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Appendix D:

Stage 1 Archaeological Assessment Report

Ministry of Heritage, Sport, Tourism, Culture Industries

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Ontario

Mar 24, 2020

Paul Racher (P007)
Archaeological Research Associates Ltd.
900 Guelph Kitchener ON N2H 5Z6

RE: Review and Entry into the Ontario Public Register of Archaeological Reports: Archaeological Assessment Report Entitled, "Stage 1 Archaeological Assessment, University Avenue West/East, Huron Church Road to McDougall Street, and Victoria Avenue, Chatham Street West to Park Street West, Municipal Class Environmental Assessment, City of Windsor, Part of Lots 63–84, Concession 1 Petite Côte, Geographic Township of Sandwich, Essex County, Ontario", Dated Jun 14, 2019, Filed with MTCS Toronto Office on Jun 25, 2019, MTCS Project Information Form Number P007-0950-2018, MTCS File Number 0009521

Dear Mr. Racher:

This office has reviewed the above-mentioned report, which has been submitted to this ministry as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act*, R.S.O. 1990, c 0.18.[1] This review has been carried out in order to determine whether the licensed professional consultant archaeologist has met the terms and conditions of their licence, that the licensee assessed the property and documented archaeological resources using a process that accords with the 2011 *Standards and Guidelines for Consultant Archaeologists* set by the ministry, and that the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.

The report documents the Stage 1 assessment of the study area as depicted in Map 29-46 of the above titled report and recommends the following:

The Stage 1 assessment determined that the study area comprised a mixture of areas of archaeological potential and areas of no archaeological potential. Although no widening of the existing University Avenue and Victoria Avenue corridors are considered as part of the potential alternatives and most of the improvements will be allocated between the existing ROWs, recommendations have been made for the entire assessed area to inform the detail design process. ARA recommends that all identified areas of archaeological potential that could be impacted by the project be subject to a Stage 2 property assessment in accordance with Section 2.1 of the S&Gs (MTC 2011:28–39). Given that the areas of archaeological potential consist of both upper layers and lower layers, it is recommended that both test pit survey and deeply buried survey methods be utilized to complete the assessment

All identified areas of surficial archaeological potential must be assessed using the test pit survey method.

A test pit survey interval of 5 m will be required due to the proximity of the lands to the identified features of archaeological potential. Any areas that were likely disturbed during past development activities but require empirical evaluation must be subject to a combination of visual inspection and test pit survey to confirm disturbance in accordance with Section 2.1.8 of the S&Gs (MTC 2011:38). If disturbance cannot be confirmed, then a test pit survey interval of 5 m must be maintained in these areas as outlined above. Regardless of the survey method employed, each test pit must be excavated into at least the first 5 cm of subsoil, and the resultant pits must be examined for stratigraphy, potential features and/or evidence of fill. The soil from each test pit must be screened through mesh with an aperture of no greater than 6 mm and examined for archaeological materials. If archaeological materials are encountered, all PTPs must be documented and intensification may be required.

All areas of deeply buried archaeological potential must be subject to either mechanical test trenching or archaeological monitoring, depending on the size of the area ultimately required by the detail design. Those areas of deeply buried potential that also have potential for archaeological resources to be present near the surface must be investigated using the test pit survey method prior to any mechanical excavation. This will allow for the identification of any archaeological sites near the surface and the determination of the extent and degree of disturbance.

If an area large enough to conduct a deeply buried survey is required, then it is recommended that the full extent be mechanically investigated to expose any deeply buried resources in accordance with Section 2.1.7 Standard 3 of the S&Gs (MTC 2011:37). If the area is very large and no specific targets have been identified, trenching at a maximum interval of 10 m can occur. An excavator or backhoe with an articulated wrist and a straight-bladed bucket must be utilized so that potential resources are not damaged. The archaeologist must be able to guide the excavation so that sections and clear profiles are visible. If it is determined that impacts to an identified area of deeply buried potential are required and the area is too small to conduct mechanical test trenching, then archaeological monitoring must be conducted in accordance with Section 2.1.7 Standard 4 of the S&Gs (MTC 2011:37–38). On-site monitoring must be carried out whenever work is occurring within an identified area of deeply buried potential, and a contingency plan must be prepared with the proponent and contractors in the event that archaeological resources are exposed.

If any archaeological deposits possessing sufficient CHVI to support a recommendation to proceed to Stage 3 are encountered, the Stage 2 investigation must cease in that location. In some cases, the methods used in Stage 2 will be sufficient to accomplish the objectives of Stage 3, but it is often most practical to proceed immediately to Stage 3 and continue the assessment in accordance with the requirements set out in Section 3.3.3 (Assessment of Sites in Deeply Buried Conditions) of the S&Gs (MTC 2011:55–56).

The identified areas of no archaeological potential do not require additional assessment. If the detail design process results in the determination that project impacts are required within any of the identified areas of archaeological potential, then no ground alterations or development of any kind may occur until the Stage 2 assessment is complete, a recommendation that the lands require no further archaeological assessment is made, and the associated report is entered into the Ontario Public Register of Archaeological Reports.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the register.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Shari Prowse
Archaeology Review Officer

cc. Archaeology Licensing Officer
Jamie Garcia,CIMA+
Kristina Tang,City of Windsor

[1] *In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the Report(s) or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the Report(s) is otherwise found to be inaccurate, incomplete, misleading or fraudulent.*

ARCHAEOLOGY | HERITAGE | OUTREACH | EDUCATION

Stage 1 Archaeological Assessment
University Avenue West/East, Huron Church Road to McDougall Street, and Victoria Avenue, Chatham Street West to Park Street West
Municipal Class Environmental Assessment
City of Windsor
Part of Lots 63–84, Concession 1 Petite Côte
Geographic Township of Sandwich
Essex County, Ontario

Prepared for
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Licensed under
P.J. Racher
MTCS Licence #P007
PIF #P007-0950-2018
ARA File #2018-2008

25/01/2019

Original Report

EXECUTIVE SUMMARY

Under a contract awarded in May 2018, Archaeological Research Associates Ltd. carried out a Stage 1 assessment of lands with the potential to be impacted by proposed improvements to University Avenue West/East between Huron Church Road and McDougall Street, and Victoria Avenue between Chatham Street West and Park Street West in the City of Windsor, Ontario. The assessment was completed as a component of a Schedule 'C' Municipal Class Environmental Assessment. In addition to this legislative trigger, it should also be noted that portions of the study area are identified as having high archaeological potential in the City of Windsor's *Archaeological Master Plan* (CRM Group 2005). This report documents the background research and potential modelling involved in the assessment, and presents conclusions and recommendations pertaining to archaeological concerns within the assessed lands.

The Stage 1 assessment was conducted in August 2018 under Project Information Form #P007-0950-2018. The investigation encompassed the entirety of the project study area as well as an additional 5 m buffer area to accommodate potential design changes. All field observations were made from accessible public areas; accordingly, no permissions were required for property access. At the time of assessment, the assessed area comprised a mixture of roadway platforms, shoulders and ditches, driveways and laneways, grassed and treed areas, and parts of a wide variety of residential, public and commercial properties.

The Stage 1 assessment determined that the study area comprised a mixture of areas of archaeological potential and areas of no archaeological potential. Although no widening of the existing University Avenue and Victoria Avenue corridors are considered as part of the potential alternatives and most of the improvements will be allocated between the existing rights-of-way, recommendations have been made for the entire assessed area to inform the detail design process. Archaeological Research Associates Ltd. recommends that all identified areas of archaeological potential that could be impacted by the project be subject to a Stage 2 property assessment in accordance with Section 2.1 of the *Standards and Guidelines for Consultant Archaeologists* (MTC 2011:28–39). Given that the areas of archaeological potential consist of both upper layers and lower layers, it is recommended that both test pit survey and deeply buried survey methods be utilized to complete the assessment

The identified areas of no archaeological potential do not require additional assessment. If the detail design process results in the determination that project impacts are required within any of the identified areas of archaeological potential, then no ground alterations or development of any kind may occur until the Stage 2 assessment is complete, a recommendation that the lands require no further archaeological assessment is made, and the associated report is entered into the Ontario Public Register of Archaeological Reports.

