ARCHAEOLOGY | HERITAGE | OUTREACH | EDUCATION

Stage 1 and 2 Archaeological Assessments
South Central Industrial Bridge Crane Addition
1914 Glover Road
City of Thorold
Regional Municipality of Niagara
Part of Lot 138
Geographic Township of Thorold
Former Welland County, Ontario

Prepared for
South Central Industrial
c/o
G. Douglas Vallee Ltd.
2 Talbot Street North
Simcoe, ON N3Y 3W4
Tel: (519) 426-6270

Licensed under
P.J. Racher
MCM Licence #P007
PIF #P007-1393-2022
ARA File #2022-0306

11/04/2023

Original Report

EXECUTIVE SUMMARY

Under a contract awarded in July 2022, Archaeological Research Associates Ltd. carried out Stage 1 and 2 assessments of lands with the potential to be impacted by the addition of a bridge crane to the South Central Industrial facility located at 1914 Glover Road in the City of Thorold, Regional Municipality of Niagara, Ontario. The proposed structure will allow for the loading and unloading of steel products in a safe and efficient manner. The assessments were carried out in support of a Zoning By-law Amendment application and were triggered by the requirements set out in Section 2.6 of the Provincial Policy Statement, 2020 issued under Section 3 of the *Planning Act*. This report documents the background research and fieldwork involved in the investigation and presents conclusions and recommendations pertaining to archaeological concerns.

The Stage 1 and 2 assessments were conducted in September and November 2022 under Project Information Form #P007-1393-2022. The investigation was limited to the area to be rezoned, which consists of the bridge crane location and existing buildings related to the welding and fabrication business. The balance of the Part 1 and Part 2 portions of the property will remain as currently zoned, and a reduction of scope was therefore warranted. The approval authority has confirmed their support of this approach. Legal permission to enter and conduct all necessary fieldwork activities within the assessed lands was granted by the property owner. At the time of assessment, the study area consisted of extant structures, work areas and agricultural lands.

The Stage 1 assessment determined that the study area comprised a mixture of areas of archaeological potential and areas of no archaeological potential. The Stage 2 assessment did not result in the identification of any archaeological materials. It is recommended that no further assessment be required within the study area. The balance of the Part 1 and Part 2 portions of the property do not require additional assessment as part of the subject project. These lands were not assessed and may require further assessment if development is contemplated in the future. Potential modelling and recommendations for the remainder of the property would be addressed at that time as part of the associated development application.

TABLE OF CONTENTS

IMAGES

MAPS

TABLES

ABBREVIATIONS

ARA – Archaeological Research Associates Ltd.
MCM – Ministry of Citizenship and Multiculturalism
PIF – Project Information Form
S&Gs – Standards and Guidelines for Consultant Archaeologists

PERSONNEL

Project Director: P.J. Racher (#P007)
Operations Manager: C.E. Gohm (#R187)
Project Archaeologist: A. Dunlop (#P1146)
Field Director: C. Pallett (#R1112)
Field Technicians: S. Bolstridge (#R471), K. Shirton
Cartographers: A. Bailey (#R1069), M. Johnson
Report Writer: D. Worby (#R1190)
Editor: C.J. Gohm

ENGAGED GROUPS

Department of Consultation & Accommodation
Mississaugas of the Credit First Nation
Contacts: A. LaForme, M. LaForme, M.-A. Prevost
Field Representatives: M. LaForme, J. Lovegrove

Haudenosaunee Development Institute
Haudenosaunee Confederacy Chiefs Council
Contacts: O. Greene, S. Martin, T. Williams
Field Representatives: J. Miller, J. Williams

Six Nations Lands & Resources Office
Six Nations of the Grand River Elected Council
Contacts: T. Hill-Montour, D. LaForme
Field Representative: J. Hill

1.0 PROJECT CONTEXT

1.1 Development Context

Under a contract awarded in July 2022, Archaeological Research Associates Ltd. (ARA) carried out Stage 1 and 2 assessments of lands with the potential to be impacted by the addition of a bridge crane to the South Central Industrial facility located at 1914 Glover Road in the City of Thorold, Regional Municipality of Niagara, Ontario. The proposed structure will allow for the loading and unloading of steel products in a safe and efficient manner. The assessments were carried out in support of a Zoning By-law Amendment application and were triggered by the requirements set out in Section 2.6 of the Provincial Policy Statement, 2020 issued under Section 3 of the *Planning Act*. This report documents the background research and fieldwork involved in the investigation and presents conclusions and recommendations pertaining to archaeological concerns.

The study area consists of multiple parcels of land with a total area of 0.80 ha (Map 1). These parcels are generally bounded by grassed areas to the north, agricultural lands to the east and south, the remainder of the facility to the southwest and Glover Road to the west. In legal terms, the study area falls on part of Lot 138 in the Geographic Township of Thorold, former Welland County. The Crown obtained these lands from the Mississaugas as part of a much larger purchase in 1784, but there were uncertainties relating to the area involved. The extent of the cession was clarified during the Between the Lakes Purchase (Treaty 3) in 1792.

The Stage 1 and 2 assessments were conducted in September and November 2022 under Project Information Form (PIF) #P007-1393-2022. The investigation was limited to the area to be rezoned, which consists of the bridge crane location and existing buildings related to the welding and fabrication business. The balance of the Part 1 and Part 2 portions of the property will remain as currently zoned, and a reduction of scope was therefore warranted. The approval authority has confirmed their support of this approach. Legal permission to enter and conduct all necessary fieldwork activities within the assessed lands was granted by the property owner. In compliance with the objectives set out in Section 1.0 and Section 2.0 of the 2011 *Standards and Guidelines for Consultant Archaeologists* (*S&Gs*), the investigation was carried out in order to:

- Provide information concerning the geography, history and current land condition of the study area;
- Determine the presence of known archaeological sites in the study area;
- Evaluate in detail the archaeological potential of the study area;
- Empirically document all archaeological resources within the study area;
- Determine whether the study area contains archaeological resources requiring further assessment; and
- Recommend appropriate Stage 3 assessment strategies, if any archaeological resources requiring further assessment are identified.

The Ministry of Citizenship and Multiculturalism (MCM) is asked to review the results and recommendations presented herein and enter the report into the Ontario Public Register of Archaeological Reports. A Record of Indigenous Engagement is included in the project report package in accordance with the requirements set out in Section 7.6.2 of the 2011 *S&Gs*. The

additional directions provided in the 2018 *Mississaugas of the Credit First Nation Standards and Guidelines for Archaeology* were considered throughout the investigation.

1.2 Historical Context

After a century of archaeological work in southern Ontario, scholarly understanding of the historical usage of the area has become very well-developed. With occupation beginning in the Palaeo period approximately 11,000 years ago, the greater vicinity of the study area comprises a complex chronology of Indigenous and Euro-Canadian histories. Section 1.2.1 summarizes the region's settlement history, whereas Section 1.2.2 documents past and present land uses. One previous archaeological report containing relevant background information was obtained during the research component of the study. This report is summarized in Section 1.3.3, and the reference (including title, author and PIF number) appears in Section 8.0.

1.2.1 Settlement History

1.2.1.1 Pre-Contact

The Pre-Contact history of the region is lengthy and rich, and a variety of Indigenous groups inhabited the landscape. Archaeologists generally divide this vibrant history into three main periods: Palaeo, Archaic and Woodland. Each of these periods comprise a range of discrete sub-periods characterized by identifiable trends in material culture and settlement patterns, which are used to interpret past lifeways. The principal characteristics of these sub-periods are summarized in Table 1.

Table 1: Pre-Contact Settlement History
(Wright 1972; Ellis and Ferris 1990; Warrick 2000; Munson and Jamieson 2013)

Sub-Period	Timeframe	Characteristics
Early Palaeo	9000–8400 BC	Gainey, Barnes and Crowfield traditions; Small bands; Mobile hunters and gatherers; Utilization of seasonal resources and large territories; Fluted points
Late Palaeo	8400–7500 BC	Holcombe, Hi-Lo and Lanceolate biface traditions; Continuing mobility; Campsite/Way-Station sites; Smaller territories are utilized; Non-fluted points
Early Archaic	7500–6000 BC	Side-Notched, Corner-Notched (Nettling, Thebes) and Bifurcate traditions; Growing diversity of stone tool types; Heavy woodworking tools appear (e.g., ground stone axes and chisels)
Middle Archaic	6000–2500 BC	Stemmed (Kirk, Stanly/Neville), Brewerton Side- and Corner-Notched traditions; Reliance on local resources; Populations increasing; More ritual activities; Fully ground and polished tools; Net-sinkers common; Earliest copper tools
Late Archaic	2500–900 BC	Narrow Point (Lamoka), Broad Point (Genesee) and Small Point (Crawford Knoll) traditions; Less mobility; Use of fish-weirs; True cemeteries appear; Stone pipes emerge; Long-distance trade (marine shells and galena)
Early Woodland	900–400 BC	Meadowood tradition; Crude cord-roughened ceramics emerge; Meadowood cache blades and side-notched points; Bands of up to 35 people
Middle Woodland	400 BC–AD 600	Local Saugeen-like tradition; Others argue for Point Peninsula tradition; Ceramics continue but many are undecorated; Seasonal settlements and resource utilization; Each watershed may have had a unique tradition; Regional patterns poorly understood at this time
Middle/Late Woodland Transition	AD 600–900	Princess Point tradition; Cord roughening, impressed lines and punctate designs on pottery; Adoption of maize horticulture at the western end of Lake Ontario; Oval houses and 'incipient' longhouses; First palisades; Villages with 75 people
Late Woodland (Early)	AD 900–1300	Glen Meyer tradition; Settled village-life based on agriculture; Small villages (0.4 ha) with 75–200 people and 4–5 longhouses; Semi-permanent settlements

Sub-Period	Timeframe	Characteristics
Late Woodland (Middle)	AD 1300–1400	Uren and Middleport traditions; Classic longhouses emerge; Larger villages (1.2 ha) with up to 600 people; More permanent settlements (30 years)
Late Woodland (Late)	AD 1400–1600	Pre-Contact Neutral tradition; Larger villages (1.7 ha); Examples up to 5 ha with 2,500 people; Extensive croplands; Also hamlets, cabins, camps and cemeteries; Potential tribal units; Fur trade begins ca. 1580; European trade goods appear

Although Iroquoian-speaking populations tended to leave a much more obvious mark on the archaeological record and are therefore emphasized in the Late Woodland entries above, it must be understood that Algonquian-speaking populations also represented a significant presence in southern Ontario. Due to the sustainability of their lifeways, archaeological evidence directly associated with the Anishinaabeg remains elusive, particularly when compared to sites associated with the more sedentary agriculturalists. Many artifact scatters in southern Ontario were likely camps, chipping stations or processing areas associated with the more mobile Anishinaabeg, utilized during their travels along the local drainage basins while making use of seasonal resources. This part of southern Ontario represents the ancestral territory of various Indigenous groups, each with their own land use and settlement pattern tendencies.

