielded 67 pieces of chipping detritus, 1 biface and 1 Hi-Lo like project point, dating to the Late Paleo-Indian period of occupation. Furthermore, the entire assemblage is manufactured from Onondaga chert.

The high percentage of thinning flakes and complete absence of primary flakes suggests that late stage lithic reduction activities were conducted at AgGt-260 for the production and maintenance of formal tools. The presence of a biface and a projectile point within the Stage 2 assemblage supports this conclusion. The predominance of Onondaga chert, meanwhile, indicates that the occupants of the site were largely relying on a single source of raw material. Outcrops of Onondaga chert are found along the north shore of Lake Erie between Long Point and the Niagara River, which is approximately 24km to the south of the site.

3.2 Artifact Distribution and Settlement Pattern

The Stage 4 mitigation of AgGt-260 resulted in the hand excavation of 16 1m units. Eight of these surrounded both of the highest yielding Stage 3 units at 280E, 510N and 285E, 520N, as per Section 4.2.2, Standard 3c of the *Standards and Guidelines* (Government of Ontario 2011a). These units formed two excavation blocks measuring 3m by 3m each. The extent of the excavation block was determined in accordance with Table 4.1 of the *Standards and Guidelines* (Government of Ontario 2011a). Five chert flakes were recovered in all, with artifact yields ranging from 0 to 2.

These Stage 4 excavation blocks corresponded with the activity area identified during the Stage 3 assessment in the southern portion of the site. No formal tools, Aboriginal ceramics, or fire cracked rock were recovered during the Stage 4 mitigation, nor were any subsurface features observed.

Given the lack of features and tools within the Stage 4 assemblage, it is difficult to define AgGt-260 as more than a small activity area occupied seasonally by pre-contact Aboriginal people during the Late Paleo-Indian period and characterized by formal tool preparation and maintenance activities.

3.3 Artifact Catalogue

Table 6 provides a complete catalogue of the Stage 4 artifact assemblage recovered from AgGt-260. A representative sample of artifacts is depicted in Section 9.2 of this report.

Table 6: AgGt-260 Stage 4 Artifact Catalogue

Cat#	Unit Easting	Unit Northing	Artifact	No.	Depth (m)	Morphology	Chert Type
1	279	510	chipping detritus	1	0.22	fragment	Onondaga
2	281	510	chipping detritus	1	0.21	fragment	Onondaga
3	281	509	chipping detritus	1	0.22	fragment	Onondaga
4	284	521	chipping detritus	2	0.22	fragment	Onondaga

4.0 Analysis and Conclusions

Detritus was retained by the Proponent to conduct a Stage 4 mitigation of impacts for archaeological site AgGt-260, located on part of Lot 67 Uppers Lane, including part of the Road Allowance Between Lots 67 and 68, City of Thorold, Regional Municipality of Niagara, Ontario ('Study Area'; Figure 1).

The Stage 4 mitigation of AgGt-260 resulted in the documentation of five pieces of pre-contact Aboriginal chipping detritus from 16 1m units. Eight of these surrounded both of the highest yielding Stage 3 units at 280E, 510N and 285E, 520N, as per Section 4.2.2, Standard 3c of the *Standards and Guidelines* (Government of Ontario 2011a). These units formed two excavation blocks measuring 3m by 3m each. These Stage 4 excavation blocks corresponded with the activity area identified during the Stage 3 assessment in the southern portion of the site. No formal tools, Aboriginal ceramics, or fire cracked rock were recovered during the Stage 4 mitigation, nor were any subsurface features observed.

The Stage 4 excavation at AgGt-260 produced five pre-contact Aboriginal artifacts, all of which were chipping detritus fragments. Overall, the combined investigations at AgGt-260 yielded 67 pieces of chipping detritus, 1 biface and 1 Hi-Lo like project point, dating to the Late Paleo-Indian period of occupation. Furthermore, the entire assemblage is manufactured from Onondaga chert.

The high percentage of thinning flakes and complete absence of primary flakes suggests that late stage lithic reduction activities were conducted at AgGt-260 for the production and maintenance of formal tools. The presence of a biface and a projectile point within the Stage 2 assemblage supports this conclusion. The predominance of Onondaga chert, meanwhile, indicates that the occupants of the site were largely relying on a single source of raw material. Outcrops of Onondaga chert are found along the north shore of Lake Erie between Long Point and the Niagara River, which is approximately 24km to the south of the site.

Given the lack of features and limited number of diagnostic tools recovered at AgGt-260, it is difficult to define the site as more than a small activity area occupied seasonally by pre-contact Aboriginal people during the Late Paleo-Indian period and characterized by formal tool preparation and maintenance activities.