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GLOSSARY OF ABBREVIATIONS

ARA – Archaeological Research Associates Ltd.
CIF – Contract Information Form
EA – Environmental Assessment
MTCS – Ministry of Tourism, Culture and Sport
PIF – Project Information Form
PTP – Positive Test Pit
ROW – Right-of-way
S&Gs – Standards and Guidelines for Consultant Archaeologists

PERSONNEL

Project Director: P.J. Racher (#P007)
Operations Manager: C.E. Gohm (#R187)
Project Manager: S. Bolstridge (#R471)
Field Director: S. Bolstridge
Cartographers: A. Bailey (#R1069), K. Brightwell (#R341)
Background Research: S. Clarke (#R446)
Report Writer: C.J. Gohm

1.0 PROJECT CONTEXT

1.1 Development Context

Under a contract awarded in May 2018, ARA carried out a Stage 1 assessment of lands with the potential to be impacted by proposed improvements to University Avenue West/East between Huron Church Road and McDougall Street, and Victoria Avenue between Chatham Street West and Park Street West in the City of Windsor, Ontario. The assessment was completed as a component of a Schedule 'C' Municipal Class EA. In addition to this legislative trigger, it should also be noted that portions of the study area are identified as having high archaeological potential in the City of Windsor's *Archaeological Master Plan* (CRM Group 2005). This report documents the background research and potential modelling involved in the assessment, and presents conclusions and recommendations pertaining to archaeological concerns within the assessed lands.

The subject study area consists of an irregularly-shaped parcel of lands with a total area of 13.19 ha (Map 1). This parcel extends for approximately 3.5 km along University Avenue West/East between Huron Church Road and McDougall Street and 220 m along Victoria Avenue between Chatham Street West and Park Street West, and is generally bounded by a mixture of residential, public and commercial properties to the north and south. In legal terms, the study area falls on part of Lots 63–84, Concession 1 Petite Côte in the Geographic Township of Sandwich, Essex County.

The Stage 1 assessment was conducted in August 2018 under PIF #P007-0950-2018. The investigation encompassed the entirety of the project study area as well as an additional 5 m buffer area to accommodate potential design changes. All field observations were made from accessible public areas; accordingly, no permissions were required for property access. In compliance with the objectives set out in Section 1.0 of the *S&Gs* (MTC 2011:13–23), this 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;
- Present strategies to mitigate project impacts to such sites, if they are located;
- Evaluate in detail the archaeological potential of the study area; and
- Recommend appropriate strategies for Stage 2 archaeological assessment, if some or all of the study area has archaeological potential.

The MTCS is asked to review the results and recommendations presented in this report and express their satisfaction with the fieldwork and reporting through a *Letter of Review and Entry into the Ontario Public Register of Archaeological Reports*.

1.2 Historical Context

After a century of archaeological work in southern Ontario, scholarly understanding of the historic usage of the area has become very well-developed. With occupation beginning in the Palaeo-Indian 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 the study area's past and present land uses. Multiple previous archaeological reports containing relevant background information were obtained during the research component of the study. These reports are summarized in Section 1.3.3, and the references (including title, author and PIF number) appear in Section 7.0.

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-Indian, 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-Indian	9000–8400 BC	Gainey, Barnes and Crowfield traditions; Small bands; Mobile hunters and gatherers; Utilization of seasonal resources and large territories; Fluted projectiles
Late Palaeo-Indian	8400–7500 BC	Holcombe, Hi-Lo and Lanceolate biface traditions; Continuing mobility; Campsite/Way-Station sites; Smaller territories are utilized; Non-fluted projectiles
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 800/900	Couture tradition; Bears some resemblance to contemporary cultures in Ohio and Michigan; Ceramics characterized by small coil-made vessels with coarse cording decoration; Utilized lakeshore environments during warmer months and spent fall and winter further inland at hunting and trapping grounds
Late Woodland	AD 800/900–1200	Western Basin Tradition (Younge Phase); Continuous development of ceramic styles and trends; Diffuse subsistence strategies, utilizing all available resources in a region and supplemented by some agriculture; Seasonal pattern of warm season agglomerations and cold weather dispersed camp occupations
	AD 1200–1400	Western Basin Tradition (Springwells Phase); Decorative motifs continue but also dramatic appearance of new innovations in ceramic design; Significant regional interaction; Subsistence and settlement patterns shift; Warm weather villages emerge with longhouses and palisades (likely related to an increased emphasis on maize horticulture)
	AD 1400–1550/1600	Western Basin Tradition (Wolf Phase); Ceramics develop from elaborately decorated forms of the Springwells-Wolf transition; Appearance of Parker Festooned vessels; Subsistence and settlement patterns poorly understood due to a lack of excavated sites; Potentially linked to the establishment of a 'frontier zone' with the Pre-Contact Neutral to the east and the westward realignment of Western Basin peoples

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; McEvoy & Co. 1866; Coyne 1895; Lajeunesse 1960; Phelps and Cumming 1973; Ellis and Ferris 1990; Surtees 1994; AO 2015)

Historical Event	Timeframe	Characteristics
Early Contact	Early 17th century	Brûlé explores southern Ontario in 1610; Champlain travels through in 1613 and 1615/1616, encountering a variety of Indigenous groups (including both Iroquoian-speakers and Algonquian-speakers); *Les gens de Feu* (the Fire Nation, likely referring to the Mascouten/Western Basin Tradition) documented in the southwest; European goods begin to replace traditional tools
	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-18th century	*Royal Proclamation* of 1763 recognizes the title of the First Nations to the land; Numerous treaties arranged by the Crown; First acquisition is the Seneca surrender of the west side of the Niagara River in August 1764
Loyalist Influx	Late 18th century	United Empire Loyalist influx after the American Revolutionary War (1775–1783); British develop interior communication routes and acquire additional lands; 'Indian Officers Lands' acquired along the Detroit River in 1783; 'McKee Purchase' completed in 1790, encompassing lands bounded by Catfish Creek (Kettle Creek) in the east, the Thames River in the northeast, Lake St. Clair in the northwest, Lake Erie in the south and the Detroit River in the west; Two parcels fronting on the Detroit River were reserved, but were eventually purchased; McNiff conducts the first survey along the front of the tract in 1790; *Constitutional Act* of 1791 creates Upper and Lower Canada
County Development	Late 18th to early 19th century	Essex County established in 1792; First road constructed to connect settlements within Ontario (former King's Highway 18, now County Road 20) built in Essex County in the late 18th century; Eastern portion of Essex County transferred to Kent County in 1798; Independent after the abolition of the district system in 1849; Tilbury West added to Essex County in 1851
Township Formation	Mid-18th to early 19th century	Sandwich was one of the earliest settled areas in Canada, occupied by French-Canadians who held their lands under French land grants in the early 1700s; Among the original settlements, the village of L'Assumption is thought to be the oldest, tracing its origins to 1701; Much of the township was laid out during McNiff's survey, with lots and concessions following the old French system; The remaining interior was subsequently surveyed by A. Iredell following the British scheme, and several corrections were also made to McNiff's survey; Permanent settlement began in the mid- to late 18th century, particularly after the American Revolution; Settled largely by Americans loyal to Britain; Sandwich was the stage for several major events, including the advent of the War of 1812, the Upper Canada Rebellion of 1837-1838 and the Battle of Windsor in 1838

Historical Event	Timeframe	Characteristics
Township Development	Mid-19th to early 20th century	Population reached 3,624 by 1844; 20,832 ha taken up by 1846, with 4,369 ha under cultivation; Two churches and nine windmills in operation at that time; Roughly 1,295 ha held by the Canada Company; Boundaries and status of Sandwich remained unchanged until 1854, when Windsor was recognized as an independent municipality under a village charter and was annexed from Sandwich; In 1858, the Town of Sandwich was formally incorporated by a special act of Parliament; Three years later, the township was subdivided into Sandwich East and West; Sandwich South was subsequently established; Traversed by the Great Western Railway (1854), Sandwich & Windsor Passenger Railway (1872), Canada Southern/Michigan Central Railway (1883) and Ontario & Quebec/Canadian Pacific Railway (1890); Prominent communities located at Sandwich, Windsor, Walkerville, Canard River, Old Castle, Paquette, Maidstone, Mero Corners and Tecumseh

1.2.2 Past and Present Land Use

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 would have managed the landscape to some degree. Prior to the arrival of Europeans, the land was referred to as Wawiiatanong, and the area was occupied by the Ojibwe/Chippewa, Potawatomi and Odawa. French explorers and fur traders were common in the area as early as 1640, and Antoine de la Mothe Cadillac built Fort Pontchartrain du Détroit in 1701. The Huron were invited to establish villages in the area at this time (Map 2). The Mission of Our Lady the Assumption Among the Hurons was established in 1728, and it became the parish of Our Lady of the Assumption in 1767. The area of Petite Côte mainly consisted of undeveloped farms granted to French families (City of Windsor 2019).

Following the Seven Years' War, the British took control of Fort Detroit, controlling both sides of the river until 1796. Sandwich then became the focal point of authority, resulting in an influx of Loyalists (City of Windsor 2019). During the late 18th and early 19th centuries, Euro-Canadian settlers arrived in the area and continued to develop the land for agricultural and settlement purposes (Map 3). The study area was located on the thoroughfare connecting the historic communities of Sandwich and Windsor, with the eastern part falling within the limits of Windsor.