1.2.1.2 Post-Contact

The arrival of European explorers and traders at the beginning of the 17th century triggered widespread shifts in Indigenous lifeways and set the stage for the ensuing Euro-Canadian settlement process. Documentation for this period is abundant, ranging from the first sketches of Upper Canada and the written accounts of early explorers to detailed township maps and lengthy histories. The Post-Contact period can be effectively discussed in terms of major historical events, and the principal characteristics associated with these events are summarized in Table 2.

Table 2: Post-Contact Settlement History
(Smith 1846; WTPH 1887; Coyne 1895; Lajeunesse 1960; Ellis and Ferris 1990; Surtees 1994; Hammerburg 2008; AO 2022)

Historical Event	Timeframe	Characteristics
Early Exploration	Early 17th century	Brûlé explores southern Ontario in 1610/11; Champlain travels through in 1613 and 1615/1616, making contact with a number of Indigenous groups (including the Algonquin, Huron-Wendat and other First Nations); European trade goods become increasingly common and begin to put pressure on traditional industries
Increased Contact and Conflict	Mid- to late 17th century	Conflicts between various First Nations during the Beaver Wars result in numerous population shifts; European explorers continue to document the area, and many Indigenous groups trade directly with the French and English; 'The Great Peace of Montreal' treaty established between roughly 39 different First Nations and New France in 1701
Fur Trade Development	Early to mid-18th century	Growth and spread of the fur trade; Peace between the French and English with the Treaty of Utrecht in 1713; Ethnogenesis of the Métis; Hostilities between French and British lead to the Seven Years' War in 1754; French surrender in 1760
British Control	Mid- to late 18th century	*Royal Proclamation* of 1763 recognizes the title of the First Nations to the land; Numerous treaties subsequently arranged by the Crown; First land cession under the new protocols is the Seneca surrender of the west side of the Niagara River in 1764; The Niagara Purchase (Treaty 381) in 1781 included this area

Historical Event	Timeframe	Characteristics
Loyalist Influx	Late 18th century	United Empire Loyalist influx during and after the American Revolutionary War (1775–1783); British develop interior communication routes and acquire additional lands; Between the Lakes Purchase completed with the Mississaugas in 1784 and confirmed in 1792 (Treaty 3); *Constitutional Act* of 1791 creates Upper and Lower Canada
County Development	Late 18th to mid-19th century	Became part of Lincoln County's 'Third Riding' in 1792; Became part of the Niagara District in 1798; Welland Canal was a major feature, conceived by W.H. Merritt and opened in 1829; Welland County formed from the southeastern part of Lincoln County in 1845; Independent after the abolition of the district system in 1849
Township Formation	Late 18th to early 19th century	First settlers were United Empire Loyalists who left the United States during the American Revolutionary War, including the Overholt family and J. Kelly; More Loyalists arrived immediately after the war, including I. Swayze, R. Wilkerson, H. Damude and L. Misener; Many other settlers came in the early 19th century; Population reached 830 by 1817; Numerous immigrants arrived to work on the First Welland Canal in the mid- to late 1820s, resulting in a good market for farm produce; Allanburg and Port Robinson developed at either end of the 'Deep Cut'
Township Development	Mid-19th to early 20th century	One of the best settled townships in the Niagara District, with a population of 2,284 in 1841 (a mixture of Canadians, Americans, Irish, Scotch, English and Welsh); 9,465 ha taken up by 1846, with 4,726 ha under cultivation; 8 grist mills and 5 saw mills in operation at that time; Very prosperous due to the advantages offered by the Welland Canal; Traversed by the Great Western Railway (1853), Welland Railway (1859), the Great Western Railway's Canada Air Line (1873) and the St. Catharines & Niagara Central Railway (1887/88); Principal communities included Allanburg, Port Robinson, St. Johns and Thorold

1.2.2 Past and Present Land Use

1.2.2.1 Overview

During Pre-Contact and Early Contact times, the vicinity of the study area would have comprised a mixture of coniferous trees, deciduous trees and open areas. Indigenous communities actively utilized the land and its resources well into Post-Contact times, and they would have managed the landscape to varying degrees (e.g., establishing clearings for campsites, plant cultivation, etc.). During the late 18th and early 19th centuries, Euro-Canadian settlers arrived in the area and began to clear the forests for agricultural and settlement purposes. The study area was located southeast of the historical limits of Allanburg. The land use at the time of assessment can be classified as a mixture of industrial and agricultural.

1.2.2.2 Mapping and Imagery Analysis

In order to gain a general understanding of the study area's past land uses, one patent plan, two historical settlement maps, two topographic maps and eight aerial images were examined during the research component of the study. Specifically, the following resources were consulted:

- *Thorold Township* Patent Plan (No Date) (AO 2022);
- *Tremaines' Map of the Counties of Lincoln and Welland, Canada West* (1862) (OHCMP 2019);
- *Illustrated Historical Atlas of the Counties of Lincoln & Welland, Ont.* (1876) (MU 2001);
- Topographic maps from 1906 and 1938 (OCUL 2023); and
- Aerial images from 1934, 1954/1955, 1965, 1968, 2000, 2006, 2015 and 2018 (BU 2023).

The limits of the study area are shown on georeferenced versions of the consulted historical resources in Map 2–Map 8.

The *Thorold Township* Patent Plan (No Date) was initiated on a copy of an original survey plan and updated with patent information until the records were transferred to the Archives of Ontario. This plan identifies Ezekiel Younglove as the patentee for Lot 138 (Map 2). *Tremaines' Map of the Counties of Lincoln and Welland, Canada West* (1862) indicates that the study area traversed the northern part of a property occupied by J. Miller (Map 3). No farmstead is shown, but this map appears to have only included such details for its subscribers. Glover Road is shown along the western edge of the property. The *Illustrated Historical Atlas of the Counties of Lincoln & Welland, Ont.* (1876) identifies S. Stephenson as a subsequent occupant of the property (Map 4). The Stephenson farmhouse and orchard are shown in the northwestern corner of the property.

The topographic map from 1906 suggests that the study area consisted of cleared land, and a wooden (black) house is shown to the southwest (Map 5). The topographic map from 1938 shows several wooded areas within the property and at least two structures along Glover Road (Map 6). The aerial images from 1934 and 1954/55 depict at least one structure along Glover Road and confirm that the study area primarily comprised parts of two agricultural fields (Map 7). The aerial images from 1965 and 1968 reveal developments in the west, including the addition of a large structure and outbuildings. The continuation of these developments is apparent in the aerial images from 2000–2018, as the facility gradually expanded into the study area (Map 8). Interestingly, the boundary between the two fields appears to have been removed/filled between 2000 and 2006.

1.3 Archaeological Context

The Stage 1 and 2 assessments were conducted concurrently on September 23 and November 8, 2022 under PIF #P007-1393-2022. ARA utilized an Apple iPhone 12 with a built-in GPS/GNSS receiver during the investigation (UTM17/NAD83). The limits of the study area were confirmed using project-specific GIS data translated into GPS points for reference in the field, in combination with aerial imagery showing physical features in relation to the subject lands.

The archaeological context of any given study area must be informed by 1) the condition of the property as found (Section 1.3.1), 2) a summary of registered or known archaeological sites located within a minimum 1 km radius (Section 1.3.2) and 3) descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the property (Section 1.3.3).

1.3.1 Condition of the Property

The study area lies within the deciduous forest, which is the southernmost forest region in Ontario and is dominated by agricultural and urban areas. This region generally has the greatest diversity of tree and vegetation species, while at the same time having the lowest proportion of forest. It has most of the tree and shrubs species found in the Great Lakes–St. Lawrence forest (e.g., white pine, red pine, hemlock, white cedar, yellow birch, sugar and red maples, basswood and red oak), and also contains black walnut, butternut, tulip, magnolia, black gum, many types of oaks, hickories, sassafras and red bud (MNRF 2023).

In terms of local physiography, the subject lands fall entirely within the Haldimand Clay Plain. This region occupies all of the Niagara Peninsula above the escarpment and covers an area of roughly 3,500 km^2. The plain itself consists of a series of parallel clay belts deposited during the time of proglacial Lake Warren. Although this area was once completely submerged, the till is not completely buried by stratified clay and it comes to the surface on low morainic ridges in the north (Chapman and Putnam 1984:156–159).