An examination of the ASDB (Government of Ontario n.d.) has demonstrated that 20 pre-contact Aboriginal archaeological sites and one multi-component site were registered within 1km of the current Study Area. Of the 20 pre-contact Aboriginal sites, four date between the Early Archaic and Late Woodland periods. Looking further afield, AgGt-260 is one of the only two known registered Paleo-Indian sites within the AgGt Borden block. These sites demonstrate the rarity of Paleo-Indian sites in the area. The 20 pre-contact Aboriginal sites registered within 1km of the Study Area provide valuable insight into the broader cultural landscape wherein AgGt-260 lies.

5.0 Recommendations

The Stage 4 mitigation of AgGt-260 is now complete. The CHVI of AgGt-260 has been fully documented and the information will be preserved for future study. **AgGt-260 has no further CHVI**, as per Section 7.11.4 Standard 1 of the *Standards and Guidelines* (Government of Ontario 2011a).

6.0 Advice on Compliance with Legislation

This report is submitted to the Minister of Tourism and Culture 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 Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological 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.

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8.0 Maps

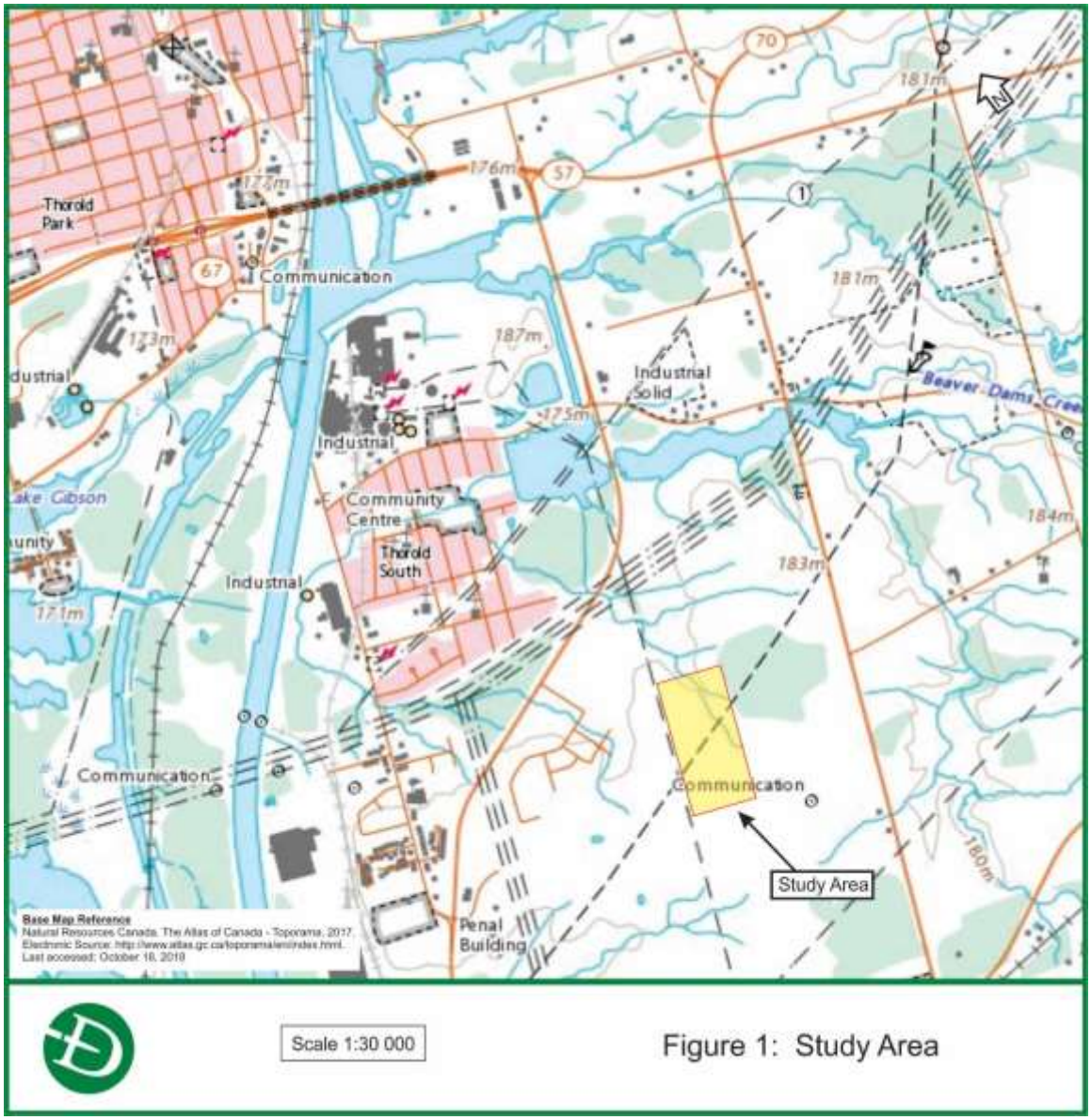
Thorold Park
Communication
Industrial
Industrial Solid
Community Centre
Thorold South
Industrial
Communication
Communication
Study Area
Penal Building
Beaver Dams Cree
Base Map Reference
Natural Resources Canada. The Atlas of Canada - Toporama. 2017.
Electronic Source: http://www.atlas.gc.ca/toporama/en/index.html.
Last accessed: October 16, 2018
Scale 1:30 000
Figure 1: Study Area