The Honourable Peter Russell purchased 1,078 acres of land from the Huron Church Reserve allotment, and the Village of Sandwich was established in 1797. Surveyors laid out the settlement on a three-street grid running parallel to the Detroit River, with one-acre lots allowing for a dwelling and outbuildings, a garden, horses and other livestock. At the intersection of Brock and Bedford (now Sandwich Street), land was allocated for a courthouse and jail, St. John's Anglican Church, a school and a public meetinghouse. During the War of 1812, American General William Henry Harrison was able to take Sandwich, and as his final command, the village was torched. The settlement was rebuilt following the war, and merchants and tradesmen returned to business. In 1858, Sandwich became a town (City of Windsor 2019).

The Village of Windsor was first established by French settlers in the mid-18th century and was later populated by English-speaking Loyalists (McBurney & Byers 1987:222). With the arrival of the Great Western Railway line between Niagara Falls and Windsor in 1854, the rate and density of settlement increased significantly. Sandwich, which had previously boasted a substantially

higher population, experienced a gradual economic decline after the arrival of the railway (Hayes 2002:210; City of Windsor 2019). The Town of Windsor was incorporated in 1858, and the City of Windsor was established in 1892. An important development in the early 20th century was the opening of the Ambassador Bridge in 1929, which constituted a vital trade link between Canada and the United States (City of Windsor 2019).

In order to gain a general understanding of the study area's past land uses, one patent plan, three historic settlement maps, one topographic map, three sets of fire insurance plans and one aerial image were examined during the research component of the study. Specifically, the following resources were consulted:

- The *Sandwich Township* Patent Plan (No Date) (AO 2015);
- H.F. Walling's *Map of Essex County, Ontario* (1877) (OHCMP 2019);
- T.M Fowler's *Bird's Eye View of Windsor, Ontario* (1878) (Museum Windsor);
- H. Belden & Co.'s *Illustrated Atlas of the Dominion of Canada: Essex Supplement* (1881) (McGill University 2001);
- A topographic map from 1913 (OCUL 2019);
- Fire insurance plans from 1894, 1909 and 1924 (Museum Windsor); and
- An aerial image from 1954 (University of Toronto 2019).

The limits of the study area are shown on georeferenced versions of the consulted historical resources in Map 4–Map 23.

The *Sandwich Township* Patent Plan, initiated on a copy of Iredell's survey plan (ca. 1798) and updated with patent information until the records were transferred to the Archives of Ontario, indicates that the lots in the area had been laid out in the French seignorial pattern of long, narrow lots extending from the Detroit River (Map 4). Later updates that were added to the plan include docks along the river. The Windsor-Detroit tunnel was also added on Lot 73, a change that dates from 1930. The Town of Sandwich is depicted at the western extent of the study area.

H.F. Walling's *Map of Essex County, Ontario* (1877) identifies the historic limits of Sandwich and Windsor, the alignment of the Sandwich & Windsor Passenger Railway, as well as a few notable public buildings in the vicinity of the study area (Map 5). In the west, a 'Cathedral' (Assumption Church) is noted, as well as the 'Bishop's Palace'. In the east, public buildings such as a school, the Presbyterian Church, the All Saint's Church and the School Square are illustrated. Smaller farmsteads and houses were not depicted on this particular map, so their absence should not be taken as an indication that the study area was devoid of structures. Ferry routes connecting Windsor to Detroit are indicated near the eastern end of the study area,

Although not to drawn to scale, T.M Fowler's *Bird's Eye View of Windsor, Ontario* (1878) provides an excellent view of the late nineteenth century landscape between Cameron Avenue and the eastern terminus of the study area (Map 6). In the east (on the right side of the map), scattered farmsteads appears on either side of London Street (University Avenue), and the density increases substantially to the west of Bruce Avenue (on the left side of the map). H. Belden & Co.'s *Illustrated Atlas of the Dominion of Canada: Essex Supplement* (1881) provides little additional useful information, although some of the seignorial lands between Sandwich and Windsor were in

the process of being subdivided. For example, a more densely settled area is indicated within Lots 65 and 66, Concession 1 Petite Côte (Map 7).

The topographic map from 1913 reveals the locations of many wood and stone/brick structures between Huron Church Road and the Canadian Pacific Railway, although the density of settlement within Windsor itself was too high to illustrate individual structures (Map 8). Assumption Church is illustrated in the west, and several mills are shown to the north. The Michigan Central Railway appears to the west of the Canadian Pacific Railway.

Fire insurance plans from 1894, 1909 and 1924 reveal more specific information about the structures within and adjacent to the project study area and the 5 m buffer (Map 9–Map 22). The plans from 1894 and 1909 only cover the eastern part of the study area (as far west as Bruce Avenue and Oak Avenue, respectively), whereas the plans from 1924 provide depictions of structures and features throughout the study area. These plans show that the vicinity of the study area was extremely well-settled during the late 19th and early 20th centuries, with a wide variety of buildings fronting on London Street (University Avenue). The aerial image from 1954 reveals a densely settled landscape, with Sandwich and Windsor essentially connected as one city (Map 23). The seignorial lots between the two communities had been subdivided and developed by this time, leaving few traces of the former lot structure on the landscape. The land use at the time of assessment can be classified as a mixture of infrastructural, public, residential and commercial.

1.3 Archaeological Context

The Stage 1 assessment (property inspection) was conducted on August 28, 2018 under PIF #P007-0950-2018. The limits of the study area were confirmed using georeferenced aerial imagery showing artificial and natural formations in relation to the project 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 subject lands (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 2019).

In terms of local physiography, the subject lands fall entirely within the St. Clair Clay Plains. This region consists of extensive clay plains in Essex, Kent and Lambton Counties. The Essex Clay Plain is located between the basins of Lake Erie and Lake St. Clair, and the surface is essentially a till plain. Although it is almost level, the plain has a faint relief; accordingly, it is better drained

that the very flat area bordering Lake St. Clair. Surface drainage is nearly all northward to Lake St. Clair, but the gradient is extremely low and the drainage divide near Lake Erie is rather vague. Most of the plain has such imperfect drainage that dredged ditches and tile drains are required for crop growth and tillage (Chapman and Putnam 1984:147–151).

According to the Ontario Soil Survey, the study area contains Brookston clay loam. This type of soil consists of dark clay loam over mottled clay and blue-grey gritty clay, has few stones and is almost level with poor natural drainage. Overall, the Brookston series exhibits the characteristics of the Dark Grey Gleisolic soils and has a fairly high organic matter content. Brookston soils are ideal for general farming and for forage crops of red clover, sweet clover, grasses and alfalfa when drained. Most the area that has been improved by tile drainage is used to grow cash crops like corn, wheat, beans, canning crops, peas, burley and black tobacco (Richards et al.:1949:35–36).

The subject lands fall entirely within the Windsor Area Drainage subwatershed, which is under the jurisdiction of the Essex Region Conservation Authority (ERCA 2018). Specifically, the study area is located approximately 190 m south of the Detroit River. No traces of former tributaries or other historic water sources were encountered during the research component of the study.

At the time of assessment, the assessed area comprised a mixture of roadway platforms, shoulders and ditches, driveways and laneways, grassed and treed areas, and parts of a wide variety of residential, public and commercial properties. Field conditions were ideal during the assessment, with high ground surface visibility. No unusual physical features were encountered that affected the results of the Stage 1 assessment.