According to the Ontario Soil Survey, the study area consists of dominant Beverly loamy phase soils and subdominant Toledo soils. Beverly loamy phase soils are composed of 15–40 cm loamy textures over lacustrine silty clay and have imperfect drainage qualities, whereas Toledo soils are made up of mainly lacustrine silty clay and are characterized by poor drainage (Kingston and Presant 1989:Sheet 4). The subject lands fall within the Thompsons Creek drainage basin, which is under the jurisdiction of the Niagara Peninsula Conservation Authority (NPCA 2023). Specifically, the study area is located 108 m northeast of a tributary of Thompsons Creek and 281 m northeast of the South Allanburg Slough Forest Wetland Complex.

At the time of assessment, the study area consisted of extant structures, work areas and agricultural lands. Soil conditions were ideal for the activities conducted. No unusual physical features were encountered that affected fieldwork strategy decisions or the identification of artifacts or cultural features (e.g., dense root mats, boulders, rubble, etc.).

1.3.2 Registered or Known Archaeological Sites

The Ontario Archaeological Sites Database and the Ontario Public Register of Archaeological Reports were consulted to determine whether any registered or known archaeological resources occur within a 1 km radius of the study area. The available search facility returned one registered site located within at least a 1 km radius (the facility returns sites in a rectangular area, rather than a radius, potentially resulting in results beyond the specified distance). No unregistered sites were identified within a 1 km radius of the study area. The site is summarized in Table 3.

Table 3: Registered or Known Archaeological Sites

Borden No. / ID No.	Site Name / Identifier	Time Period	Affinity	Site Type	Distance from Study Area
AgGt-69	Kaune	Pre-Contact	Indigenous	Unknown	50 m–300 m

The Kaune site (AgGt-69) is not located within or immediately adjacent to the subject lands; accordingly, it has no potential to traverse the study area. The site is between 50 m and 300 m away, however, and must be considered as a relevant feature of archaeological potential.

1.3.3 Previous Archaeological Work

A review of available archaeological management plans and/or other archaeological potential mapping was undertaken to inform the assessment process. Specifically, the Regional Municipality of Niagara's *Archaeological Management Plan* was examined for information that could influence the choice of fieldwork techniques or recommendations. The associated mapping indicates that the entire study area has archaeological potential (Map 9).

Reports documenting assessments conducted within the subject lands and assessments that resulted in the discovery of sites within adjacent lands were sought during the research component of the study. In order to ensure that all relevant past work was identified, an investigation was launched to identify reports involving assessments within 50 m of the study area. The investigation determined that there is one available report documenting previous archaeological fieldwork within the specified distance. The relevant results and recommendations are summarized below as required by Section 7.5.8 Standards 4–5 of the 2011 *S&Gs*.

The equivalent of Stage 1, 2, 3 and 4 assessments were carried out for the TransCanada Pipelines Blackhorse Extension between November 1990 and May 1993 under Licence #90-006, #91-10, #92-026 and #93-017 (LMA 1993). The assessed area reportedly comprised a 20 m wide corridor and an additional 10 m wide workspace, part of which appears to traverse the western edge of the property (the full extent of the survey is unclear). The investigation resulted in the identification of 17 locations of archaeological materials, none of which are within adjacent lands. AgGs-84, AgGs-86, AgGs-88, AgGs-90 and AgGt-70 were recommended for further assessment. AgGs-84 and AgGs-86 fell within the proposed corridor and were mitigated in 1992 (LMA 1993:33–34).

2.0 STAGE 1 BACKGROUND STUDY

2.1 Background

The Stage 1 assessment involved background research to document the geography, history, previous archaeological fieldwork and current land condition of the study area. This desktop examination included research from archival sources, archaeological publications and online databases. It also included the analysis of a variety of historical maps and aerial imagery. The results of the research conducted for the background study are summarized below.

With occupation beginning approximately 11,000 years ago, the greater vicinity of the study area comprises a complex chronology of Pre-Contact and Post-Contact histories (Section 1.2.1). Artifacts associated with Palaeo, Archaic, Woodland and Early Contact traditions are well-attested in the City of Thorold, and Euro-Canadian archaeological sites dating to pre-1900 and post-1900 contexts are likewise common. The presence of one previously identified site in the surrounding area demonstrates the desirability of this locality for early settlement (Section 1.3.2). The investigation confirmed that this site does not extend into the subject lands. Background research identified one possible area of previous assessment within the property (Section 1.3.3).

The natural environment of the study area would have been attractive to both Indigenous and Euro-Canadian populations as a result of proximity to two tributaries of Thompsons Creek. The areas of Beverly soils would have been ideal for agriculture, and the diverse local vegetation would also have encouraged settlement throughout Ontario's lengthy history. Euro-Canadian populations would have been particularly drawn to the nearby historical thoroughfare.

In summary, the background study included an up-to-date listing of sites from the Ontario Archaeological Sites Database (within at least a 1 km radius), the consideration of previous local archaeological fieldwork (within at least a 50 m radius), the analysis of historical maps (at the most detailed scale available) and the study of aerial imagery. A review of an archaeological management plan was also carried out. ARA therefore confirms that the standards for background research set out in Section 1.1 of the 2011 *S&Gs* were met.

2.2 Field Methods (Property Inspection)

Since the Stage 1 and 2 archaeological assessments were carried out concurrently, a separate property inspection was not completed as part of the Stage 1 background study. Instead, the visual inspection was conducted over the course of the Stage 2 property survey, in keeping with the concepts set out in Section 2.1 Standards 2a–b of the 2011 *S&Gs*. The specific field methods utilized during the visual inspection and the weather and lighting conditions at the time of assessment are summarized in Section 3.0 (Stage 2).

2.3 Analysis and Conclusions

In addition to relevant historical sources and the results of past archaeological assessments, the archaeological potential of a property can be assessed using its soils, hydrology and landforms as considerations. Section 1.3.1 of the 2011 *S&Gs* recognizes the following features or characteristics as indicators of archaeological potential: previously identified sites, water sources (past and

present), elevated topography, pockets of well-drained sandy soil, distinctive land formations, resource areas, areas of Euro-Canadian settlement, early transportation routes, listed or designated properties, historic landmarks or sites, and areas that local histories or informants have identified with possible sites, events, activities or occupations.

The Stage 1 assessment resulted in the identification of several features of archaeological potential in the vicinity of the study area (Map 10; SD Map 1). The closest and most relevant indicators of archaeological potential (i.e., those that would affect survey interval requirements) include one previously identified site (AgGt-69), two primary water sources (tributaries of Thompsons Creek), one secondary water source (the South Allanburg Slough Forest Wetland Complex), one historical roadway (Glover Road) and two historical structure localities (a late 19th-century farmhouse). Background research did not identify any features indicating that the study area had potential for deeply buried archaeological resources.

Although proximity to a feature of archaeological potential is a significant factor in the potential modelling process, current land conditions must also be considered. Section 1.3.2 of the 2011 *S&Gs* emphasizes that 1) quarrying, 2) major landscaping involving grading below topsoil, 3) building footprints and 4) sewage/infrastructure development can result in the removal of archaeological potential, and Section 2.1 states that 1) permanently wet areas, 2) exposed bedrock and 3) steep slopes (> 20°) in areas unlikely to contain pictographs or petroglyphs can also be evaluated as having no or low archaeological potential. Areas previously assessed and not recommended for further work also require no further assessment.

The Regional Municipality of Niagara's *Archaeological Management Plan* indicates that the entire study area has archaeological potential (Map 9). However, this modelling was not the result of a property-specific assessment and therefore does not fully account for land-use history and current conditions. Background research did not identify any previously assessed areas of no further concern within the study area. ARA's visual inspection, coupled with the analysis of historical sources and digital environmental data, resulted in the identification of several areas of no archaeological potential. Since these areas of no archaeological potential were identified over the course of the Stage 2 property survey, they are fully discussed in Section 3.1. The remainder of the study area had archaeological potential and required further assessment.

3.0 STAGE 2 PROPERTY ASSESSMENT

3.1 Field Methods

The Stage 2 assessment involved visual inspection to evaluate archaeological potential, pedestrian survey within the agricultural lands and a combination of visual inspection and test pit survey to confirm disturbance. Environmental conditions were ideal during the investigation, permitting good visibility of land features and providing an increased chance of finding evidence of archaeological resources. A breakdown of the specific fieldwork activities, weather and lighting conditions appears in Table 4. ARA therefore confirms that fieldwork was carried out under weather and lighting conditions that met or exceeded the requirements set out in Section 1.2 Standard 2 and Section 2.1 Standard 3 of the 2011 *S&Gs*.

Table 4: Fieldwork Activities and Environmental Conditions

Date	Activity	Lighting Conditions	Cloud Cover	Precipitation	Temperature (°C)
23/09/2022	Combination survey	Bright	Partial	None	7
08/11/2022	Pedestrian survey	Bright	Partial	None	8

The study area was subjected to a systematic visual inspection in accordance with the requirements set out in Section 1.2 of the 2011 *S&Gs*. This component of the investigation was conducted concurrently with the property survey. The inspection confirmed that all surficial features of archaeological potential were present where they were previously identified and did not result in the identification of any additional features of archaeological potential not visible on mapping (e.g., relic water channels, patches of well-drained soils, etc.).

The visual inspection resulted in the identification of several areas of disturbance, including the footprints of various concrete and metal structures as well as gravelled work areas currently used for equipment and steel stockpiling (Image 1–Image 4). These areas had clearly been impacted by past earth-moving/construction activities, resulting in the disturbance of the original soils to a significant depth and severe damage to the integrity of any archaeological resources. Previously graded lands were also observed in the northwest, but empirical testing was needed to confirm that all topsoil had been removed from this part of the study area. No natural features (e.g., permanently wet lands, sloped lands, overgrown vegetation, heavier soils than expected, etc.) or significant built features (e.g., heritage structures, landscapes, plaques, monuments, cemeteries, etc.) that would affect assessment strategies were identified.

