

THE STAGE 1 AND 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

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The archaeological assessment reported here was undertaken on the Treaty Lands and Territory of the Mississaugas of the New Credit First Nation.

A. M. Archaeological Associates would like to thank Megan Devries and Joelle Williams of The Department of Consultation and Accommodation, Mississaugas of the New Credit First Nation for arranging to have Field Liaison Representatives Joy LaForme and Gilbert LaForme work on this project.

EXECUTIVE SUMMARY

This report discusses the rationale, methods and results of the Stage 1 and 2 archaeological assessment of a residential development known as Upper's Grove in the City of Thorold, Regional Municipality of Niagara (Part Lot 67, including Part of Road Allowance Between Lots 67 And 68, Geo. Twp. Thorold, former County of Welland). The archaeological assessment was requested by the City of Thorold as a part of Zoning By-law Amendment and Draft Plan of Subdivision applications. The assessment was conducted for LARKIN+ Land Use Planners on behalf of Farz Holdings Inc. LARKIN+ Land Use Planners arranged for ploughing and property access. The first site visit was conducted on April 26, 2018, however field conditions were not conducive to Stage 2 assessment due to poor visibility. The site was subsequently ploughed and allowed to weather and re-visited June 22 and 25, 2018 when clear to partly cloudy skies and temperatures of between 18° and 28°C provided excellent conditions for the field assessment.

All archaeological assessment activities were performed according to the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011). All work was done under the archaeological consulting license, P035, issued to Andrew Murray of A. M. Archaeological Associates under the *Ontario Heritage Act*. All records pertaining to this project will be curated at the offices of A. M. Archaeological Associates.

The subject property is located on the unused road allowance of Upper's Lane between Davis Road to the west, Lundy's Lane to the south, Thorold Townline Road to the east and Beaverdams Road to the north (Map 1). Most of the surrounding lands have up until recently been in agricultural use, but residential development is currently in progress immediately to the west. A forested area borders the study area to the northeast. The study area encompasses 14.94 hectares of agricultural fields (Map 12).

The agricultural fields were assessed by pedestrian survey at five metre intervals, and the interval was intensified to one metre around artifact finds for a minimum of 20 metres following *Section 2.1.1 Pedestrian Survey* in the *Standards and Guidelines for Consultant Archaeologists*, 2011 (MTCS 2011: 30-32). A total of 30 artifacts were recovered during the Stage 2 pedestrian survey of 14.94 hectares of agricultural fields. All the artifacts are lithic tools or flakes that indicate an affiliation with precontact Indigenous people that have lived in the Niagara Peninsula for over 10,000 years.

The discovery of the 23 artifacts at Findspots 1.01 to 1.21 are registered as AgGt-260 and its association with the Late Paleo-Indian Hi-Lo period is a rare find for the Niagara Peninsula. The recovery of two bifacial tools and three expedient flake scraping tools from the controlled surface pickup is also uncommonly productive for sites of this period. The remaining finds including five Onondaga chert flakes (FS 2.01, 3.01, 6.01, 7.01 & 7.02), one biface tip (FS 4.01) and one Levanna point (FS 5.01, AgGt-261) appear to be unrelated to the artifacts from Findspot 1 since they are a minimum distance of 95 metres from the AgGt-260 artifact concentration.

Findspot 1 (1.01 to 1.21) will require Stage 3 site-specific test excavation since it meets the standards from *Section 2.2 Analysis: Determining the requirement for Stage 3 assessment* from the *Standards and Guidelines for Consultant Archaeologists, 2011* (MTCS 2011: 39-40).

The remaining isolated artifacts recovered during the Stage 2 pedestrian survey of the ploughed and weathered fields are interpreted as part of the dispersed spread of artifacts that exemplify the extensive occupation of the Niagara Peninsula by Indigenous peoples for millennia. No site-specific assessment is required for Findspots 2.01, 3.01, 4.01, 5.01 (AgGt-261), 6.01, 7.01 and 7.2.

On the basis of the above information, we recommend the following:

1. The Stage 2 pedestrian assessment of the study area has resulted in the discovery of an archaeological site registered as AgGt-260. This site documents a Late Paleo-Indian, Hi-Lo occupation of the area and has cultural heritage value. This indicates that there are further concerns for the property and Stage 3 assessment is required and future Stage 4 assessment. The Stage 3 assessment should follow *Sections 3.2.2 Test unit excavation* and *3.2.3 Determining the location and number of test units* and *Table 3.1* (MTCS 2011:49-51). It is estimated that this site will require the excavation of 35-45 one-metre test units placed at 10 metre intervals across the 58 by 32 metre scatter, including 40 percent focusing on areas of interest within the site extent according to *Table 3.1 Standard 3 and 4* (MTCS 2011: 51). Additionally, 10 percent of the total number of units should be screened with 3 mm mesh, based on the time period of the site and presence of heavy clay soils (MTCS 2011: 49). More detailed location information including table of coordinates and mapping is included in the Supplementary Documentation. Indigenous engagement should be initiated at the beginning of Stage 3 and may involve direct involvement in excavation and monitoring.

2. The remaining isolated artifacts recovered during the Stage 2 pedestrian survey of the ploughed and weathered fields are interpreted as part of the dispersed spread of artifacts that exemplify the extensive occupation of the Niagara Peninsula by Indigenous peoples for millennia. No site-specific assessment is required for Findspots 2.01, 3.01, 4.01, 5.01, 6.01, 7.01 and 7.2. No further work is required for the remaining area of the study lands.

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1.0 PROJECT CONTEXT

1.1 Development Context

This report discusses the rationale, methods and results of the Stage 1 and 2 archaeological assessment of a residential development known as Upper's Grove in the City of Thorold, Regional Municipality of Niagara (Part Lot 67, including Part of Road Allowance Between Lots 67 And 68, Geo. Twp. Thorold, former County of Welland). The archaeological assessment was requested by the City of Thorold as a part of Zoning By-law Amendment and Draft Plan of Subdivision applications. The assessment was conducted for LARKIN+ Land Use Planners on behalf of Farz Holdings Inc. LARKIN+ Land Use Planners arranged for ploughing and property access. The first site visit was conducted on April 26, 2018, however field conditions were not conducive to Stage 2 assessment due to poor visibility. The site was subsequently ploughed and allowed to weather and re-visited June 22 and 25, 2018 when clear to partly cloudy skies and temperatures of between 18° and 28°C provided excellent conditions for the field assessment.

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The subject property is located on the unused road allowance of Upper's Lane between Davis Road to the west, Lundy's Lane to the south, Thorold Townline Road to the east and Beaverdams Road to the north (Map 1). Most of the surrounding lands have up until recently been in agricultural use, but residential development is currently in progress immediately to the west. A forested area borders the study area to the northeast. The study area encompasses 14.94 hectares of agricultural fields (Map 12).

1.2 Historic Context

1.2.1 General Area

1.2.1.1 Pre-contact era

The known pre-contact occupation of the Niagara Peninsula begins with discoveries of isolated fluted points of the Early Paleo-Indian period (9500–8500 B.C.). These sites appear on more elevated locations above the escarpment that would have been above high post-glacial Lake Ontario levels. Archaeological sites become more common during the Late Pale-Indian Hi-Lo period (8500–8000 B.C.) and the Early Archaic Nettling period (7800–6900 B.C.). The density of

archaeological sites gradually increases throughout the remaining Archaic period. The Late Archaic Narrow Point (Lamoka) and Broad Point (Genesee) periods (2500-1500 B.C.) are very well represented throughout the region. The Niagara Peninsula becomes a focus of early horticulturalists during the Middle Woodland period, which sees the introduction of corn and semi-permanent villages. By the Late Woodland period, the upper reaches of Twelve Mile Creek become a focus for a cluster of Neutral villages. Although early trade in southern Ontario was conducted between the Neutral and the French, the New York Iroquois destroyed villages between 1647 and 1651 and settled along Lake Ontario for a brief period of the seventeenth century.

Archaeologists divide eastern Ontario's pre-contact history into the following temporal/cultural sequences:

Table 1: General cultural synthesis for the south-central Ontario.

PERIOD	GROUP	TIME RANGE	COMMENT
PALEO-INDIAN			
Big game hunters; small nomadic groups			
<i>Early</i>	Fluted Point	9500–8500 B.C.	Distinctive spear points with channels or grooves. Survival in low biotic productivity environments.
<i>Late</i>	Hi-Lo	8500–8000 B.C.	Transitional phase to Early Archaic. Smaller territories.
ARCHAIC			
Nomadic hunters and gatherers. Territories exploited on yearly round.			
<i>Early</i>	Nettling Bifurcate Based	7800–6900 B.C. 6900–6000 B.C.	More varied toolkit.
<i>Middle</i>	Stanly/Neville Otter Creek Brewerton	6000–5000 B.C. 5000–3000 B.C. 3000-2500 B.C.	Ground and polished stone tool industry; subsistence fishing.
<i>Late</i>	Narrow Point Broad Point Small Point	2500–1800 B.C. 1800–1500 B.C. 1500–800 B.C.	Bipolar lithic reduction as evidence of more extensive woodworking
			Net fishing, nut harvesting, dog burials
			Evidence of mortuary practices; bow and arrow technology.
WOODLAND			
Introduction of pottery and agriculture.			
<i>Early</i>	Meadowood	900–400 B.C.	Earliest pottery; pop-eyed birdstones
<i>Middle</i>	Point Peninsula Princess Point	400 B.C. –500 A.D. 500–900 A.D.	Long distance trade networks. Incipient horticulture.
<i>Late</i>	Pickering/ Glen Meyer	900–1280 A.D.	Transition to village life and maize agriculture.
<i>Early Iroquoian</i>			Large village sites. Rapid population growth.
<i>Middle Iroquoian</i>			
<i>Late Iroquoian</i>	Huron Neutral Petun St. Lawrence- Iroquois	1400–1650 A.D.	Well-made ceramic pots Tribal differentiation and warfare.
HISTORIC			
European colonisation			
<i>Early</i>	Odawa, Ojibwa, Mississauga, Six Nations	1700–1875 A.D.	Fur trade; social displacement.
<i>Late</i>	Odawa, Ojibwa, Mississauga, Six Nations Euro-Canadian	1790 A.D. –present	Consolidation of Indigenous people on reserves; continued presence throughout urban and rural areas European urban & rural settlement

1.2.1.2 Early contact era

The Mississauga, an Algonquian-speaking people with homelands in the upper Great Lakes, had expanded into southern Ontario during the seventeenth and eighteenth centuries. As a result, the early colonial British government recognised the Mississauga and made purchases of land in the Niagara Peninsula and along the Lake Ontario shoreline to enable European settlement.