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 MTCS search facility returned a total of 11 registered sites located within at least a 1 km radius (the facility returns sites in a rectangular area, rather than a radius, potentially resulting in returns beyond the specified distance). In terms of other known resources (e.g., Isolated Non-Diagnostic Find Spots, Leads or unreported deposits), one Lead was identified within a 1 km radius. The sites are 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
AbHs-13	Train Depot	Post-Contact	Euro-Canadian	Depot, railway	50 m–300 m
AbHs-15	Senator David A.Croll Park	Post-Contact	Euro-Canadian	House, midden, settlement	50 m–300 m
AbHs-27	Huron Mission Site	Pre-Contact, Post-Contact	Indigenous	Village	50 m–300 m
AbHs-28	DIBC-1	Archaic, Late, Post-Contact	Indigenous, Euro-Canadian	Scatter	50 m–300 m
AbHs-29	DIBC-2	Post-Contact	Indigenous, Euro-Canadian	Scatter	300 m–1 km
AbHs-30	DIBC-3	Late Woodland, Post-Contact	Indigenous, Euro-Canadian	Scatter, Homestead	50 m–300 m

Borden No. / ID No.	Site Name / Identifier	Time Period	Affinity	Site Type	Distance from Study Area
AbHs-31	DIBC-4	Post-Contact, Pre-Contact	Indigenous, Euro-Canadian	Scatter	50 m–300 m
AbHs-32	DIBC-5	Post-Contact	Indigenous, Euro-Canadian	Scatter	50 m–300 m
AbHs-33	DIBC-6	Woodland, Post-Contact	Indigenous, Euro-Canadian	Scatter	50 m–300 m
AbHs-34	DIBC-7	Archaic, Woodland, Late, Woodland, Middle	Indigenous, Western Basin	Village	50 m–300 m
AbHs-65	-	Post-Contact	Euro-Canadian	Homestead	300 m–1 km
Lead	Assumption Park	Post-Contact	Unspecified	Mission, church/chapel	< 50 m

Assumption Park is located within 50 m of the study, along the north side of the western terminus. None of the registered archaeological sites are located within or immediately adjacent to the project lands; accordingly, they have no potential to traverse the assessed area. AbHs-13, AbHs-15, AbHs-27, AbHs-28, AbHs-30, AbHs-31, AbHs-32, AbHs-33 and AbHs-34 are located within 300 m of the study area, however, and must be considered as relevant features of archaeological potential. It should also be noted that AbHs-27 and AbHs-34 represent the same site, and that the duplication issue was only recognized after AbHs-34 had been assigned and utilized for the assessment of AbHs-27. The remaining two sites, AbHs-29 and AbHs-65, represent more distant archaeological resources.

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 City of Windsor's *Archaeological Master Plan* (CRM Group 2005) was examined for information that could influence the choice of fieldwork techniques or recommendations. The associated mapping indicates that the western and eastern parts of the study area have potential for Indigenous and Euro-Canadian archaeological materials. The central part, from Askin Avenue to just east of Caron Avenue, is listed as having no archaeological potential (Map 24).

Reports documenting assessments conducted within the subject lands and assessments that resulted in the discovery of archaeological sites that could extend into the subject lands were also 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 all reports involving assessments within 50 m of the study area. The investigation determined that there are multiple reports on record documenting previous archaeological fieldwork within the specified distance. Copies of the reports were obtained, and the previous results and recommendations are summarized below in fulfilment of the requirements set out in Section 7.5.8 Standards 4–5 of the *S&Gs* (MTC 2011:126). The reports are discussed in chronological order by project, and the limits of the previous assessments are shown in the report mapping.

1.3.3.1 Senator David A. Croll Park (Monitoring)

In April 1994, archaeological monitoring was carried out for sidewalk construction in two areas of the Senator David A. Croll Park site (AbHs-15) under licence #94-005 (MHCI 1994). The monitoring occurred for an interlocking brick sidewalk extending north-south from University Avenue to Park Street (Area 2), and a second interlocking brick sidewalk was built through the parkland from the first to the corner of Goyeau Street and University Avenue (Area 1). The assessed area traverses part of the study area and 5 m buffer southeast of the intersection of University Avenue East and Goyeau Street. The excavation areas were relatively shallow, and no significant impacts were observed to the previously registered site (building debris and artifacts were encountered between 20 and 25 cm deep at the extreme north end of the sidewalk in Area 1, but it is unclear if these are related to the site documented further south in 1991). Although no further work was recommended for the sidewalk construction project, the remainder of the property was recommended for monitoring during any impacts to a depth of up to 50 cm and for Stage 3 assessment during any impacts to a depth beyond 50 cm (MHCI 1994:3).

1.3.3.2 Windsor Civic Square (Stage 1)

In July 1998, a Stage 1 assessment was undertaken prior to planned landscaping and roadway alterations on portions of Windsor's Civic Square under licence #98-062 (HHI 1998). The assessed area was bounded by University Avenue East on the north, McDougall Street on the east and City Hall Square on the west and south. This area traverses parts of the subject study area and 5 m buffer south of University Avenue East and east of Goyeau Street. The Stage 1 assessment identified multiple areas of potential and recommended that all areas of impact must be monitored by an archaeologist during machine excavation and/or grading. Areas found to be disturbed during monitoring would not require further monitoring (HHI 1998:8–9). The portions traversing the subject lands were modelled as having low-medium potential (HHI 1998:Figure 12).

1.3.3.3 Ambassador Bridge Enhancement (Stage 1 and 2)

Stage 1 and 2 assessments were conducted for the Ambassador Bridge Enhancement project in May and June 2007 under CIF #P014-056-2007 (LMA 2007). The assessed area is located west of the subject lands, on the opposite side of Huron Church Road. The Stage 1 assessment determined that the study area had archaeological potential, and the Stage 2 assessment resulted in the discovery of seven sites: DIBC-1 (AbHs-28) through DIBC-7 (AbHs-34). All of the sites contained Indigenous artifacts, and Euro-Canadian materials were found at all but DIBC-4. All seven sites were found to be of further CHVI and were recommended for Stage 3 assessment (LMA 2007:44). None of the sites are located within 50 m of the subject study area.

1.3.3.4 Assumption Park (Stage 1)

In Fall 2010, a Stage 1 assessment of Assumption Park was carried out to further inform the understanding of the property under PIF #P096-060-2010 (OHT 2011). The assessed area traverses part of the study area and 5 m buffer northeast of the intersection of University Avenue West and Huron Church Road. A review of historical documentation was carried out, as well as conductivity and resistivity surveys. The Stage 1 assessment demonstrated that the property has high archaeological potential, particularly for resources that relate to the history of structures directly

associated with the second and third church and possibly earlier. It was recommended that "the entire limits of Assumption Park as covered under the Ontario Heritage Trust conservation easement is considered to exhibit archaeological potential for aboriginal and historic sites. The City of Windsor should make all efforts to ensure that specific areas as determined in this report, be subject to archaeological assessments if any soil disturbance is to occur in those areas related to the Jesuit Mission and Churches that once stood in the Park" (OHT 2011:15). The southernmost area determined to have potential related to the structures traverses the subject study area.

1.3.3.5 58 Park Street East and 357 Goyeau Street (Stage 1 and 2)

A Stage 1 assessment for properties located at 58 Park Street East and 357 Goyeau Street was completed in April and May 2014 under PIF #P359-0012-2014 (HHI 2014a). The assessed area falls outside of the study area, being located southwest of the intersection of University Avenue East and Goyeau Street. The undisturbed areas were determined to have potential for both Indigenous and early Euro-Canadian resources, and it was noted that the extent of remaining archaeological integrity beneath the existing pavements could not be determined without field assessment. It was recommended that the areas of potential be subject to Stage 2 assessment using mechanical excavation (HHI 2014a:22).

The Stage 2 assessment of the properties was carried out in September and October 2014 under PIF #P042-0406-2014 (HHI 2014b). A total of 13 trenches were mechanically excavated, and a buried topsoil layer was subject to test pit survey where accessible. Late 19th and early 20th century materials were encountered in multiple locations, and a sample of 428 artifacts was retained to confirm chronology and function of deposits. Nothing of CHVI was identified; accordingly, it was recommended that the study area required no further assessment (HHI 2014b:36).

1.3.3.6 New City Hall (Stage 1)

In December 2014, a Stage 1 assessment was carried out for the new City Hall building at 350 City Hall Square West under PIF #P348-0020-2014 (AFW 2015). The assessed area traverses part of the subject 5 m buffer south of University Avenue East between Goyeau Street and City Hall Square East. Background research indicated that the property contained a barracks from ca. 1839–1856, a barracks from 1866, the Central School/City Hall building from 1871, and numerous later structures. The assessment determined that all previously undisturbed areas have archaeological potential. Areas of no potential included the 20th century building locations, the parking lot south of the extant City Hall and utility trenches. It was recommended that mechanical trenching be carried out in the landscaped areas south of City Hall, in the area west of City Hall and in the area north of City Hall to search for buried deposits; that test pit survey be conducted within the remainder of the manicured lawns south of City Hall and within the manicured lawn to the northwest (where previous monitoring found materials at a depth of 20 cm); and that the remainder of the study area required no further assessment (AFW 2015:22–25).

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 historic maps and aerial images. 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). Artifacts associated with Palaeo-Indian, Archaic, Woodland and Early Contact traditions are well-attested in the City of Windsor, and Euro-Canadian archaeological sites dating to pre-1900 and post-1900 contexts are likewise common. The presence of 11 previously identified archaeological sites in the surrounding area demonstrates the desirability of this locality for early settlement, and one Lead was also identified for Assumption Park (Section 1.3.2). The investigation confirmed that none of the registered sites extend into the subject lands, but materials associated with Assumption Park could fall within the western terminus of the study area. Background research identified four areas of previous assessment within the study area (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 the Detroit River. With drainage improvements, the areas of Brookston clay loam 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 drawn to a wide variety of historically-surveyed thoroughfares and railways, as well as the historic community of Windsor.