The pedestrian survey method was utilized to complete the assessment within the agricultural field. Section 2.1.1 of the 2011 *S&Gs* provides clear requirements for the condition of such lands prior to the commencement of fieldwork: all fields must be recently ploughed; all soils must be well-weathered; and at least 80% of the ploughed ground surface must be visible. These conditions were met during the pedestrian survey. In accordance with the requirements set out in Section 2.1.1 of the 2011 *S&Gs*, ARA crewmembers traversed the field along parallel transects established at a maximum interval of 5 m (Image 5–Image 8). No locations of archaeological materials were encountered during the pedestrian survey.

A combination of visual inspection and test pit survey was utilized to confirm disturbance within the previously graded lands in accordance with Section 2.1.8 of the 2011 *S&Gs*. Using this method, ARA crewmembers hand excavated small regular test pits with a minimum diameter of 30 cm at no prescribed interval. Test pits were excavated according to professional judgement to verify that this area had been completely disturbed by previous land alterations (Image 9–Image 10).

Each test pit was excavated into at least the first 5 cm of subsoil, and the resultant pits were examined for stratigraphy, potential features and/or evidence of fill. The test pits consisted entirely of orange-brown clay subsoil with boulder and concrete inclusions, as the topsoil had previously been removed. All soils were screened through mesh with an aperture of no greater than 6 mm and examined for archaeological materials. No locations of archaeological materials were encountered during the combination survey. The test pits were backfilled upon completion.

The utilized field methods are presented in Map 11–Map 12. The property parcel and study area are depicted as layers in these maps. A breakdown of field methods appears in Table 5.

Table 5: Field Methods

Category	Study Area
Property assessed by pedestrian survey at an interval of 5 m	26.76% (0.21 ha)
Property assessed by test pit survey at an interval of 5 m	0.00% (0.00 ha)
Property assessed by test pit survey at an interval of 10 m	0.00% (0.00 ha)
Property assessed by combination of visual inspection and test pit survey to confirm disturbance	8.53% (0.07 ha)
Property assessed with a modified survey interval due to a physical or cultural constraint	0.00% (0.00 ha)
Property not assessed due to physical constraint	0.00% (0.00 ha)
Property not assessed because of permanently wet areas	0.00% (0.00 ha)
Property not assessed because of exposed bedrock	0.00% (0.00 ha)
Property not assessed because of sloped areas	0.00% (0.00 ha)
Property not assessed because of disturbed areas	64.71% (0.52 ha)
Total	**100.00% (0.80 ha)**

3.2 Record of Finds

The investigation did not result in the discovery of any archaeological materials. The inventory of the documentary record, which includes a quantitative summary of the field notes, photographs and mapping materials associated with the project, appears in Table 6.

Table 6: Documentary Record

Field Documents	Total	Nature	Location
Photographs	20	Digital	On server at 219-900 Guelph Street, Kitchener
Notes	8	Digital and hard copy	Filed and on server at 219-900 Guelph Street, Kitchener
Maps	3	Digital and hard copy	Filed and on server at 219-900 Guelph Street, Kitchener

3.3 Analysis and Conclusions

No archaeological sites were identified within the assessed lands.

4.0 RECOMMENDATIONS

The Stage 1 assessment determined that the study area comprised a mixture of areas of archaeological potential and areas of no archaeological potential. The Stage 2 assessment did not result in the identification of any archaeological materials. It is recommended that no further assessment be required within the study area. The balance of the Part 1 and Part 2 portions of the property do not require additional assessment as part of the subject project. These lands were not assessed and may require further assessment if development is contemplated in the future. Potential modelling and recommendations for the remainder of the property would be addressed at that time as part of the associated development application.

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

Section 7.5.9 of the 2011 *S&Gs* requires that the following information be provided for the benefit of the proponent and approval authority in the land use planning and development process:

- This report is submitted to the Minister of Citizenship and Multiculturalism as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 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 MCM, 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 *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 requires that any person discovering human remains must notify the police or coroner and the Registrar at the Ministry of Public and Business Service Delivery.

6.0 IMAGES

Image 1: Disturbed Lands
(September 26, 2022; Facing Southwest)

Image 2: Disturbed Lands
(September 26, 2022; Facing Southwest)

Image 3: Disturbed Lands
(November 8, 2022; Facing Southwest)

Image 4: Disturbed Lands
(November 8, 2022; Facing North)

Image 5: Pedestrian Survey
(November 8, 2022; Facing East)

Image 6: Pedestrian Survey
(November 8, 2022; Facing North)

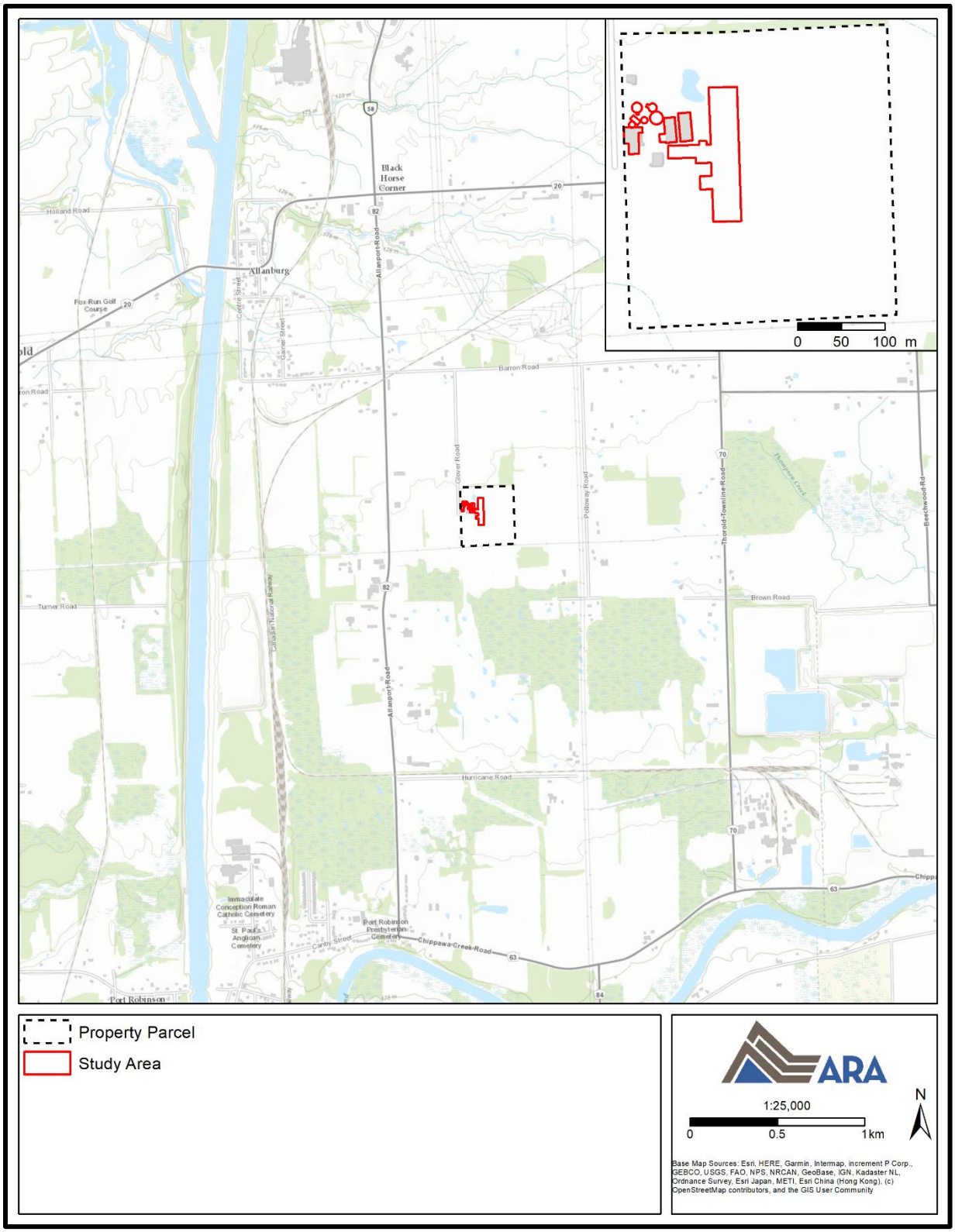
Image 7: Pedestrian Survey
(November 8, 2022; Facing North)

Image 8: Pedestrian Survey
(November 8, 2022; Facing Southwest)