The first permanent European settlers on the Niagara Peninsula were United Empire Loyalists who immigrated to southern Ontario in 1784 (H. R. Page 1876: 5). The men who served in Butler's Rangers during the American War of Independence and their relatives were also granted land on the Niagara Peninsula. These first settlers tended to build homesteads along the Niagara River, the shores of Lake Ontario and watercourses such as the Welland River (H. R. Page 1876: 5). As roads were built into forested areas, homesteaders followed as these new areas opened for settlement (H. R. Page 1876:1).

1.2.2 Property History

Jacob Upper received the land grant of Lots 44 and 67 in Thorold Township in 1878 (Thompson 1898) (Map 2). The Uppers came from New Jersey, crossing the Niagara River at Fort Erie. They brought a small herd of cattle with them, and stopped at a spring just north of Allanburgh. Their first log building was very near the site of the present large stone house near Beaverdams Road still owned by one of their descendants. The first road laid out was an irregular one connecting the farms of the Boukes, the Uppers, the Vanderburghs and the Wilkersons, and was known as the "Holland Road" It now leads from Allanburgh to Lundy s Lane. The study area lands are within a wide area depicted as having been partially cleared and divided into fields by 1814 (Map 3).

The 1862 map of the Upper's Lane study area shows "A. Upper" on the lot but no dwelling (Tremaine 1862) (Map 4). The 1876 Thorold Township map shows that the lot had been subdivided along the line that remains as a treed fence row (Map 5). No buildings are shown within the study area that is split between J. J. Upper and Alex Fraser (Page, H. R. and Co 1876). Jacob J. Upper is listed on Part Lots 43, 44, 66 and 67 on the 1897 voter's list (Thompson 1898). No dwellings are shown on the topographic map from 1908, the aerial photographs from 1934 and 1954 or the topographic map from 1961 (Maps 6, 7, 8 and 9).

1.3 Archaeological Context

The subject property is located on the unused road allowance of Upper's Lane between Davis Road to the west, Lundy's Lane to the south, Thorold Townline Road to the east and Beaverdams Road to the north. Most of the surrounding lands have up until recently been in agricultural use, but residential development is currently in progress immediately to the west. A forested area borders the study area to the northeast. The study area encompasses 14.94 hectares of agricultural fields.

1.3.1 Environmental Setting

The study area is within the Haldimand Clay Plain physiographic region, an area of level to undulating terrain between the Niagara Escarpment and Lake Erie. The clay sediments that cover the region were deposited in glacial Lake Warren around 12,500 B.P (Chapman and Putnam 1984, 2007). The drainage is generally poor as result of the flat topography and the heavy lacustrine clay soils identified as Haldimand Clay (Ontario Agricultural College 1935; Chapman and Putnam 1984: 156-158; OIP 1989). These soils are reddish-hued clays with prominent, strong brown mottles, in the B and C horizons (Kingston and Presant 1989).

Topographic maps indicate streams running through the northern half of the study area in a northerly direction, but no water was flowing through the stream channels during the site visits. The study area is primarily flat except for these drainage channels. There may be more persistent water in the southeast corner of the study area and near the fence row that bisects the property where cattails were observed.

1.3.2 Registered Archaeological Sites

A search of the Ministry of Tourism and Culture's archaeological sites database revealed 24 archaeological sites within a one-kilometre radius of the study area (MTCS 2018) (Table 3). Twenty of the sites are registered as having Indigenous affinity, but only three are identified to a specific time-period (Early Archaic, Middle Archaic and Late Archaic). The remaining Indigenous sites are considered precontact Indigenous sites since only lithic artifacts were recovered. Eight the 20 sites are locations where only a single isolated lithic artifact was recovered (AgGt-72, AgGt-134, AgGt-135, AgGt-136, AgGt-137, AgGt-138, AgGt-179 and AgGt-183). Five sites had only three lithic artifacts (AgGt-141, AgGt-180, AgGt-181, AgGt-182 and AgGt-184). The only site within 300 metres of the study area is the isolated flake, AgGt-137, discovered 127 metres west of the western property boundary.

Four of the sites are registered as nineteenth-century Euro-Canadian sites (AgGt-130, AgGt-131, AgGt-132 and AgGt-134).

Table 2: Summary of registered archaeological sites within 1-km.

Borden #	Site Name	Time Period	Affinity	Site Type	Reference
AgGt-72	Blackhorse Valve	Pre-Contact	Indigenous	findspot	LMA 1992
AgGt-130	T Brown	Post-Contact	Euro-Canadian	homestead	AMICK 2006a
AgGt-131	Robert Spencer	Post-Contact	Euro-Canadian	homestead	AMICK 2006a
AgGt-132	B. Williams	Post-Contact	Euro-Canadian	homestead	AMICK 2006a
AgGt-133	K Smith	Post-Contact	Euro-Canadian	homestead	AMICK 2006a
AgGt-134	-	Pre-Contact	Indigenous	findspot	AMICK 2006a
AgGt-135	-	Pre-Contact	Indigenous	findspot	AMICK 2006a
AgGt-136	-	Pre-Contact	Indigenous	findspot	AMICK 2006a
AgGt-137	-	Pre-Contact	Indigenous	findspot	AMICK 2006a
AgGt-138	-	Pre-Contact	Indigenous	findspot	AMICK 2006a
AgGt-139	Glen Gordon 1	Pre-Contact	Indigenous	camp/ campsite	AMICK 2006a
AgGt-140	Glen Gordon 2	Pre-Contact	Indigenous	camp/ campsite	AMICK 2006a
AgGt-141	Glen Gordon 3	Pre-Contact	Indigenous	camp/ campsite	AMICK 2006a
AgGt-142	Glen Gordon 4	Pre-Contact	Indigenous	camp/ campsite	AMICK 2006a
AgGt-175	Walker II	Pre-Contact	Indigenous	camp/ campsite	Sutton 2015
AgGt-176	Walker X	Archaic, Middle	Indigenous	camp/ campsite	Sutton 2015
AgGt-177	Walker VI	Pre-Contact	Indigenous	camp/ campsite	Sutton 2015
AgGt-178	Walker IX	Pre-Contact	Indigenous	camp/ campsite	Sutton 2015
AgGt-179	Walker I	Archaic, Late - Narrow Point	Indigenous	findspot	Sutton 2015
AgGt-180	Walker III	Pre-Contact	Indigenous	camp/ campsite	Sutton 2015
AgGt-181	Walker IV	Pre-Contact	Indigenous	camp/ campsite	Sutton 2015
AgGt-182	Walker V	Pre-Contact	Indigenous	camp/ campsite	Sutton 2015
AgGt-183	Walker VII	Archaic, Early - Nettling	Indigenous	findspot	Sutton 2015
AgGt-184	Walker VIII	Pre-Contact	Indigenous	camp/ campsite	Sutton 2015

AgGt-203 is the only registered archaeological site with a Hi-Lo Point within the AgGt Borden block and within Niagara Region that was returned from a search of the “diagnostic” field in the Ontario Archaeological Sites Database. The site is an isolated projectile point discovered during a Stage 1 and 2 pedestrian survey, 9.4 km to the southwest (Detritus Consulting Ltd 2014). However, Tinkler and Pengelly have catalogued 28 Hi-Lo sites in Niagara (Pengelly and Tinkler 2004). These sites are primarily isolated point recoveries in the hands of collectors. No Hi-Lo sites have been excavated in the Niagara Peninsula.

1.3.3 Past Projects

The lands to the west and southwest of the study area were subject to Stage 2 field assessment by AMICK Consultants Limited in 2005 (AMICK 2006a). The Stage 2 resulted in the discovery of 13 of the registered archaeological sites described above. Archaeological Services Inc. and Archaeological Assessments Limited have conducted assessments for an aggregate quarry east

of Thorold Townline Road that resulted in the discovery of 10 of the sites described above. The assessment is greater than 50 metres from the current study area (ASI 2008; AAL 2015).

2.0 METHODOLOGY

2.1 GIS Methods

The existing survey plan was overlaid with nineteenth and twentieth-century mapping using the best available landmarks. The maps were rotated and stretched in both east-west and north-south direction to provide the best fit.

2.2 Field Methods

The study area was in recent agricultural use and was assessed following *Section 2.1.1 Pedestrian Survey* in the *Standards and Guidelines for Consultant Archaeologists*, 2011 (MTCS 2011: 30-32). These fields were subject to Stage 2 pedestrian survey method involving walking the property systematically at five metres intervals with the purpose of mapping and collecting artifacts found on the ground surface. An initial visit on April 26, 2018, found the study area planted with densely seeded winter wheat that had grown too high to provide acceptable visibility of the ground surface. The lands to be surveyed were ploughed on June 4 and 5, 2018. A second visit on June 22 and 25, allowed for the soils to be weathered by at least three heavy rains. The ploughed conditions and weathering provided excellent visibility with minimal crop obscuring the surface of the ploughed fields. At no point was the visibility of the ground surface reduced to below 80 percent. The five-metre survey transect intervals were decreased to one-metre intervals over a minimum of a 20 metre radius around each find to determine whether it is an isolated find or part of a larger scatter. All artifacts were collected for full documentation of the resource following GPS recording of the locations to avoid unauthorized collectors from removing artifacts. Artifacts from each findspot were bagged in small paper bags and labelled with the findspot number, project name date and type of artifact. The artifacts were washed and catalogued in the lab and bagged in resealable plastic bags with labels recording the project name and PIF, Borden number (if applicable), findspot number, field method, artifact type, and coordinates (UTM, NAD83).