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 a variety of historic maps (at the most detailed scale available) and the study of aerial images. 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 *S&Gs* (MTC 2011:14–15) were met.

2.2 Field Methods (Property Inspection)

In order to gain first-hand knowledge of the geography, topography and current condition of the study area, a property inspection was conducted on August 28, 2018. Environmental conditions were ideal during the inspection, with sunny skies, excellent lighting and a high of 38 °C. ARA therefore confirms that fieldwork was carried out under weather and lighting conditions that met the requirements set out in Section 1.2 Standard 2 of the *S&Gs* (MTC 2011:16).

The study area was subjected to random spot-checking in accordance with the requirements set out in Section 1.2 of the *S&Gs* (MTC 2011:15–17). Specifically, the inspection began on the north side of University Avenue West near Bruce Avenue and progressed eastwards to McDougall Street. Once at the eastern terminus, the inspection continued along the southern side of University Avenue East/West to McKay Avenue, and then crossed to the north side and returned to Bruce Avenue . Another circuit was then carried out along the south side of University Avenue West from McKay Avenue to Huron Church Road, and then along the north side of University Avenue West from Huron Church Road to McKay Avenue.

The visually inspected areas were examined under conditions that permitted good visibility of land features. The inspection confirmed that all surficial features of archaeological potential (e.g., the historic roadways) 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 inspection determined that parts of the study area were deeply disturbed by past construction activities. No natural features (e.g., permanently wet areas, sloped lands, overgrown vegetation, heavier soils than expected, etc.) that would affect assessment strategies were identified. A wide variety of designated, listed and candidate heritage structures were documented during the research component of ARA's concurrent heritage assessment (ARA 2019). No other significant built features (e.g., landscapes, plaques, monuments, cemeteries, etc.) that would affect assessment strategies were identified within the study area.

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 *S&Gs* (MTC 2011:17–18) 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 numerous features of archaeological potential in the vicinity of the study area (Map 25). The closest and most relevant indicators of archaeological potential (i.e., those that would directly affect survey interval requirements) include 1 primary water source (the Detroit River), 20 historic roadways (e.g., Huron Church Road, Indian Road, University Avenue West, etc.), 4 historic railways (the Canadian Pacific Railway, Great Western Railway, Michigan Central Railway and Sandwich & Windsor Passenger Railway), more than 150 historic structure localities, 1 historic community (Windsor), 16 designated heritage properties, 99 listed heritage properties and 9 previously identified archaeological sites (AbHs-13, AbHs-15, AbHs-27, AbHs-28, AbHs-30, AbHs-31, AbHs-32, AbHs-33 and AbHs-34).

Background research identified a wide variety of features indicating that parts of the study area have potential for deeply buried archaeological resources. Pre- and Post-Contact Indigenous populations made extensive use of the area, and a variety of sites have already been documented

within the urbanized landscape. Assumption Park clearly has potential for deeply buried resources within the western end of the study area. London Street (University Avenue) was a major focal point for homes and businesses beginning in the late 18th and early 19th centuries, as it connected the historic communities of Sandwich and Windsor. Historic maps and plans depict a wide variety of structures along both the north and south sides of the thoroughfare and other intersecting roadways. Many of these buildings fall within the 5 m buffer area. Indigenous and Euro-Canadian archeological deposits could therefore exist beneath many modern parking lots and road surfaces within the study area. Key defining historic elements (i.e., structures) identified in the consulted historic resources have been treated as 'targets' to inform the potential modelling process.

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 *S&Gs* (MTC 2011:18) 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 of the *S&Gs* (MTC 2011:28) states that 1) permanently wet areas, 2) exposed bedrock and 3) steep slopes (> 20°) can also be considered as having no archaeological potential. Areas previously assessed and not recommended for further work also require no further assessment, but no such areas were identified within the study area (all four areas of previous assessment recommended further work for the subject lands).

The City of Windsor's *Archaeological Master Plan* (CRM Group 2005) indicates that the western and eastern parts of the study area have potential for Indigenous and Euro-Canadian archaeological materials. The central part, from Askin Avenue to just east of Caron Avenue, is listed as having no archaeological potential. 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. ARA's visual inspection, coupled with the analysis of historical sources and digital environmental data, resulted in the identification of multiple areas of no archaeological potential within the study area. Specifically, deep land alterations have resulted in the removal of archaeological potential from a wide variety of roadway platforms, shoulders and ditches; driveways and laneways; and residential, public and commercial building footprints (Image 1–Image 14). 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.

The remainder of the assessed area either has potential for surficial and/or deeply buried archaeological materials or requires test pit survey to confirm the presence/extent of any subsurface disturbances (Image 15–Image 40). The areas of archaeological potential can be broken down into four distinct categories:

1) Areas of surficial archaeological potential (i.e., the grassed areas southeast of the intersection of University Avenue East and Goyeau Street) that were determined to be suitable for test pit survey under PIF #P348-0020-2014 (AFW 2015:22–23);
2) Areas that have potential for both deeply buried archeological resources and for archaeological resources to be present near the surface (i.e., the grassed areas between Huron Church Road and Sunset Avenue in the vicinity of Assumption Park);

3) Areas of deeply buried archaeological potential (i.e., the roadways between Huron Church Road and Sunset Avenue in the vicinity of Assumption Park, as well as various developed areas that possess disturbed upper layers that could be sealing over archaeological resources in the lower layers); and
4) Areas that were likely disturbed during past development activities but must be empirically evaluated to determine the integrity of the soils and the depth of any past disturbances (i.e., landscaped areas that are suitable for test pit survey).

In summary, the Stage 1 assessment determined that the study area comprised a mixture of areas of archaeological potential and areas of no archaeological potential. The potential modelling results are presented in Map 28–Map 46. The limits of the project study area and 5 m buffer are depicted as layers in these maps.

3.0 RECOMMENDATIONS

The Stage 1 assessment determined that the study area comprised a mixture of areas of archaeological potential and areas of no archaeological potential. Although no widening of the existing University Avenue and Victoria Avenue corridors are considered as part of the potential alternatives and most of the improvements will be allocated between the existing ROWs, recommendations have been made for the entire assessed area to inform the detail design process. ARA recommends that all identified areas of archaeological potential that could be impacted by the project be subject to a Stage 2 property assessment in accordance with Section 2.1 of the *S&Gs* (MTC 2011:28–39). Given that the areas of archaeological potential consist of both upper layers and lower layers, it is recommended that both test pit survey and deeply buried survey methods be utilized to complete the assessment

All identified areas of surficial archaeological potential must be assessed using the test pit survey method. A test pit survey interval of 5 m will be required due to the proximity of the lands to the identified features of archaeological potential. Any areas that were likely disturbed during past development activities but require empirical evaluation must be subject to a combination of visual inspection and test pit survey to confirm disturbance in accordance with Section 2.1.8 of the *S&Gs* (MTC 2011:38). If disturbance cannot be confirmed, then a test pit survey interval of 5 m must be maintained in these areas as outlined above. Regardless of the survey method employed, each test pit must be excavated into at least the first 5 cm of subsoil, and the resultant pits must be examined for stratigraphy, potential features and/or evidence of fill. The soil from each test pit must be screened through mesh with an aperture of no greater than 6 mm and examined for archaeological materials. If archaeological materials are encountered, all PTPs must be documented and intensification may be required.

All areas of deeply buried archaeological potential must be subject to either mechanical test trenching or archaeological monitoring, depending on the size of the area ultimately required by the detail design. Those areas of deeply buried potential that also have potential for archaeological resources to be present near the surface must be investigated using the test pit survey method prior to any mechanical excavation. This will allow for the identification of any archaeological sites near the surface and the determination of the extent and degree of disturbance.

If an area large enough to conduct a deeply buried survey is required, then it is recommended that the full extent be mechanically investigated to expose any deeply buried resources in accordance with Section 2.1.7 Standard 3 of the *S&Gs* (MTC 2011:37). If the area is very large and no specific targets have been identified, trenching at a maximum interval of 10 m can occur. An excavator or backhoe with an articulated wrist and a straight-bladed bucket must be utilized so that potential resources are not damaged. The archaeologist must be able to guide the excavation so that sections and clear profiles are visible. If it is determined that impacts to an identified area of deeply buried potential are required and the area is too small to conduct mechanical test trenching, then archaeological monitoring must be conducted in accordance with Section 2.1.7 Standard 4 of the *S&Gs* (MTC 2011:37–38). On-site monitoring must be carried out whenever work is occurring within an identified area of deeply buried potential, and a contingency plan must be prepared with the proponent and contractors in the event that archaeological resources are exposed.