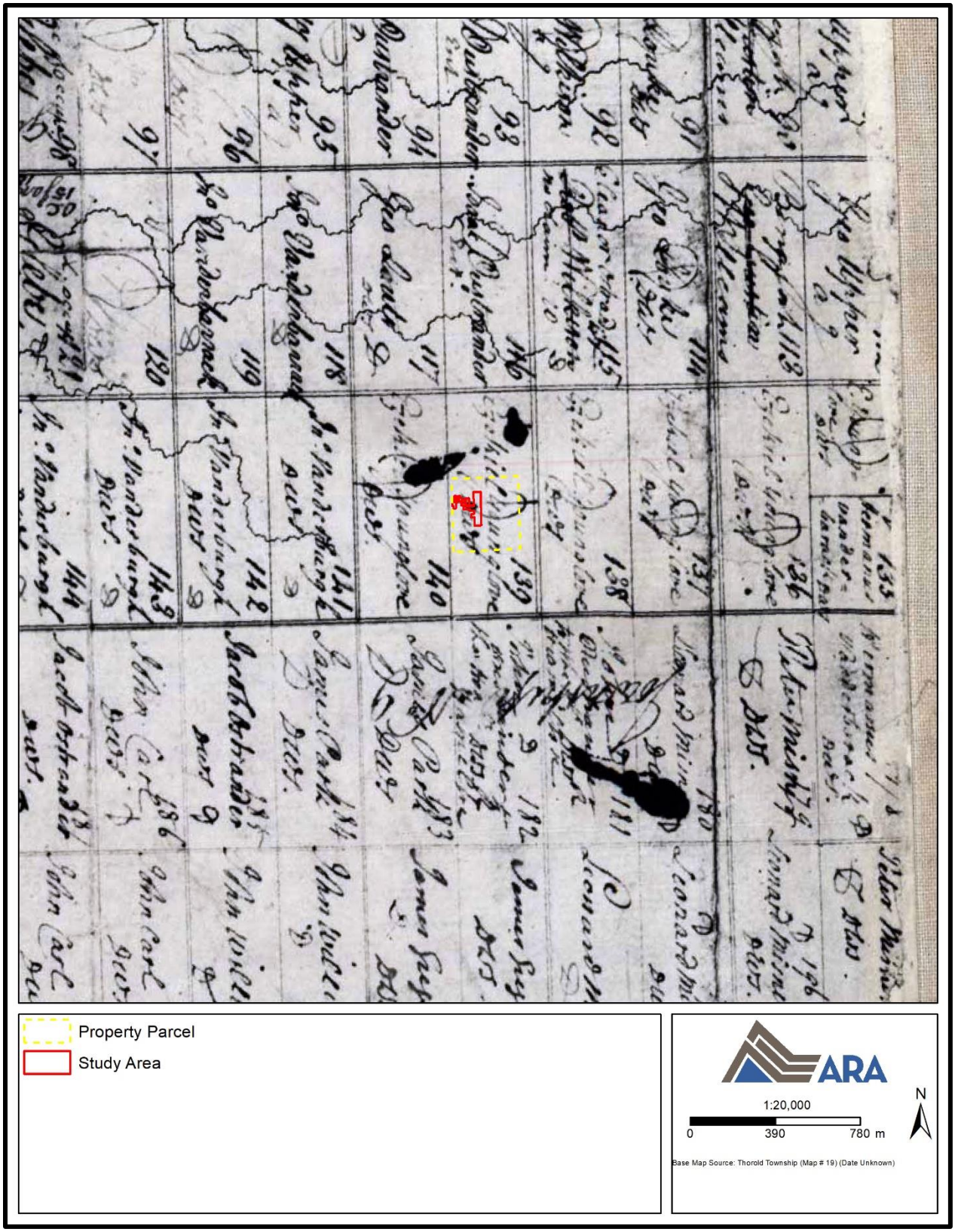
Image 9: Combination Survey
(September 26, 2022; Facing East)

Image 10: Combination Survey
(September 26, 2022; Facing North)

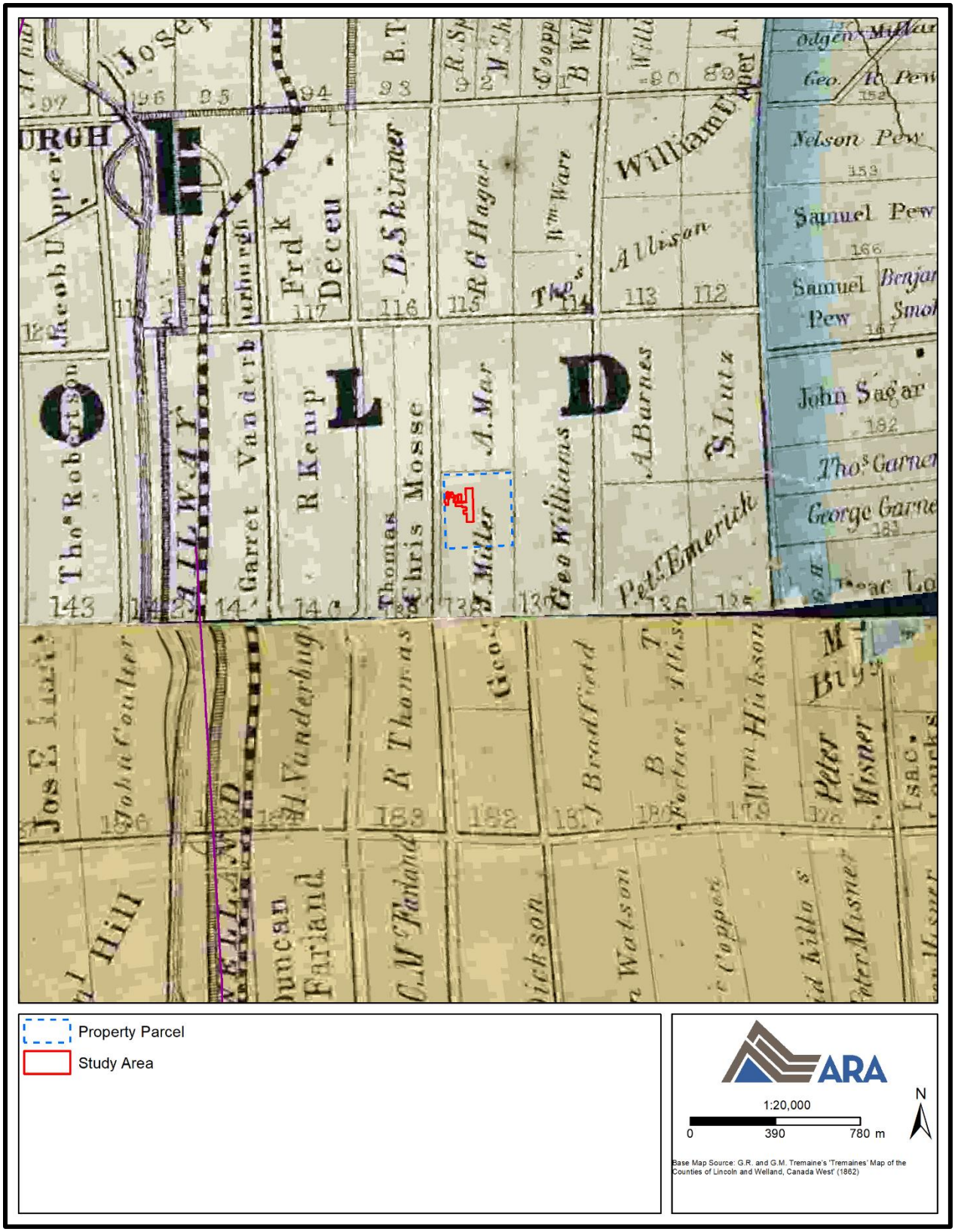
7.0 MAPS



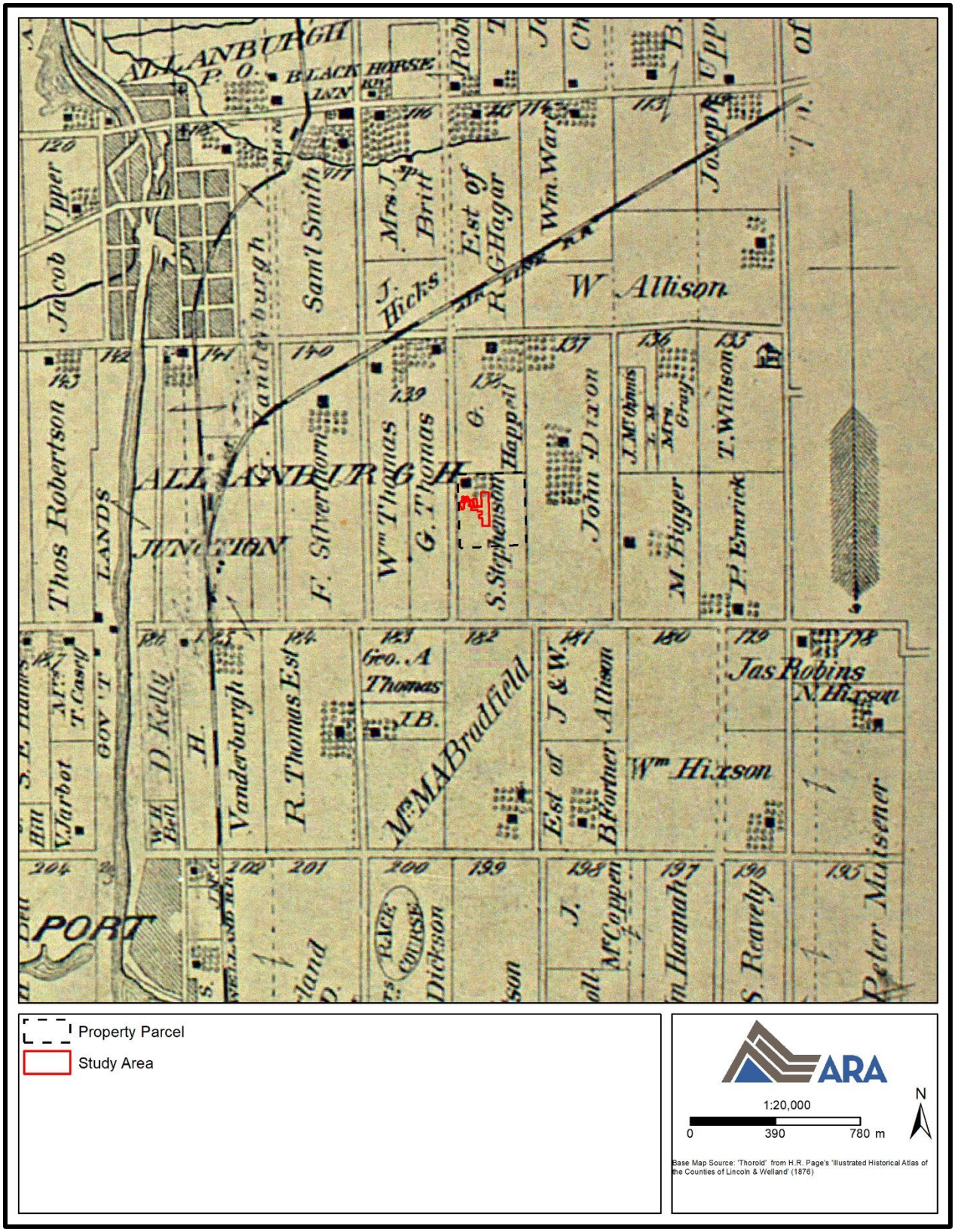
Map 1: Location of the Study Area
(Produced under licence using ArcGIS® software by Esri, © Esri)