Mapping was carried out using a handheld GPS capable of recording differential data (CMT March IIe). Individual point locations were recorded by 120 one-second interval recordings using UTM 17T NAD 83 under clear skies and open canopy. The resulting GPS data was post-processed using Port Weller (PWEL) RINEX base station data downloaded from the CORS Network. Position

Dilution of Precision (PDOP) was between 1.1 and 1.8 resulting 2DRMS (Twice the distance root mean square) probability of 95% that the actual point is between .39 and .94 metres. The coordinates generated by the GPS are provided in the supplementary documentation. All photograph locations were also logged by GPS (Images 1 - 8; Map 11).

2.3 Property Assessment

The property conditions were visually assessed and photo documented within the study area on April 26, 2018 (Images 1 and 2). The Stage 2 field assessment was conducted on June 22 and 25, 2018 under partially cloudy to clear skies and temperatures between 18° and 28°C (Images 3 - 8).

The agricultural fields were assessed by pedestrian survey at five metre intervals, and the interval was intensified to one metre around artifact finds for a minimum of 20 metres. The study area fields were partially divided by a tree row approximately six metres wide. The background research indicated that this division has existed since the 1870s and it was not possible to test pit this area due to large tree root systems and piles of field stone presumably removed from the field for the last 150 years. The undergrowth of this area was dense so photographs were uninformative. There is an easement with two buried pipelines running diagonally across the fields which was constructed in the 1950s. The pedestrian transects continued across this area, which had visible subsoil and increased amounts of field stone. A total of 30 artifacts were recovered from 28 locations (see details below).

2.4 Record of Finds

2.4.1 Artifacts

A total of 30 artifacts were recovered during the Stage 2 pedestrian survey of 14.94 hectares of agricultural fields. All the artifacts are lithic tools or flakes that indicate an affiliation with precontact Indigenous people that have lived in the Niagara Peninsula for over 10,000 years.

2.4.1.1 Find 1, AgGt-260

Twenty-three lithic artifacts were recovered from 21 stations across a 32 by 58 metre scatter (Map 10). The artifacts are clustered in two smaller loci. The western locus includes one Haldimand chert, Hi-Lo project point, one Onondaga chert biface, a utilized flake graver, a utilized flake scraper and four flakes from a 25 by 11 metre scatter (Findspots 1.01-1.08) (Image 9). The eastern locus includes one retouched flake and eleven flakes from a 24 by 12 metre scatter (Findspots 1.11-1.20). Findspots 1.13 and 1.16 in the eastern locus had two flakes at each location. There are

outlying flakes located at least 13 metres to the north (Findspots 1.09-1.10) and 14 metres to the south (Findspot 1.21).

The Hi-Lo projectile point exhibits the typical excurvate blade with a concave base (Table 3; Image 9). This multi-purpose tool style identifies the site as a late, Late Paleo-Indian occupation (8500–8000 B.C.) (Ellis and Deller 1990). Classic forms of this point have a distinct, although not pronounced, stem or juncture of the wider fore-section and narrower basal area, but the Findspot 1.04 example is the shallowly side-notched variety of the Hi-Lo point (Ellis and Deller 2013). The point exhibits typical basal grinding, but no grinding of the lateral edges. The point is slightly alternately bevelled and has a slightly convex edge shape which indicates only minimal resharpening. The Haldimand chert raw material is used on 32 percent of the Hi-Lo points in the Niagara Peninsula (Pengelly and Tinkler 2004). All the other artifacts recovered from AgGt-260 are Onondaga chert, which is the closer of the two lithic sources. Onondaga chert outcrops at several locations along the north shore of Lake Erie from Fort Erie west to near Port Dover (Eley and von Bitter 1989). Haldimand chert outcrops in the Onondaga Escarpment primarily west of the Grand River (Parker 1986). The rough biface recovered at Findspot 1.05 is very similar to those described by Ellis and Deller in their breakdown of the serial biface reduction sequence utilized in the creation of some Hi-Lo points (Ellis and Deller 2013: 10-11).

Table 3: Bifacial artifact analysis.

Borden #	Cat. #	Freq	Wt	Artifact Type	Type	Mat	L	Wd	Thick	Blade L	Neck Wd	Basal Wd	Basal Ind't	Portion	Lateral Edge Shape	Cross-Section	Basal Shape	Haft Element	Grind Locale	Comments
AgGt-260	1.04	1	7.9	Point	Hi-Lo	HAL	(32.0)	24.5	8.4	(21.0)	18.0	18.4	1.7	Tip Missing	Slightly convex	Alt. Bevel	Convex	Side	Base 13.2	one side notch prominent
AgGt-260	1.05	1	22	Biface	Rough	ONO	(51.0)	30.0	14.6			19.3		Tip Missing	Slightly convex	Bi convex	Straight			
	4.01	1	3.9	Biface	Finished	ONO	(29.0)	24.0	6.6	(34.0)				Tip	Slightly convex	Plano-Convex				median ridge
AgGt-261	5.01	1	6.3	Point	Levanna	ONO	(32.0)	28.4	5.8	(35.0)		28.4	3.6	Tip Missing	Straight	Bi convex	Convex			irreg. flaking

ONO=Onondaga; HAL=Haldimand; (#) indicates incomplete measurements

Three artifacts from AgGt-260 have evidence of small flakes removed from one or more surfaces that indicate use as a scraping tool (Table 4; Image 9). These expedient tools are generally considered to have been used briefly as either cutting tools or scrapers and then discarded. A distinction is made between modification that extends less than two millimetres from the edge (utilized flakes) and modification that is greater than two millimetres (retouched flakes). Two utilized flakes and one retouched flake were identified.

Table 4: Analysis of utilized and retouched flakes from AgGt-260.

Borden #	Cat. #	Freq	Wt	Type	Flake Type	Mat	L	Wd	Thick	Surface 1	Wear Locale 1	Wear Shape 1	Wear L 1	Surface 2	Wear Locale 2	Wear Shape 2	Wear L 2	Tool Type
AgGt-260	1.01	1	2.5	Utilized Flake	Biface thinning	ONO	19	31	4.4	Dorsal	Right lateral	Concave	16.5	Dorsal	Distal	Convex	12.8	Graver
AgGt-260	1.08	1	3	Utilized Flake	Secondary decortication	ONO	21	18	8.6	Dorsal	Right lateral	Slightly convex	7.6					Scraper
AgGt-260	1.19	1	4.2	Retouched Flake	Core trimming	ONO	26	28	5.5	Dorsal	Distal	Slightly convex	11.5					Scraper

Chipped lithics are distinguished by modification through percussion and pressure flaking to modify stone objects (Table 5; Image 9). The presence of the six *core trimming* flakes which are produced from shaping and trimming cores in order to maximize the production of primary flakes may be from an unworked surface of one of these very rough bifaces as it was being reduced. Further evidence of the early stages of lithic reduction is the three pieces of Onondaga *shatter* which is created during hard hammer reduction of large bifaces and cores. *Biface thinning* flakes (n=3) are produced through the removal of some of the central mass of the biface in order to make the biface thinner. These flakes are characterized by their acute angle-striking platform, which may be faceted from the preparation of the platform or the removal of flakes from the opposite side of the biface. The two *biface retouch* flakes are similar to the biface thinning flakes, but are smaller flakes usually created during the final pressure flaking or resharpening of a biface. Four flakes are fragments missing a striking platform making it difficult to assign the flake to any other particular flake type. Many fragments are created during the knapping process, but they can also be created in post-depositional processes such as trampling.

Table 5: Summary of flakes from AgGt-260.

Flake Type	Freq	Wt.
Biface retouch	2	0.1
Biface thinning	3	3.8
Core trimming	6	22.6
Fragment	4	9.8
Shatter	3	48.6
Total	18	84.9

2.4.1.2 Isolated Finds 2.01 to 7.02

Findspot 2.01 is an isolated Onondaga chert biface thinning flake (Image 10). No additional artifacts were discovered during an intensified inspection of the area, and the closest other artifact is Findspot 4.01, located 75 metres to the southeast.

Findspot 3.01 is an isolated Onondaga chert core trimming flake recovered in the gully, close to the dry stream that runs through the middle of the property (Image 10). No additional artifacts were discovered during an intensified inspection of the area, and the closest other artifact is found over 100 metres away.

Findspot 4.01 is an isolated Onondaga finished biface tip (Table 3; Image 10). The finished biface is thin and well made, but there is not enough to be diagnostic of a specific time-period. No additional artifacts were discovered during an intensified inspection of the area, and the closest find is Findspot 2.01, located 75 metres to the northwest.

Findspot 5.01 is an isolated projectile point typed as a Levanna from the Late Woodland (900 - 1350 AD) (Table 3; Image 10). These points are medium to large, thin, triangular points (Ritchie 1971). This example is missing the tip but has a concave base and straight lateral edges. Archaeological sites of the Late Woodland period can be quite large and have a broad range of artifacts including ground stone, bone tools and ceramic artifacts. Since no further artifacts were discovered during an intensified surface inspection, it is regarded as a hunting loss. It has been registered in the Ontario Archaeological Sites Database as AgGt-261. The closest other artifact is Findspot 6.01, found 178 metres to the west.

Findspot 6.01 is isolated Onondaga biface thinning flake (Image 10). No additional artifacts were discovered during an intensified inspection of the area, and the closest other artifact is Findspot 7.02, found 78 metres to the north.

Findspots 7.01 and 7.02 are two Onondaga chert flakes recovered 15 metres apart (Image 10). The two artifacts, one core trimming flake and one flake fragment, were recovered close to the western property boundary, but no additional artifacts were recovered on the adjacent property near this area during the Stage 2 assessment conducted in 2005 (AMICK 2005).