If any archaeological deposits possessing sufficient CHVI to support a recommendation to proceed to Stage 3 are encountered, the Stage 2 investigation must cease in that location. In some cases, the methods used in Stage 2 will be sufficient to accomplish the objectives of Stage 3, but it is often most practical to proceed immediately to Stage 3 and continue the assessment in accordance with the requirements set out in Section 3.3.3 (Assessment of Sites in Deeply Buried Conditions) of the *S&Gs* (MTC 2011:55–56).

The identified areas of no archaeological potential do not require additional assessment. If the detail design process results in the determination that project impacts are required within any of the identified areas of archaeological potential, then no ground alterations or development of any kind may occur until the Stage 2 assessment is complete, a recommendation that the lands require no further archaeological assessment is made, and the associated report is entered into the Ontario Public Register of Archaeological Reports.

4.0 ADVICE ON COMPLIANCE WITH LEGISLATION

Section 7.5.9 of the *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 (MTC 2011:126–127):

- This report is submitted to the Minister of Tourism, Culture and Sport 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 MTCS, 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*.
- Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.
- 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 of Cemeteries at the Ministry of Consumer Services.

5.0 IMAGES

Image 1: Disturbed Lands
(August 28, 2018; Facing Northeast)

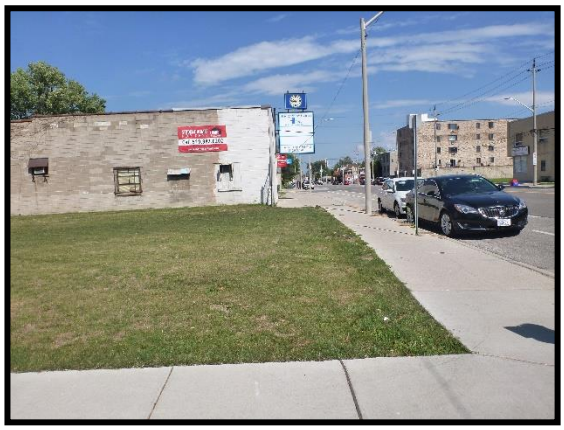


Image 2: Disturbed Lands
(August 28, 2018; Facing Northeast)

Image 3: Disturbed Lands
(August 28, 2018; Facing South)

Image 4: Disturbed Lands
(August 28, 2018; Facing Southwest)

Image 5: Disturbed Lands
(August 28, 2018; Facing Northeast)

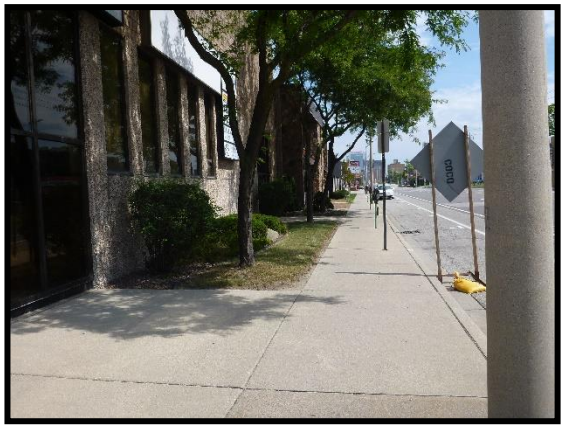


Image 6: Disturbed Lands
(August 28, 2018; Facing Northeast)

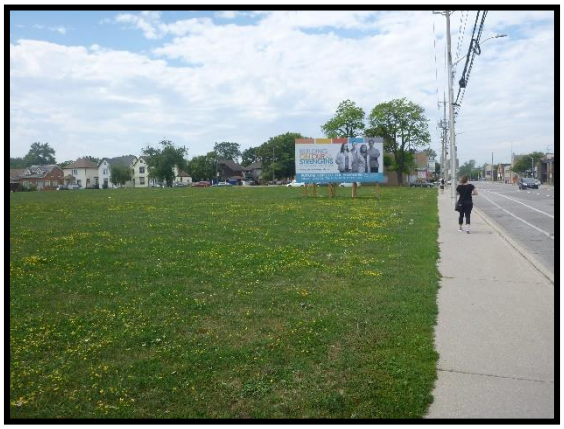


Image 7: Disturbed Lands
(August 28, 2018; Facing Southwest)

Image 8: Disturbed Lands
(August 28, 2018; Facing South)

Image 9: Disturbed Lands
(August 28, 2018; Facing West)

Image 10: Disturbed Lands
(August 28, 2018; Facing Northeast)

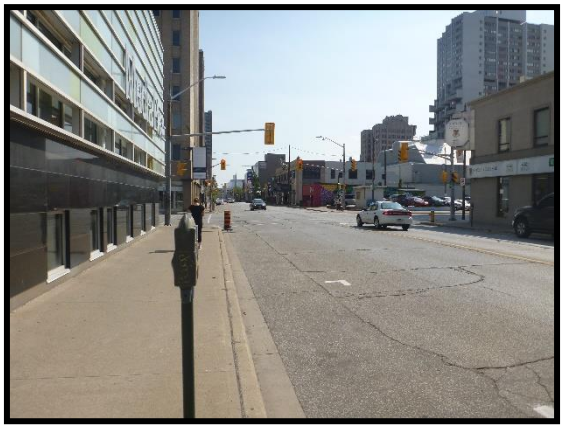


Image 11: Disturbed Lands
(August 28, 2018; Facing Northeast)

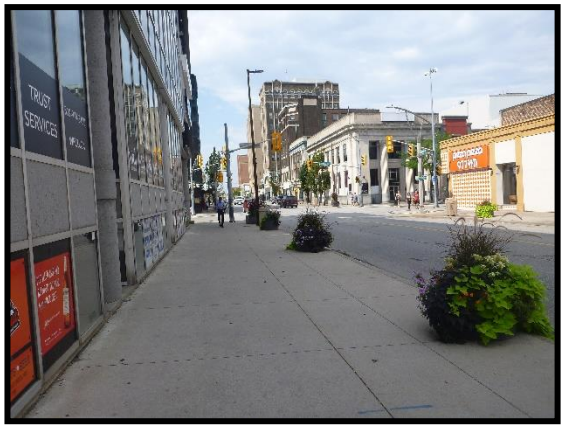


Image 12: Disturbed Lands
(August 28, 2018; Facing West)

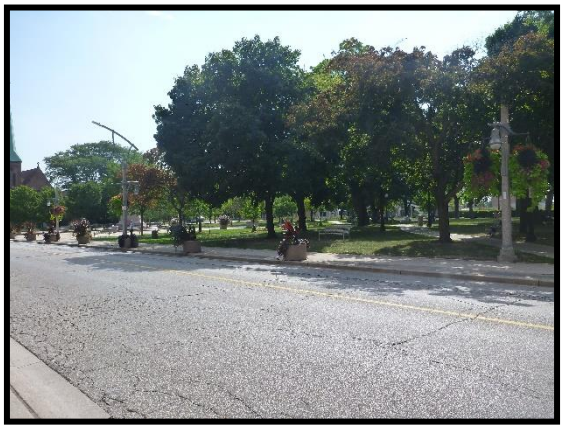


Image 13: Disturbed Lands
(August 28, 2018; Facing Southeast)

Image 14: Disturbed Lands
(August 28, 2018; Facing Southeast)

Image 15: Area of Surficial and Deeply Buried Potential
(August 28, 2018; Facing Southwest)

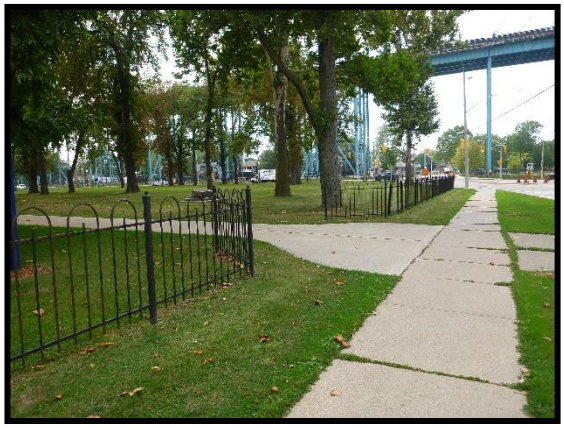


Image 16: Area of Surficial and Deeply Buried Potential
(August 28, 2018; Facing Southwest)

Image 17: Area of Surficial and Deeply Buried Potential
(August 28, 2018; Facing Southwest)

Image 18: Area of Surficial and Deeply Buried Potential
(August 28, 2018; Facing Southwest)

Image 19: Area of Surficial Potential
(August 28, 2018; Facing Southwest)

Image 20: Area of Surficial Potential
(August 28, 2018; Facing Southwest)