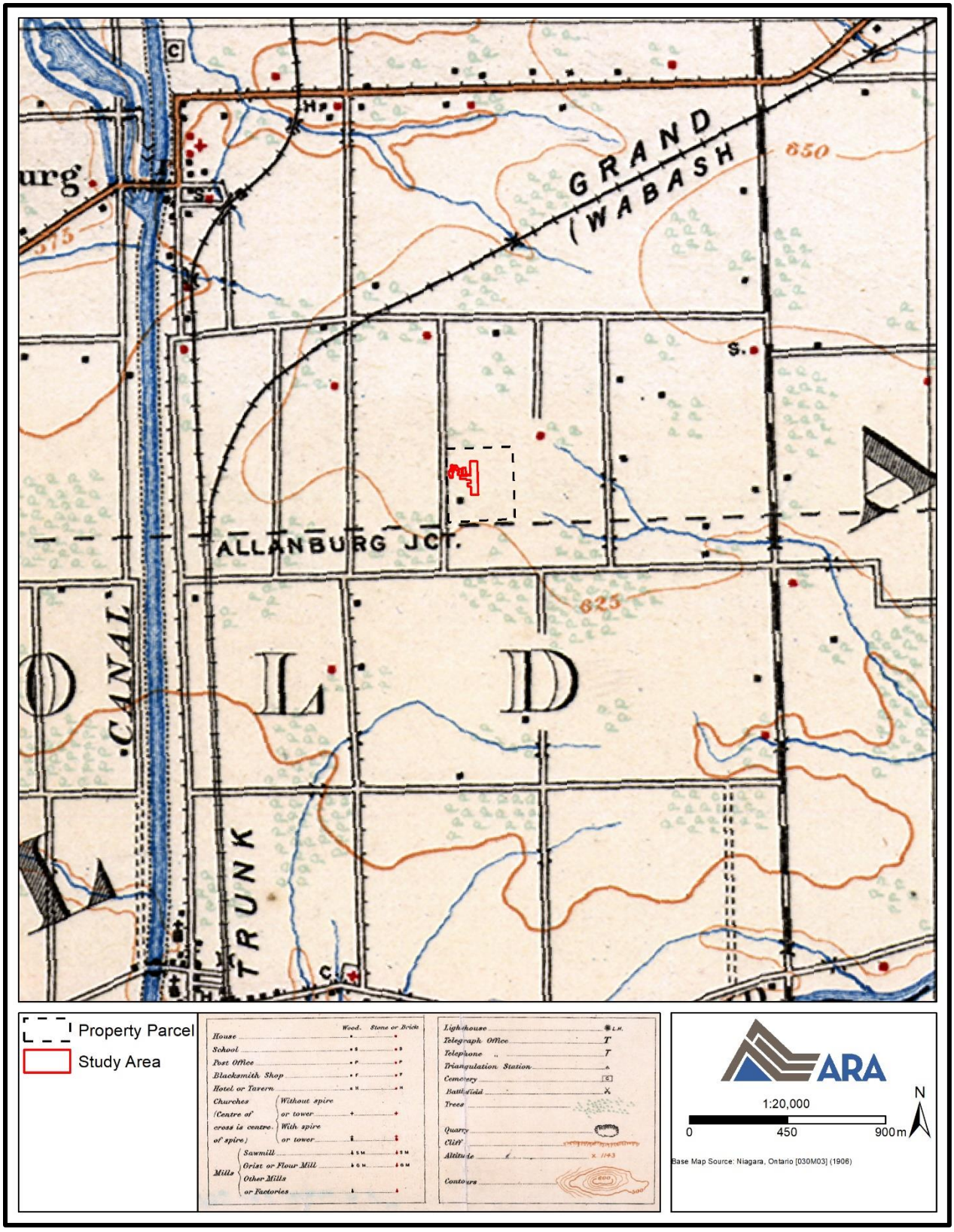
Map 2: *Thorold Township* Patent Plan (No Date)
(Produced under licence using ArcGIS® software by Esri, © Esri; AO 2022)



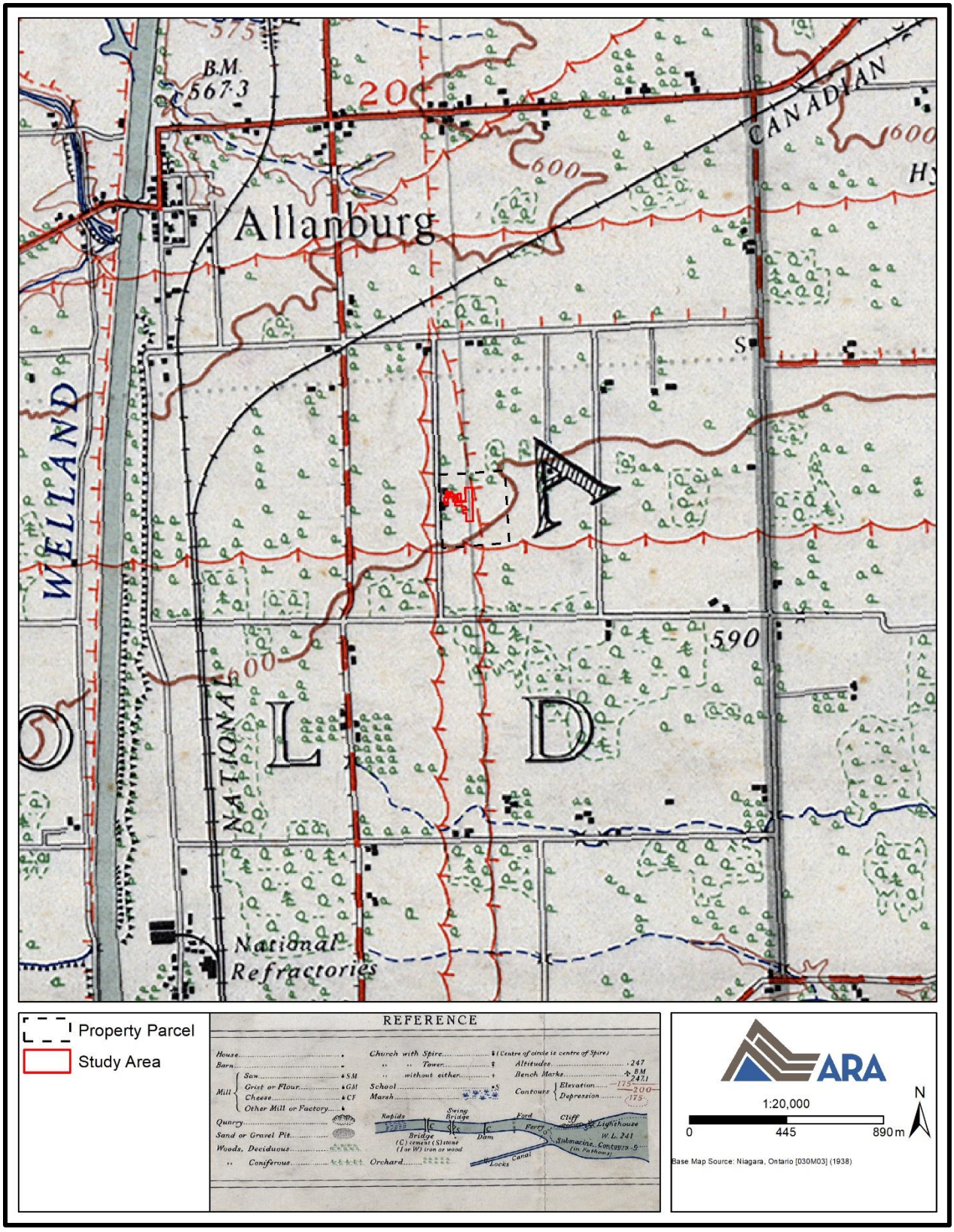
Map 3: ***Tremaine's Map of the Counties of Lincoln and Welland, Canada West*** **(1862)**
(Produced under licence using ArcGIS® software by Esri, © Esri; OCHMP 2019)



Map 4: ***Illustrated Historical Atlas of the Counties of Lincoln and Welland, Ont.*** **(1876)**
(Produced under licence using ArcGIS® software by Esri, © Esri; MU 2001)