2.4.2 Inventory of the Documentary Record

The documentary record of the project consists of three GPS tracks and 12 geo-tagged digital photographs and this report. The 30 artifacts recovered have been separately bagged and labeled and aggregated into one 23 by 14 cm resealable plastic bag. The artifact collection is boxed in one file box. The documentary record will be stored at the office of A. M. Archaeological Associates until they can be deposited at a long-term storage facility with the approval of the Ministry of Tourism, Culture, and Sport.

3.0 ANALYSIS AND CONCLUSIONS

3.1 Analysis

The study area was considered to have archaeological potential due to the proximity to an ephemeral stream that runs northerly through the middle portion of the property. There is no indication that there have ever been any structures built on or within 100 metres of the study area.

The discovery of the 23 artifacts at Findspots 1.01 to 1.21 are registered as AgGt-260 and its association with the Late Paleo-Indian Hi-Lo period is a rare find for the Niagara Peninsula. The recovery of two bifacial tools and three expedient flake scraping tools from the controlled surface pickup is also uncommonly productive for sites of this period. A Hi-Lo site, AkGv-91, excavated in Toronto by MTO in 1989 yielded a total of 98 flakes and one projectile point from the combined Stages 2, 3 and 4 (Murray 1997). Most Late Paleo-Indian sites in southern Ontario appear to be small camps or way-stations like the earlier Holcombe sites (Ellis and Deller 1989). There are occasionally larger sites that consist of discrete artifact concentrations distributed over several hectares such as Deavitt (Dibb 1985) and Welke-Tonkonoh (Ellis 1981; Ellis and Deller 1982).

The remaining finds including five Onondaga chert flakes (FS 2.01, 3.01, 6.01, 7.01 & 7.02), one biface tip (FS 4.01) and one Levanna point (FS 5.01, AgGt-261) appear to be unrelated to the artifacts from Findspot 1 since they are a minimum distance of 95 metres from the AgGt-260 artifact concentration. This broad scatter of isolated finds is similar to the results of the other two large Stage 2 assessments conducted near the study area. As noted in *Section 1.3.2 Registered Archaeological Sites* above, eight of the 20 registered sites within 1 km are locations where only a single isolated lithic artifact was recovered, and five more sites had only three lithic artifacts.

3.2 Conclusions

Findspot 1 (1.01 to 1.21) will require Stage 3 site-specific test excavation since it meets the following standards from *Section 2.2 Analysis: Determining the requirement for Stage 3 assessment* from the *Standards and Guidelines for Consultant Archaeologists, 2011* (MTCS 2011: 39-40):

1a. pre-contact diagnostic artifacts or a concentration of artifacts (or both):

within a 10 m by 10 m pedestrian survey area:

(1) at least one diagnostic artifact or fire-cracked rock in addition to two or more nondiagnostic artifacts

Additionally, the Hi-Lo projectile point is an artifact of special interest as per *Section 2.2, Standard 1b. III* due to its Late Paleo-Indian affiliation and its discovery alone would trigger a Stage 3 site-specific assessment.

A Stage 3 site-specific assessment is recommended to fulfil the following objectives:

- To determine the extent of the archaeological site and the characteristics of the artifacts.
- To collect a representative sample of artifacts.
- To assess the cultural heritage value or interest of the archaeological site.
- To determine the need for mitigation of development impacts and recommend appropriate strategies for mitigation and future conservation.

Since AgGt-260, was discovered using Stage 2 pedestrian survey and a concurrent, controlled surface pickup, the Stage 3 strategy should include the excavation of one-metre square test units (as per *Section 3.2.2 Test unit excavation*) (MTCS 211: 48-49). The test unit excavation should follow the standards below:

1. Excavate by 1 m square units.
2. To determine the placement of test units, establish a grid on the site based on the permanent datum to at least the accuracy of transit and tape measurements.
3. Excavate test units by hand.
4. Excavate test units by systematic levels (stratigraphic or standardized).
5. Excavate test units into the first 5 cm of the subsoil unless excavation uncovers a cultural feature.
6. If test unit excavation uncovers a cultural feature, do not excavate into feature fill.
7. Screen all excavated soil through mesh with an aperture of no greater than 6 mm. For single component Paleo-Indian sites, a sample of units (10 percent of the total number of units in heavy soil), screen the entire contents of each unit through mesh with an aperture of no greater than 3 mm.
8. Unless otherwise specified, collect and retain all artifacts. Record and catalogue them by their corresponding grid unit designation.

The Stage 3 assessment should follow *Sections 3.2.2 Test unit excavation* and *3.2.3 Determining the location and number of test units* and *Table 3.1* (MTCS 2011:49-53). The site is determined to be a Paleo-Indian period site and will require Stage 4 excavation according to *Section 3.4, Standard*

Ic (MTCS 2011: 57). It is estimated that this site will require the Stage 3 excavation of 35-45 one-metre test units placed at 10 metre intervals across the 58 by 32 metre scatter, including 40 percent focusing on areas of interest within the site extent according to *Table 3.1 Standard 3 and 4* (MTCS 2011: 51). Additionally, 10 percent of the total number of units should be screened with 3 mm mesh, based on the time period of the site and presence of heavy clay soils (MTCS 2011: 49).

The remaining isolated artifacts recovered during the Stage 2 pedestrian survey of the ploughed and weathered fields are interpreted as part of the dispersed spread of artifacts that exemplify the extensive occupation of the Niagara Peninsula by Indigenous peoples for millennia. No site-specific assessment is required for Findspots 2.01, 3.01, 4.01, 5.01 (AgGt-261), 6.01, 7.01 and 7.2.

4.0 RECOMMENDATIONS

On the basis of the above information, we recommend the following:

1. The Stage 2 pedestrian assessment of the study area has resulted in the discovery of an archaeological site registered as AgGt-260. This site documents a Late Paleo-Indian, Hi-Lo occupation of the area and has cultural heritage value. This indicates that there are further concerns for the property and Stage 3 assessment is required and future Stage 4 assessment. The Stage 3 assessment should follow *Sections 3.2.2 Test unit excavation* and *3.2.3 Determining the location and number of test units* and *Table 3.1* (MTCS 2011:49-51). It is estimated that this site will require the excavation of 35-45 one-metre test units placed at 10 metre intervals across the 58 by 32 metre scatter, including 40 percent focusing on areas of interest within the site extent according to *Table 3.1 Standard 3 and 4* (MTCS 2011: 51). Additionally, 10 percent of the total number of units should be screened with 3 mm mesh, based on the time period of the site and presence of heavy clay soils (MTCS 2011: 49). More detailed location information including table of coordinates and mapping is included in the Supplementary Documentation. Indigenous engagement should be initiated at the beginning of Stage 3 and may involve direct involvement in excavation and monitoring.
2. The remaining isolated artifacts recovered during the Stage 2 pedestrian survey of the ploughed and weathered fields are interpreted as part of the dispersed spread of artifacts that exemplify the extensive occupation of the Niagara Peninsula by Indigenous peoples for millennia. No site-specific assessment is required for Findspots 2.01, 3.01, 4.01, 5.01, 6.01, 7.01 and 7.2. No further work is required for the remaining area of the study lands.

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

1. Advice on compliance with legislation is not part of the archaeological record. However, for the benefit of the proponent and approval authority in the land use planning and development process, the report must include the following standard statements:
 - a. This report is submitted to the Minister of 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 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 and Culture, 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.
 - b. 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 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 Archaeological Reports referred to in Section 65.1 of the *Ontario Heritage Act*.
 - c. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the *Ontario Heritage Act*.
 - d. 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) requires that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

Contact Information:

1. In the event that deeply buried archaeological remains are encountered on the property during construction activities, the Archaeology Programs Unit, Programs and Services Branch Unit of the Ministry of Tourism, Culture and Sport should be notified immediately at 416-212-8886.
2. In the event that human remains are encountered during construction, the proponent should immediately contact both the Ministry of Tourism, Culture, and Sport and the Registrar or Deputy Registrar of Cemeteries at the Cemeteries Regulation Unit, Ministry of Government Services, (416) 326-8404 or (416) 326-8514.

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7.0 CATALOGUE

Borden #	Cat#	Freq	Wt	Artifact Type	Sub Type	Material	Comments
AgGt-260	1.01	1	2.5	Utilized Flake	Graver	Onondaga	
AgGt-260	1.02	1	24.9	Flake	Shatter	Onondaga	
AgGt-260	1.03	1	0.05	Flake	Biface retouch	Onondaga	
AgGt-260	1.04	1	7.9	Point	Hi-Lo	Haldimand	one side notch prominent
AgGt-260	1.05	1	22	Biface	Rough	Onondaga	
AgGt-260	1.06	1	0.5	Flake	Biface thinning	Onondaga	
AgGt-260	1.07	1	2	Flake	Fragment	Onondaga	
AgGt-260	1.08	1	3	Utilized Flake	Scraper	Onondaga	
AgGt-260	1.09	1	1.4	Flake	Biface thinning	Onondaga	
AgGt-260	1.10	1	0.8	Flake	Fragment	Onondaga	
AgGt-260	1.11	1	2.7	Flake	Core trimming	Onondaga	
AgGt-260	1.12	1	2.1	Flake	Shatter	Onondaga	
AgGt-260	1.13	1	21.6	Flake	Shatter	Onondaga	
AgGt-260	1.13	1	1	Flake	Fragment	Onondaga	
AgGt-260	1.14	1	6	Flake	Fragment	Onondaga	cortex present
AgGt-260	1.15	1	0.9	Flake	Core trimming	Onondaga	
AgGt-260	1.16	2	11.5	Flake	Core trimming	Onondaga	
AgGt-260	1.17	1	0.05	Flake	Biface retouch	Onondaga	
AgGt-260	1.18	1	4	Flake	Core trimming	Onondaga	
AgGt-260	1.19	1	4.2	Retouched Flake	Scraper	Onondaga	
AgGt-260	1.20	1	1.9	Flake	Biface thinning	Onondaga	
AgGt-260	1.21	1	3.5	Flake	Core trimming	Onondaga	
<i>Subtotal</i>		23					
	2.01	1	1	Flake	Biface thinning	Onondaga	
	3.01	1	11.2	Flake	Core trimming	Onondaga	
	4.01	1	3.9	Biface	Finished	Onondaga	median ridge
AgGt-261	5.01	1	6.3	Point	Levanna	Onondaga	irreg. flaking
	6.01	1	0.3	Flake	Biface thinning	Onondaga	
	7.01	1	0.2	Flake	Fragment	Onondaga	
	7.02	1	1.8	Flake	Core trimming	Onondaga	
Total		30					

8.0 IMAGES



Image 1: Initial unacceptable field conditions on April 26.