Image 21: Area of Surficial Potential
(August 28, 2018; Facing Northeast)

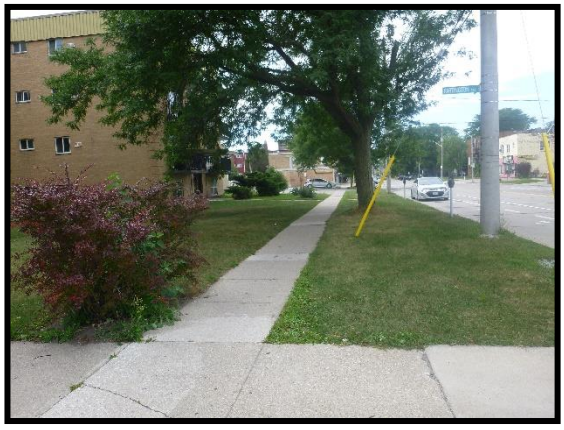


Image 22: Area of Surficial Potential
(August 28, 2018; Facing Southwest)

Image 23: Area of Surficial Potential
(August 28, 2018; Facing Northeast)

Image 24: Area of Deeply Buried Potential
(August 28, 2018; Facing West)

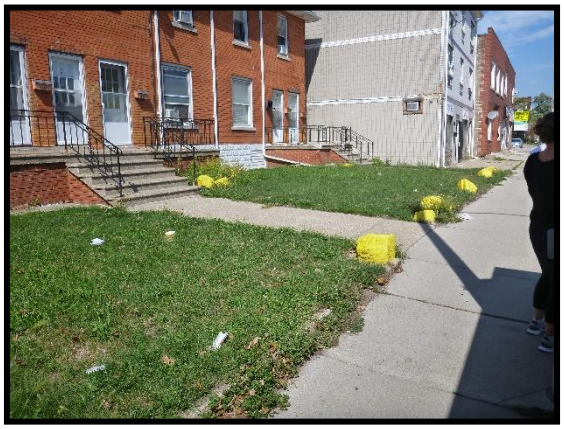


Image 25: Area of Surficial Potential
(August 28, 2018; Facing Northeast)

Image 26: Area of Deeply Buried Potential
(August 28, 2018; Facing Southwest)

Image 27: Area of Surficial Potential
(August 28, 2018; Facing Southwest)

Image 28: Area of Deeply Buried Potential
(August 28, 2018; Facing Southwest)

Image 29: Area of Surficial Potential
(August 28, 2018; Facing Northeast)

Image 30: Area of Surficial Potential
(August 28, 2018; Facing Northeast)

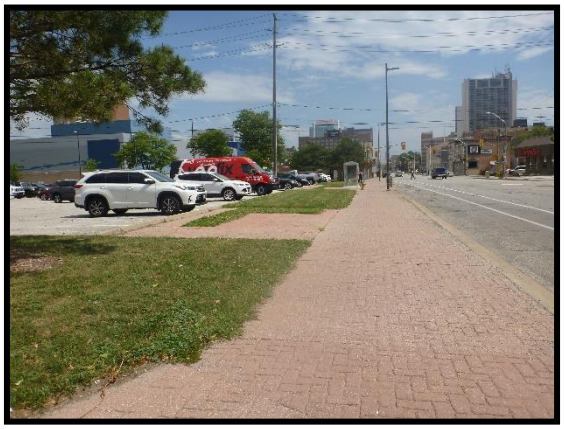


Image 31: Area of Deeply Buried Potential
(August 28, 2018; Facing Northeast)

Image 32: Area of Deeply Buried Potential
(August 28, 2018; Facing Southwest)

Image 33: Area of Surficial Potential
(August 28, 2018; Facing Southeast)

Image 34: Area of Deeply Buried Potential
(August 28, 2018; Facing South)

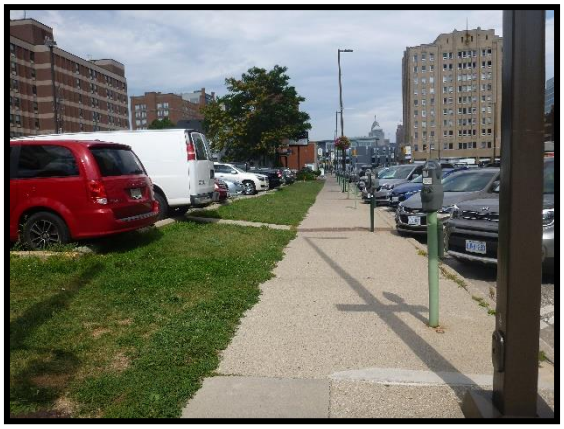


Image 35: Area of Deeply Buried Potential
(August 28, 2018; Facing Northwest)

Image 36: Area of Deeply Buried Potential
(August 28, 2018; Facing Southwest)

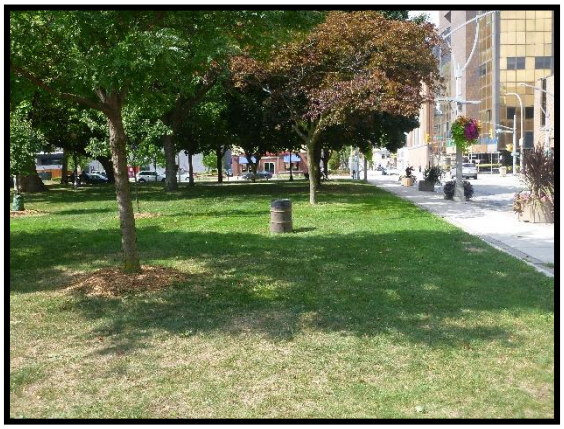


Image 37: Area of Surficial Potential
(August 28, 2018; Facing West)

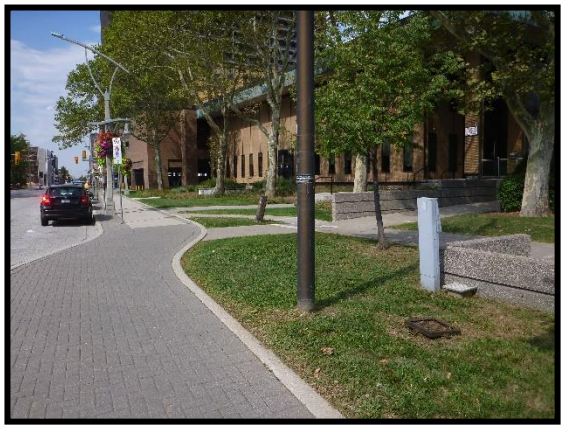


Image 38: Area of Deeply Buried Potential
(August 28, 2018; Facing Northwest)