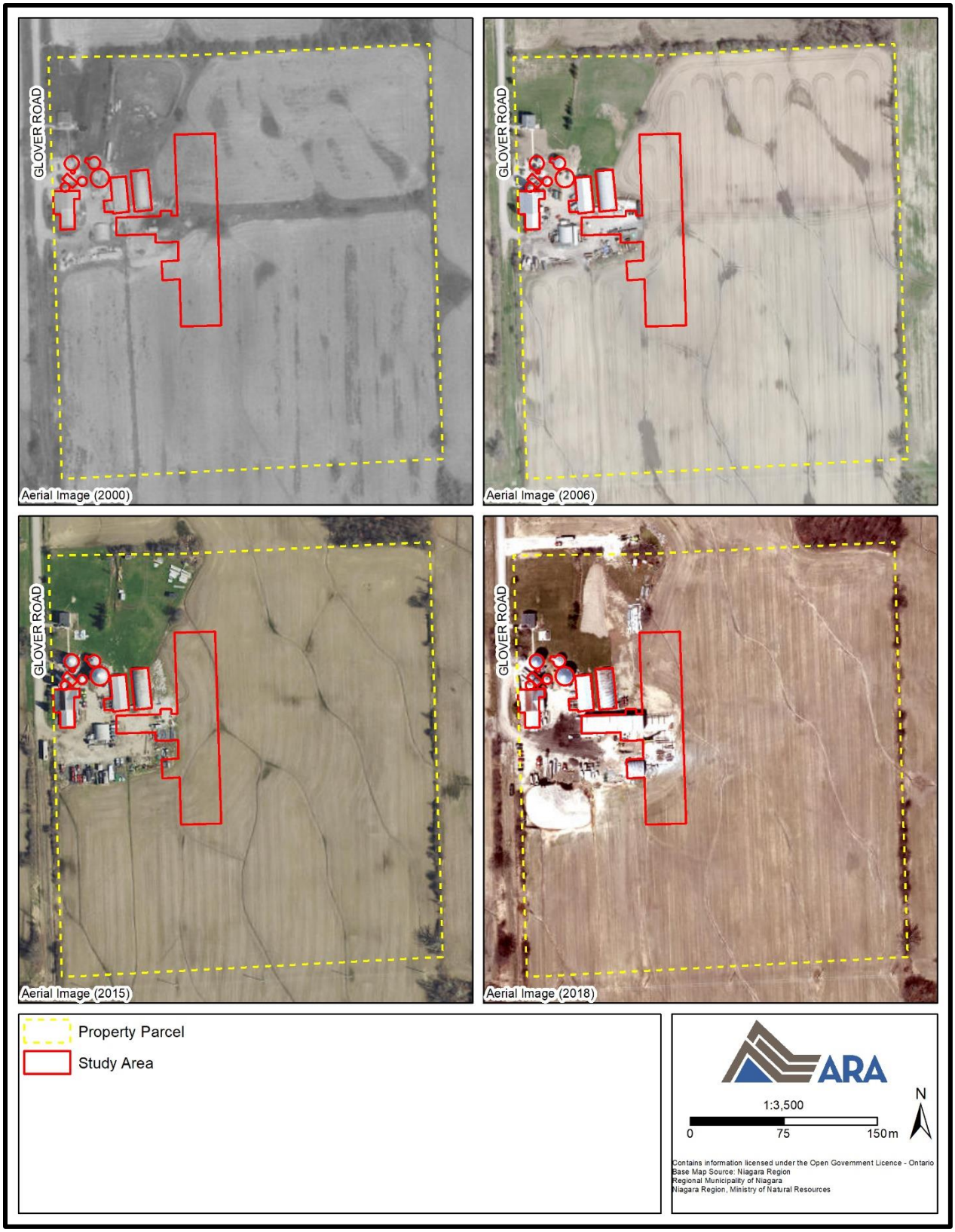


Map 5: Topographic Map (1906)
(Produced under licence using ArcGIS® software by Esri, © Esri; OCUL 2023)

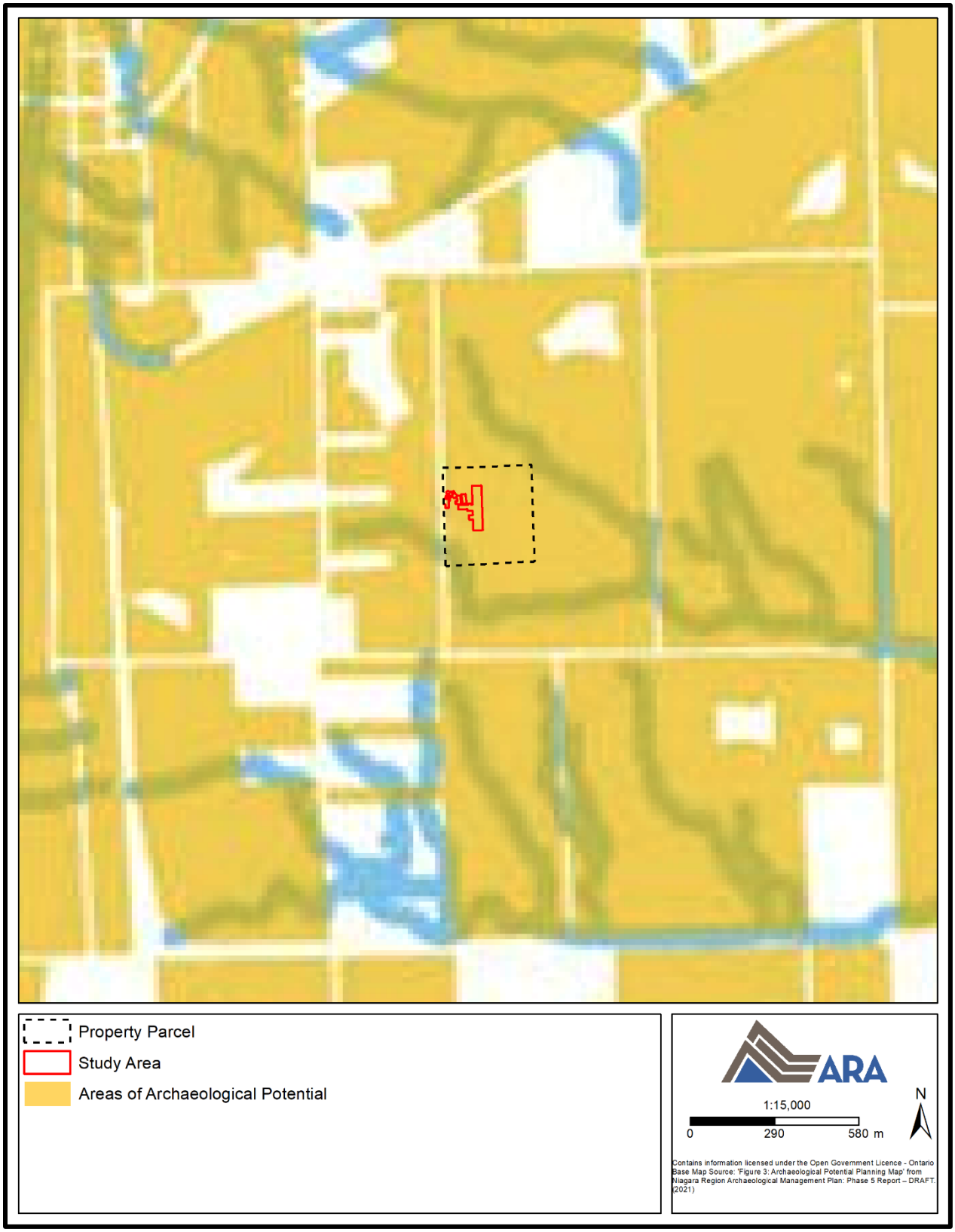


Map 6: Topographic Map (1938)
(Produced under licence using ArcGIS® software by Esri, © Esri, OCUL 2023)

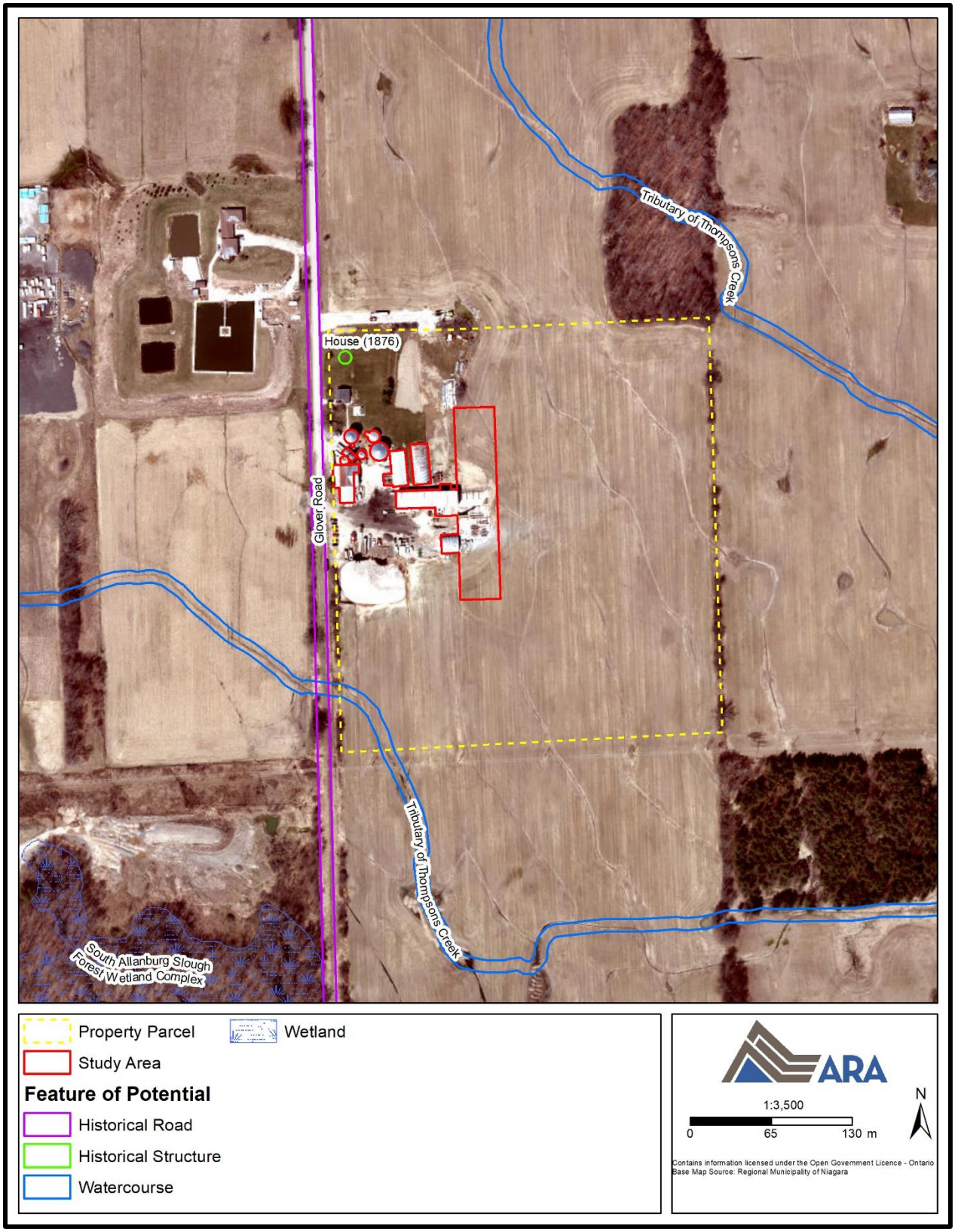
Map 7: Aerial Images (1934–1968)
(Produced under licence using ArcGIS® software by Esri, © Esri; BU 2023)