Image 2: Initial unacceptable field conditions on April 26.



Image 3: Southeast view of artifact locations at Findspot 1, AgGt-260.



Image 4: West view of artifact locations at Findspot 1, AgGt-260.



Image 5: Northeast view of surface conditions with thin rows of wheat stubble.



Image 6: South view of surface conditions along the east side of the southern field.



Image 7: Southwest view of surface conditions along the east side of the southern field.



Image 8: North view of surface conditions along the west side of the southern field.

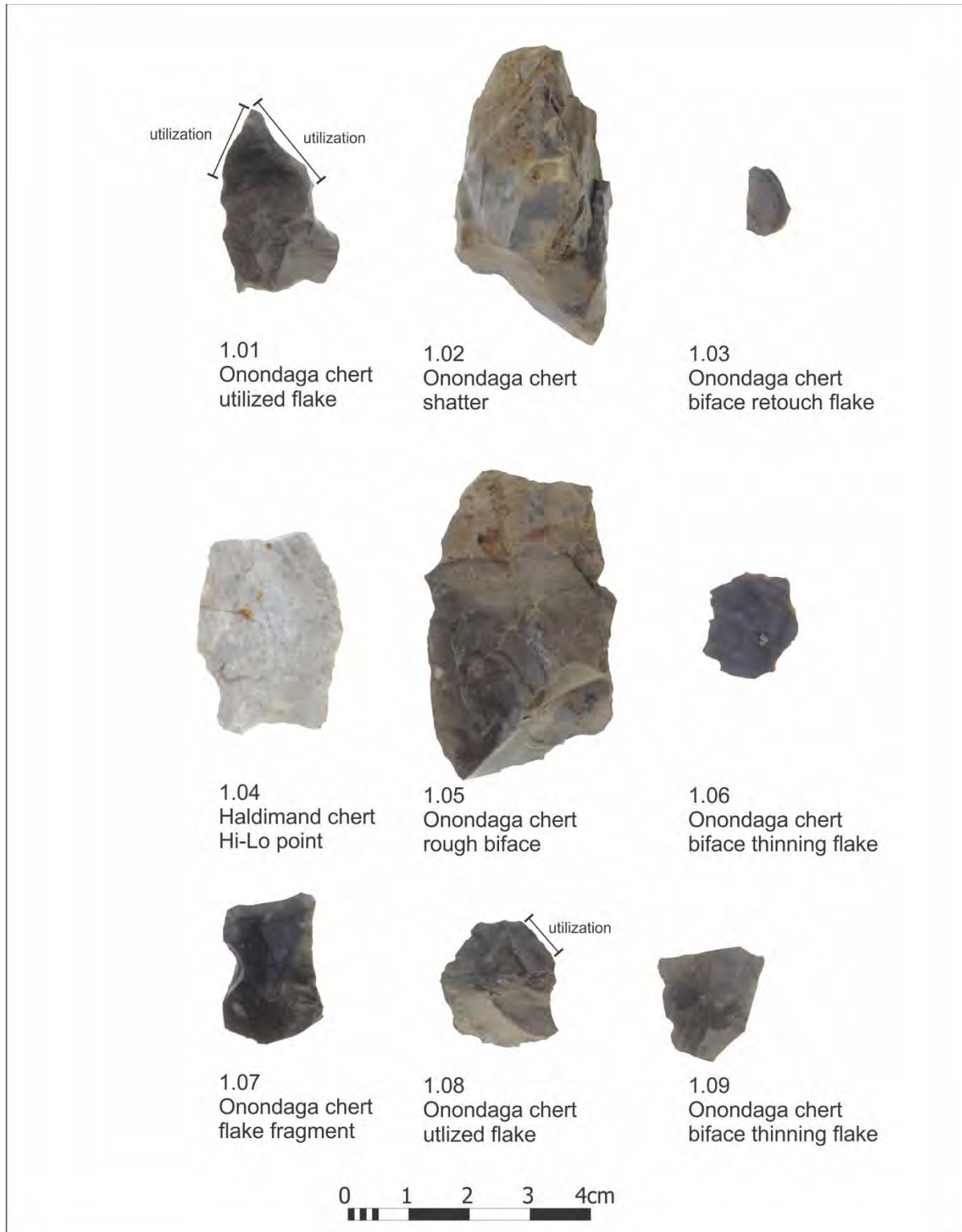


Image 9: Findspots 1.01 to 1.09 artifact photos.