Figure 2: Previous Archaeological Assessment

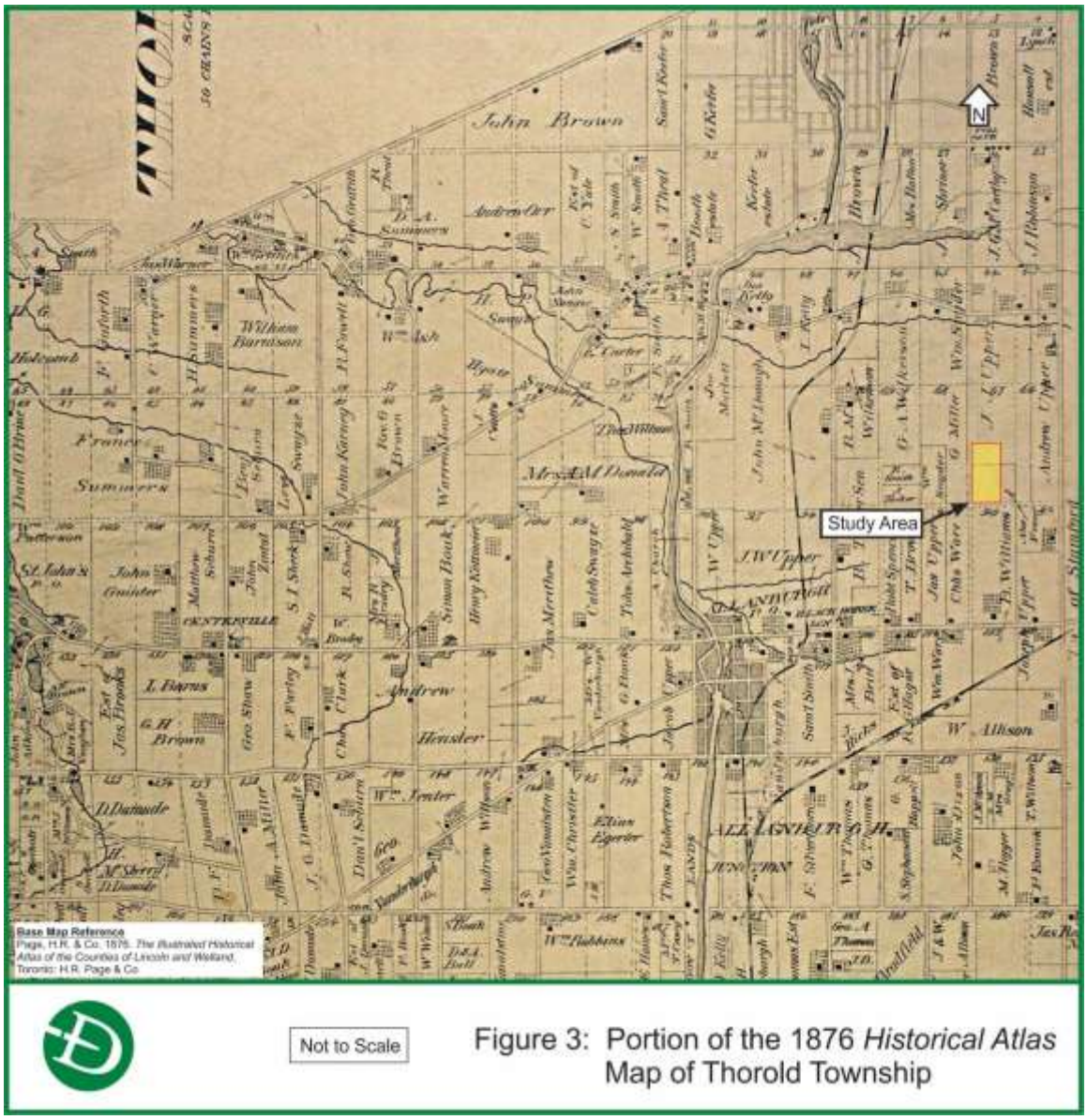

Figure 3: Portion of the 1876 *Historical Atlas* Map of Thorold Township

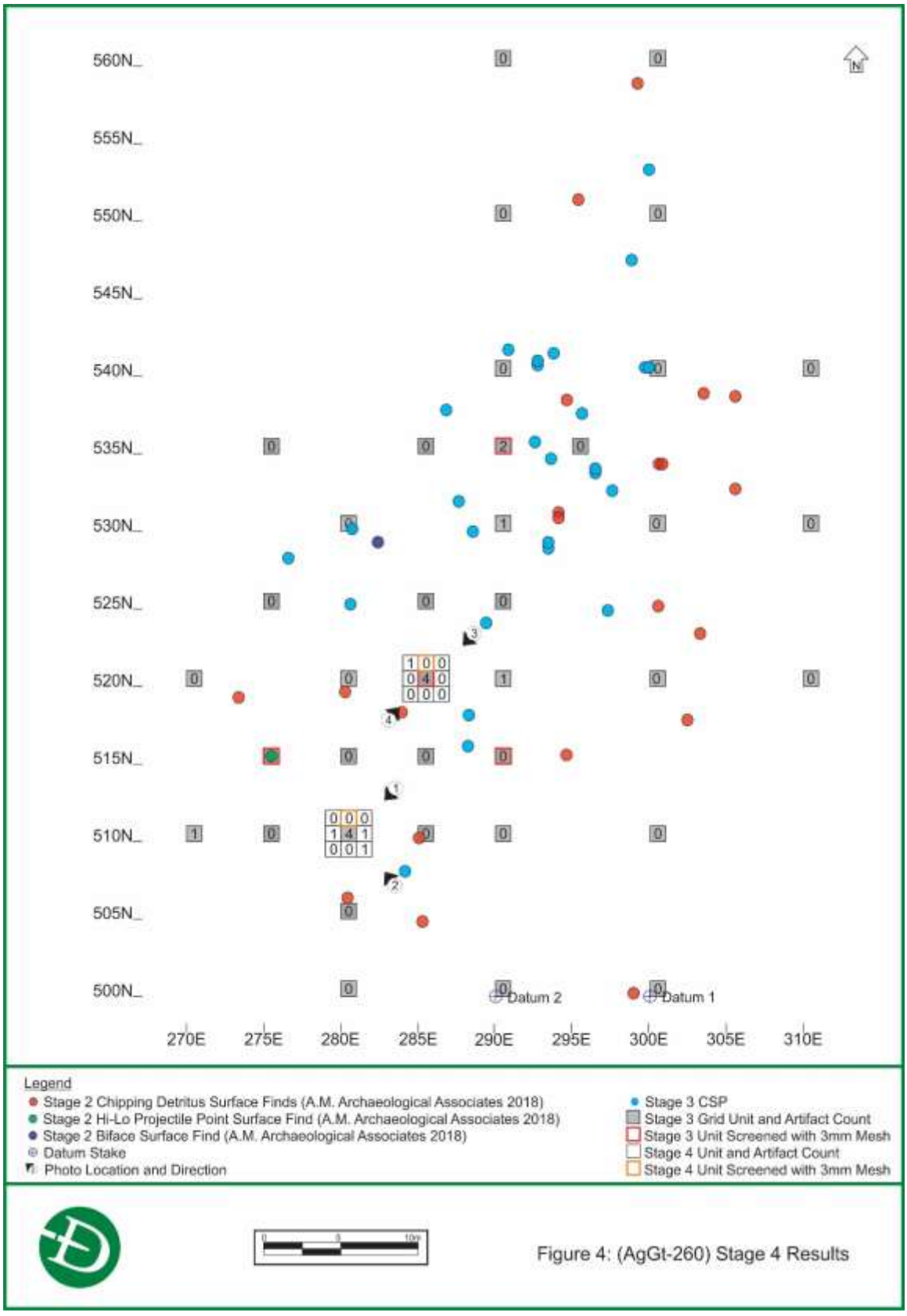

Figure 4: (AgGt-260) Stage 4 Results

9.0 Images

9.1 Photos

Photo 1: Stage 4 Unit Excavation, facing southwest

Photo 2: Stage 4 Unit Excavation, facing northwest

Photo 3: Stage 4 Unit Excavation, facing southwest

Photo 4: Stage 4 Unit Excavation, facing northeast

9.2 Artifacts

Plate 1: Chipping Detritus Recovered from the Stage 4 Mitigation of AgGt-260