Map 8: Aerial Images (2000–2018)
(Produced under licence using ArcGIS® software by Esri, © Esri; BU 2023)

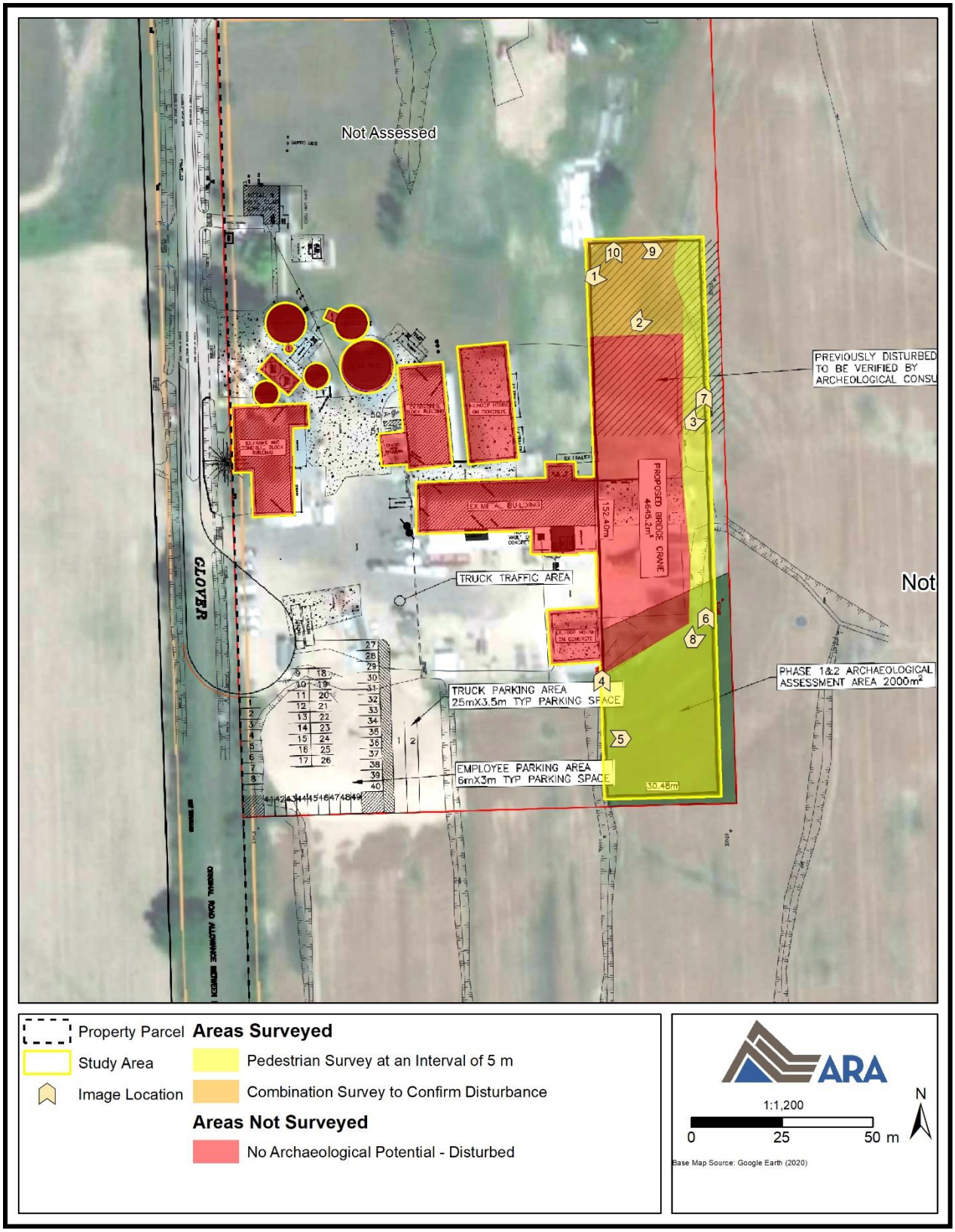


Map 9: Regional Municipality of Niagara's *Archaeological Management Plan*
(Produced under licence using ArcGIS® software by Esri, © Esri; Niagara Region 2023)



Map 10: Features of Potential
(Produced under licence using ArcGIS® software by Esri, © Esri)

Map 11: Field Methods (Aerial Image)
(Produced under licence using ArcGIS® software by Esri, © Esri)



Map 12: Field Methods (Development Plan)
(Produced under licence using ArcGIS® software by Esri, © Esri)

8.0 BIBLIOGRAPHY AND SOURCES

Archives of Ontario (AO)
2022 *Access our Collections*. Accessed online at: http://www.archives.gov.on.ca/en/access/our_collection.aspx.

Brock University (BU)
2023 *Map, Data & GIS Library*. Accessed online at: https://brocku.ca/library/mdgl/.

Chapman, L.J., and D.F. Putnam
1984 *The Physiography of Southern Ontario, 3rd Edition*. Toronto: Ontario Geological Survey, Special Volume 2.

Coyne, J. H.
1895 *The Country of the Neutrals (As Far as Comprised in the County of Elgin): From Champlain to Talbot*. St. Thomas: Times Print.

Ellis, C.J., and N. Ferris (eds.)
1990 *The Archaeology of Southern Ontario to A.D. 1650*. Occasional Publication of the London Chapter, OAS Number 5. London: Ontario Archaeological Society Inc.

Hammerburg Productions (Hammerburg)
2008 *Illustrated Historical Atlas of the Counties of Lincoln & Welland, Ont*. Reprint of 1876 Edition (Toronto: H.R. Page). Toronto: Hammerburg Productions.

Kingston, M.S., and E.W. Presant
1989 *The Soils of the Regional Municipality of Niagara, Volume 1*. Report No. 60 of the Ontario Institute of Pedology. Guelph: Ministry of Agriculture and Food.

Lajeunesse, E.J.
1960 *The Windsor Border Region: Canada's Southernmost Frontier*. Toronto: The Champlain Society.

London Museum of Archaeology (LMA)
1993 *Final Report on Archaeological Survey and Mitigation along the Proposed TransCanada Pipelines Blackhorse Extension Pipeline, Regional Municipality of Niagara, Ontario*. Licence #90-006, #91-10, #92-026 and #93-017. LMA.

McGill University (MU)
2001 *The Canadian County Atlas Digital Project*. Accessed online at: http://digital.library.mcgill.ca/countyatlas/default.htm.

Ministry of Natural Resources and Forestry (MNRF)
2023 *Forest Regions*. Accessed online at: https://www.ontario.ca/page/forest-regions.

Munson, M.K., and S.M. Jamieson (eds.)
2013 *Before Ontario: The Archaeology of a Province*. Kingston: McGill-Queen's University Press.

Niagara Peninsula Conservation Authority (NPCA)
2023 *Watershed Health*. Accessed online at: https://npca.ca/watershed-health.

Niagara Region
2023 *Archaeological Management Plan*. Accessed online at: https://www.niagararegion.ca/projects/archaeological-management-plan/default.aspx.

Ontario Council of University Libraries (OCUL)
2023 *Historical Topographic Map Digitization Project*. Accessed online at: https://ocul.on.ca/topomaps/.

Ontario Historical County Maps Project (OHCMP)
2019 *The Ontario Historical County Maps Project*. Accessed online at: http://maps.library.utoronto.ca/hgis/countymaps/.

Smith, W.H.
1846 *Smith's Canadian Gazetteer: Comprising Statistical and General Information Respecting all Parts of the Upper Province, or Canada West*. Toronto: H. & W. Rowsell.

Surtees, R.J.
1994 Land Cessions, 1763–1830. In *Aboriginal Ontario: Historical Perspectives on the First Nations*, edited by E.S. Rogers and D.B. Smith, pp. 92–121. Toronto: Dundurn Press.

Warrick, G.
2000 The Precontact Iroquoian Occupation of Southern Ontario. *Journal of World Prehistory* 14(4):415–456.

Welland Tribune Printing House (WTPH)
1887 *The History of the County of Welland, Ontario, Its Past and Present*. Welland: Welland Tribune Printing House.

Wright, J.V.
1972 *Ontario Prehistory: An Eleven-Thousand-Year Archaeological Outline*. Archaeological Survey of Canada, National Museum of Man. Ottawa: National Museums of Canada.