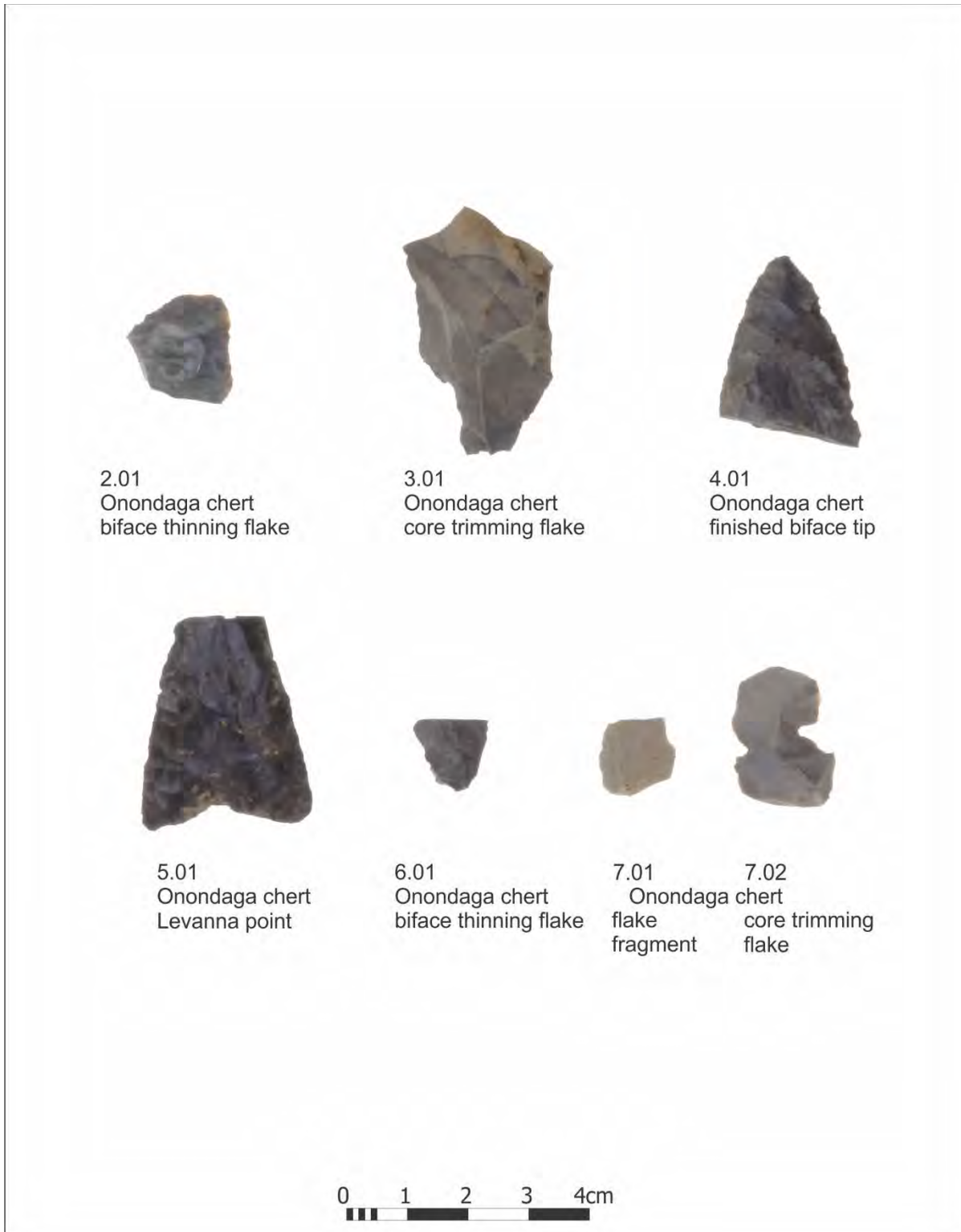
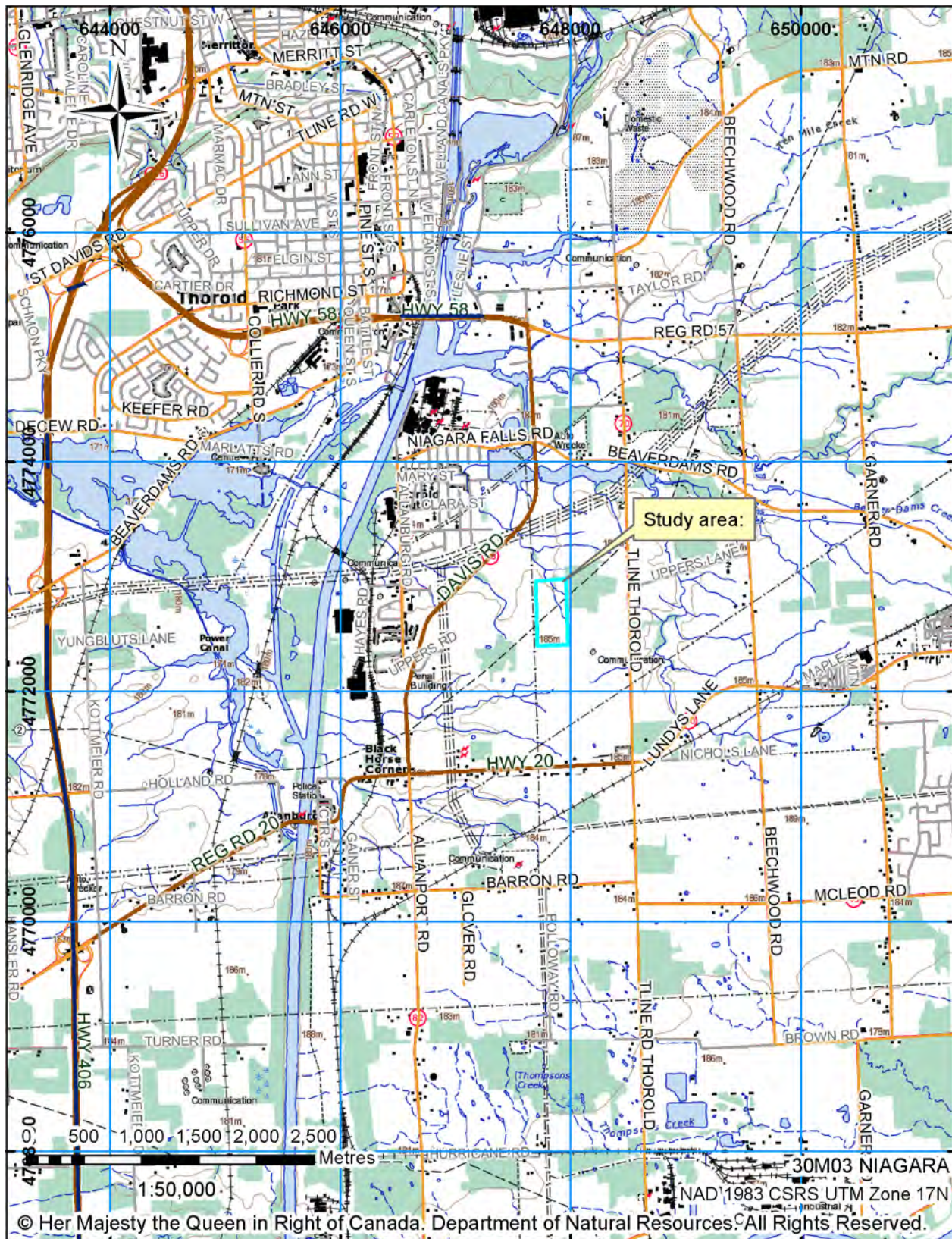
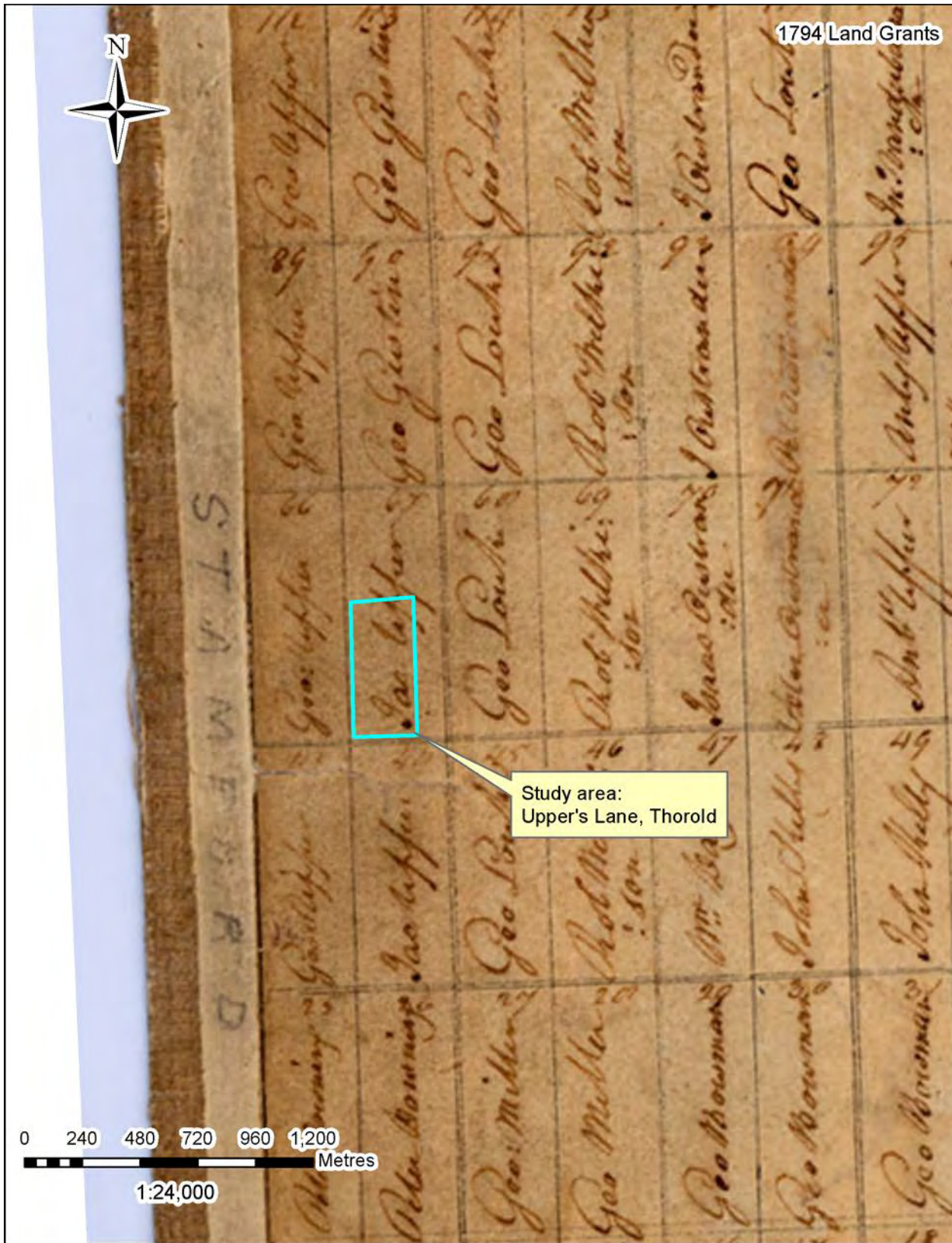


Image 10: Findspots 2.01 to 7.02 artifact photos.

9.0 MAPS

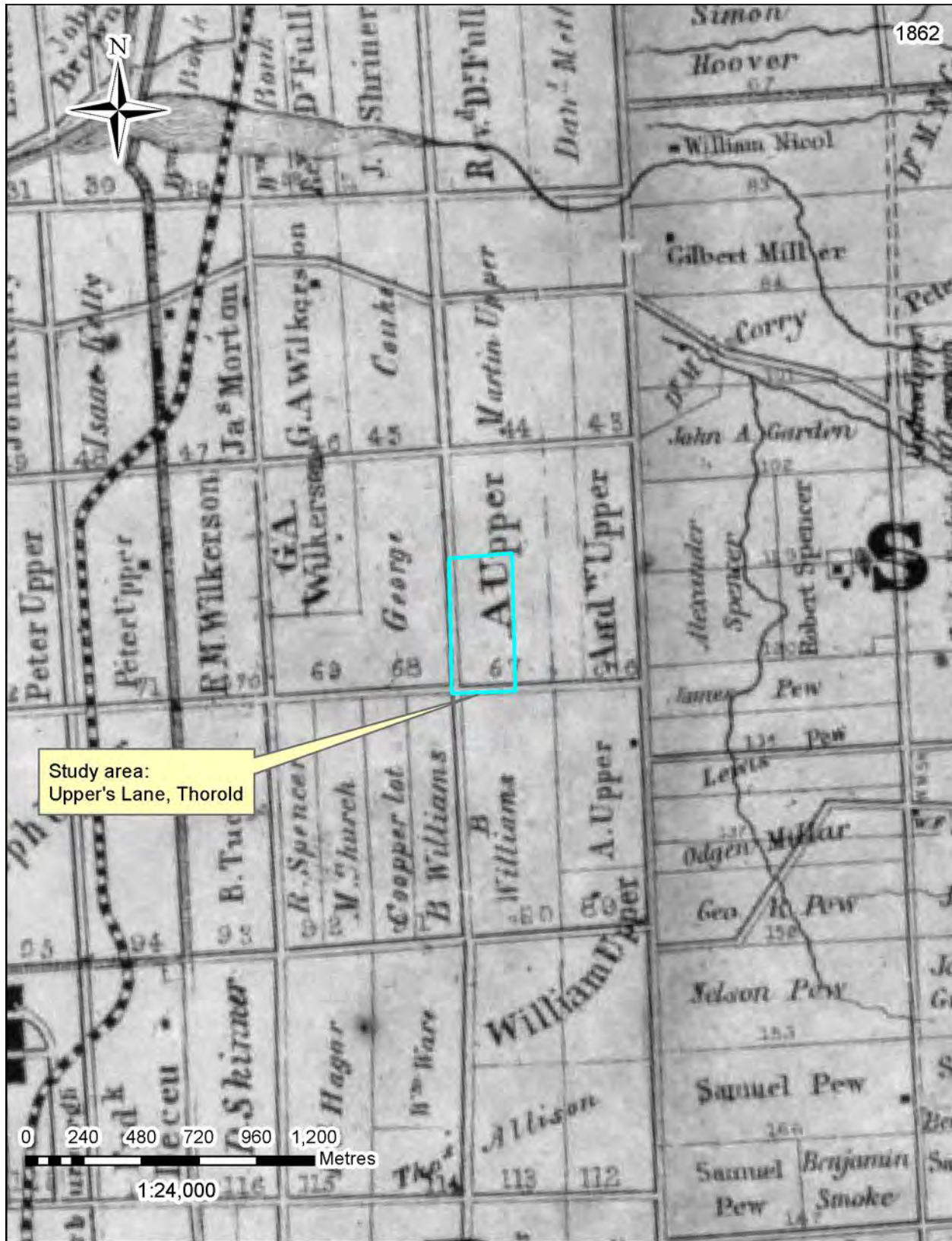




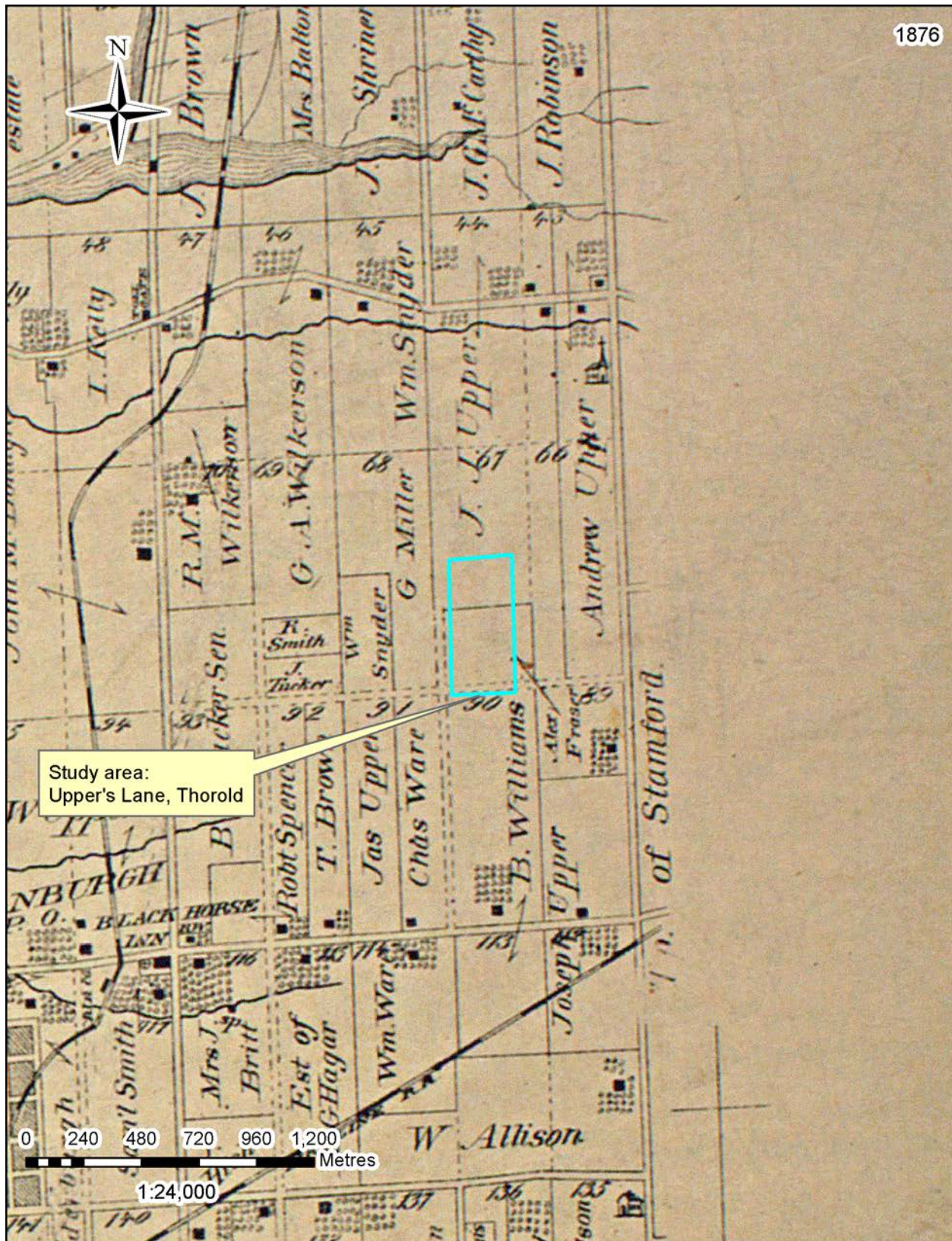
Map 2: Map showing Jacob Upper with land grant for Lots 44 and 67 in Thorold Township (Archives of Ontario 1794).



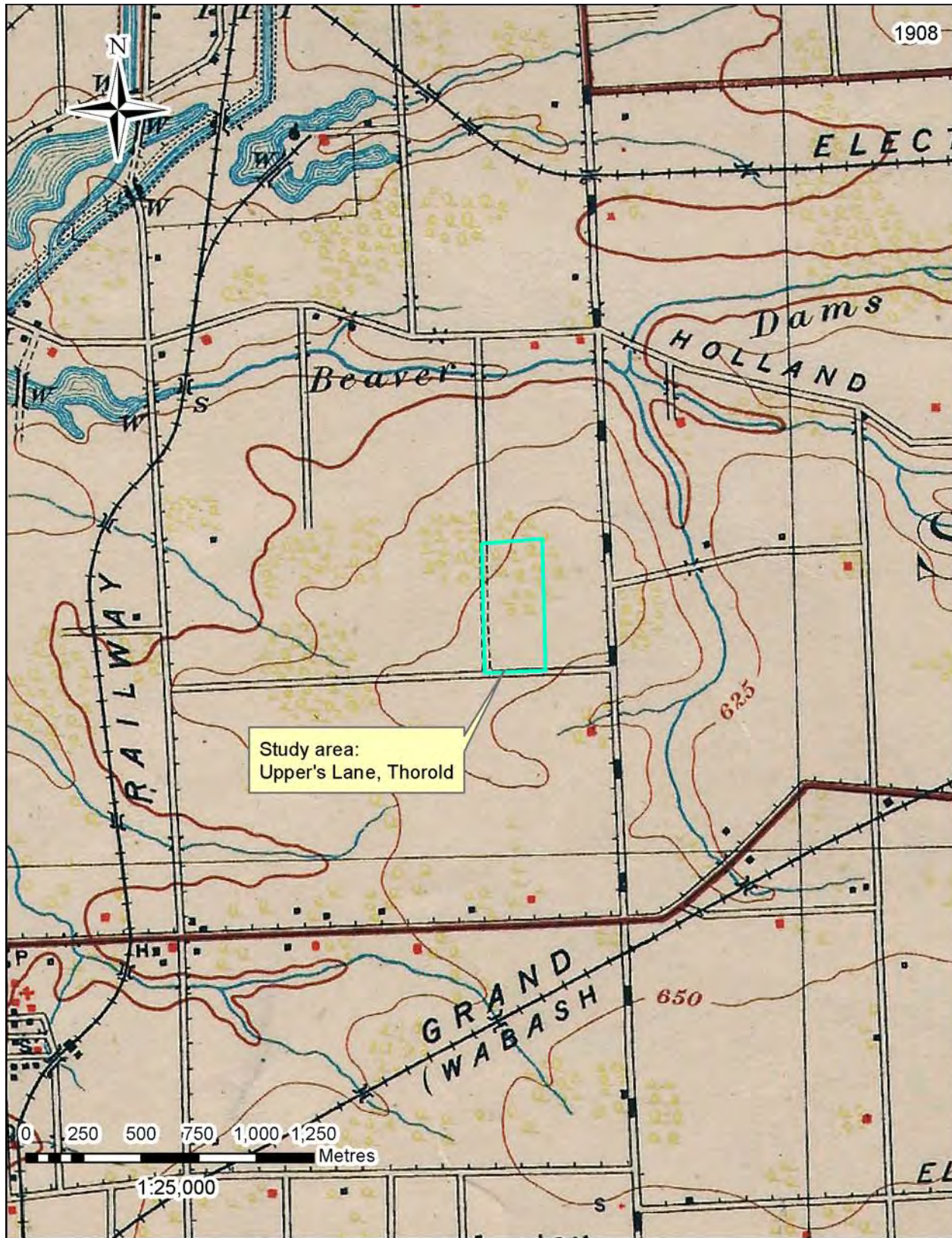
Map 3: 1814 Plan of the Niagara Frontier showing the rough location of the study area in an area partially cleared of forest (Hughes 1814).



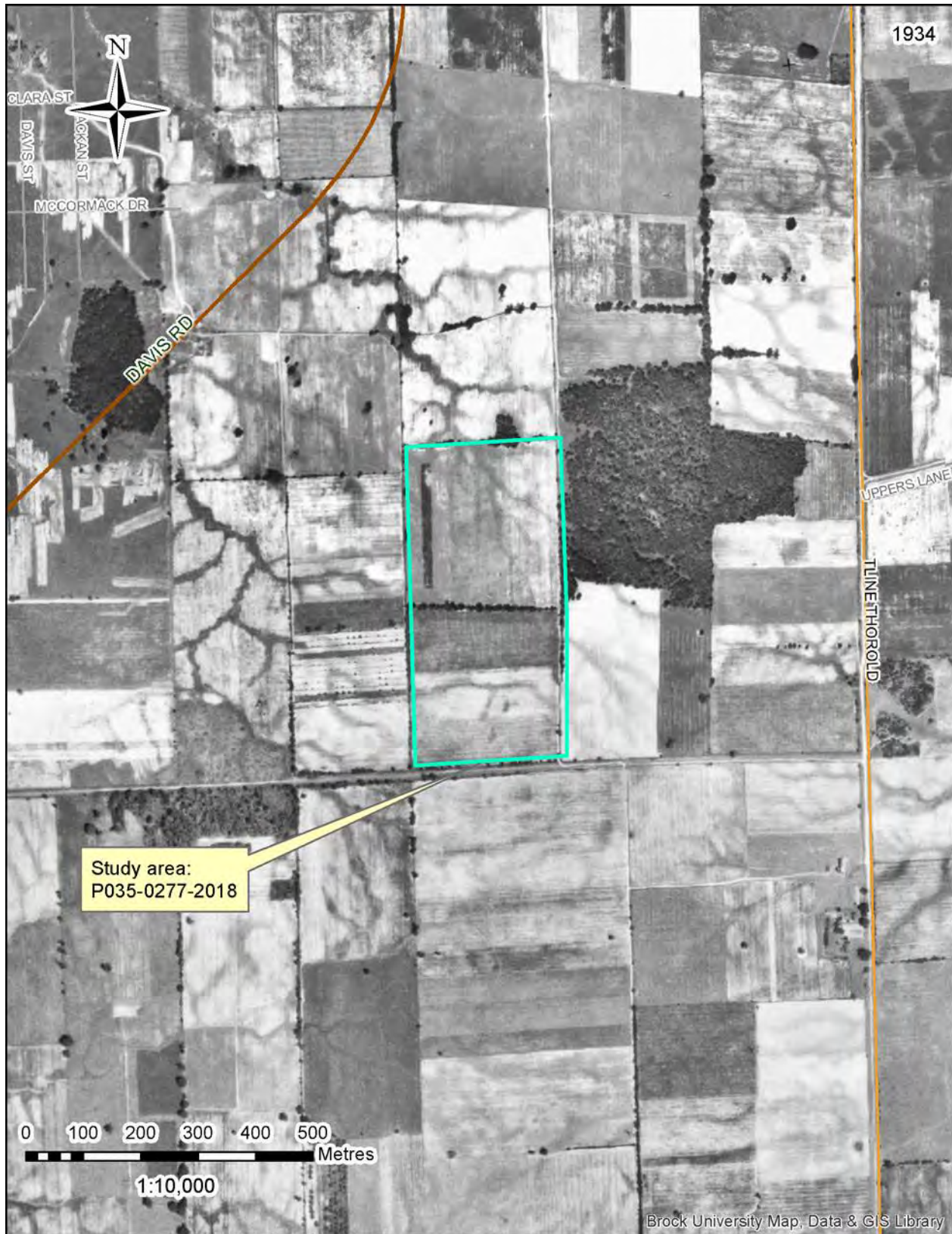
Map 4: 1862 map of the Upper's Lane study area showing A. Upper but no dwelling (Tremaine 1862).



Map 5: 1876 Thorold Township map location of Upper's Lane study area showing property division (Page, H. R. and Co. 1876).



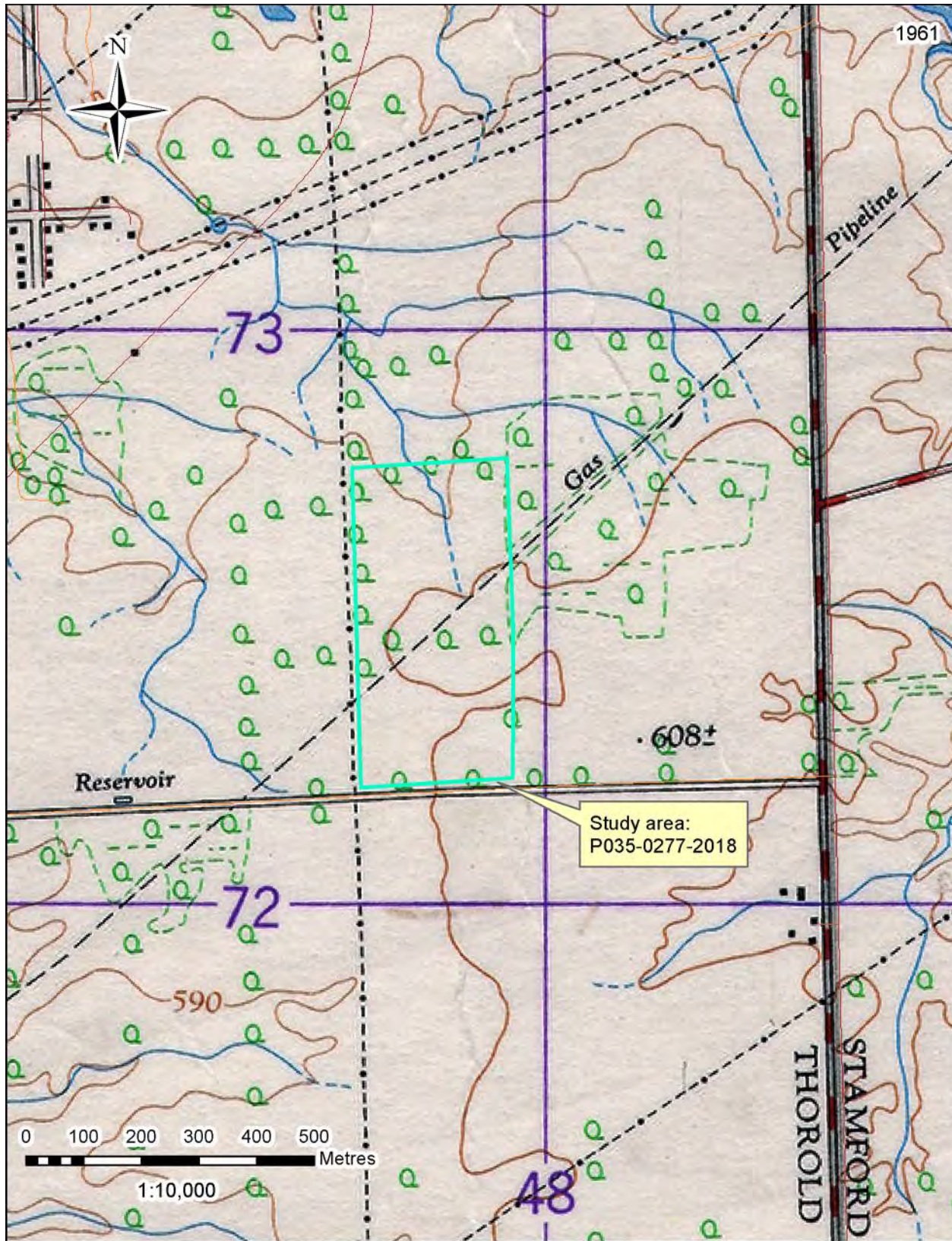
Map 6: 1908 topographic map showing vacant lands of the study area (DMD 1908).



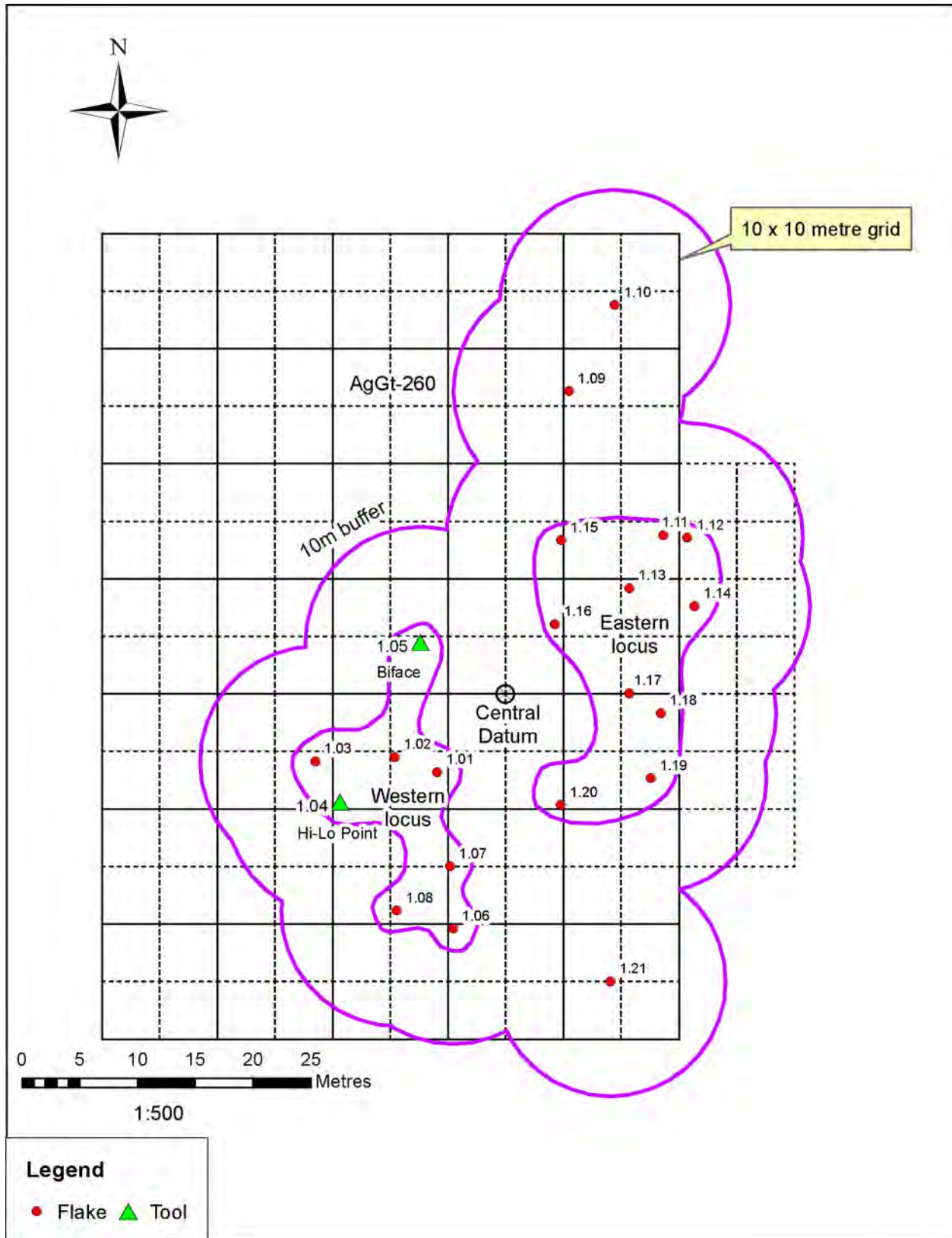
Map 7: 1934 aerial view of the study area (Brock University 1934).



Map 8: 1954 aerial view of the study area showing the diagonal crossing of the pipeline (Huntingdon Survey Corporation Limited 1954).



Map 9: 1961 topographic map showing stream through northern half of the study area (ASE 1961).



Map 10: Distribution of artifacts at Findspots 1.01 to 1.21.



Map 11: 2015 aerial view of the study area showing pedestrian assessed area and photo locations.



Map 12: Survey plan of the study area showing pedestrian assessed area and photo locations.