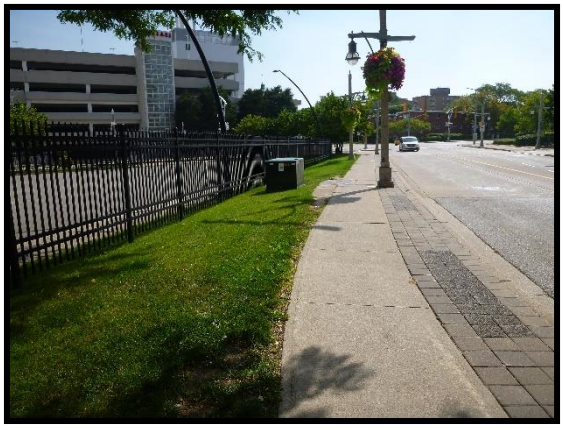
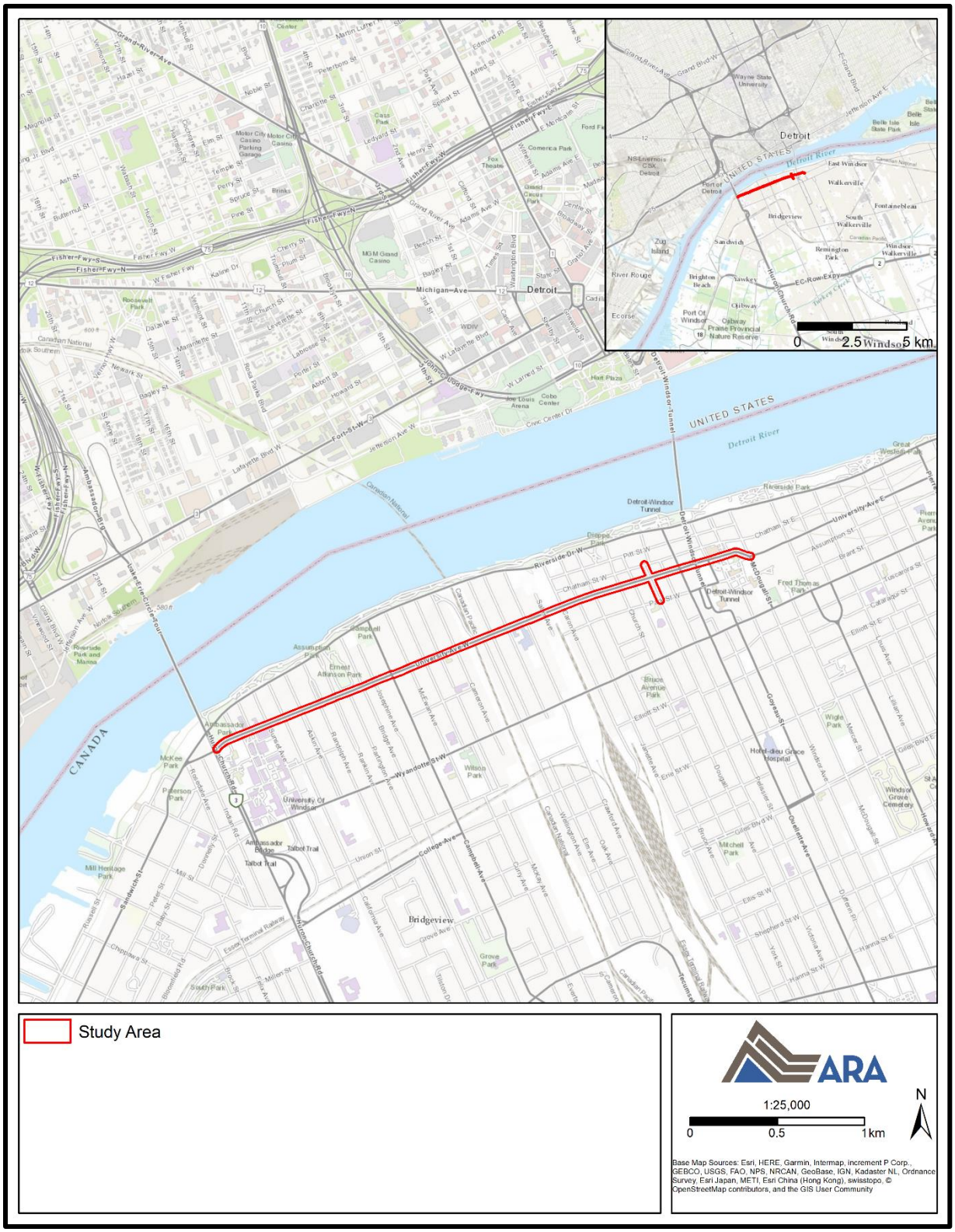


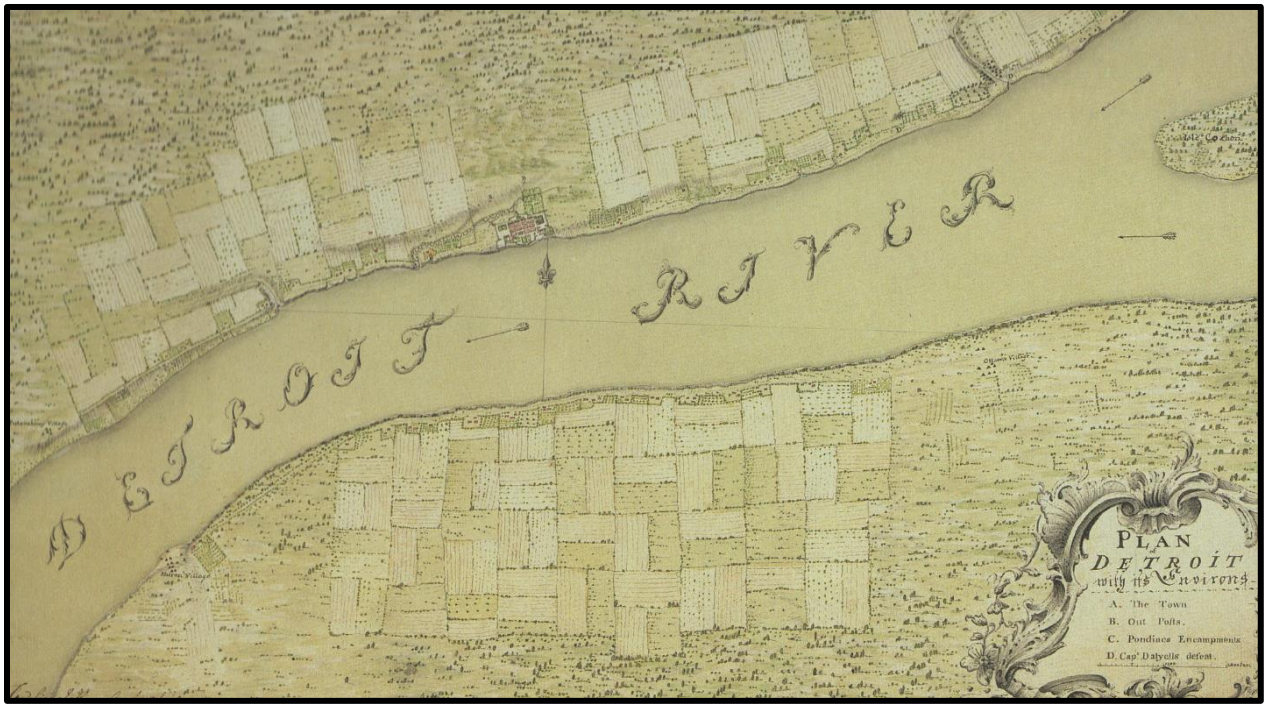
Image 39: Area of Deeply Buried Potential
(August 28, 2018; Facing Southeast)

Image 40: Area of Surficial Potential
(August 28, 2018; Facing Southeast)

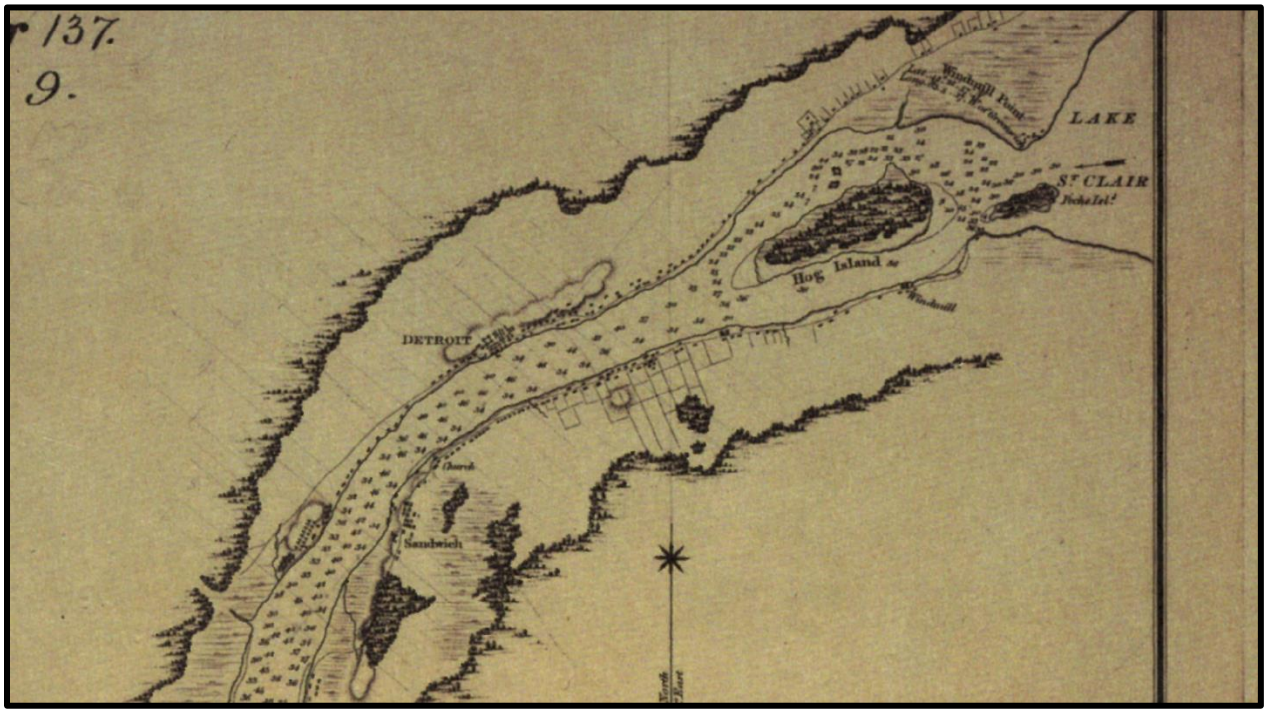
6.0 MAPS



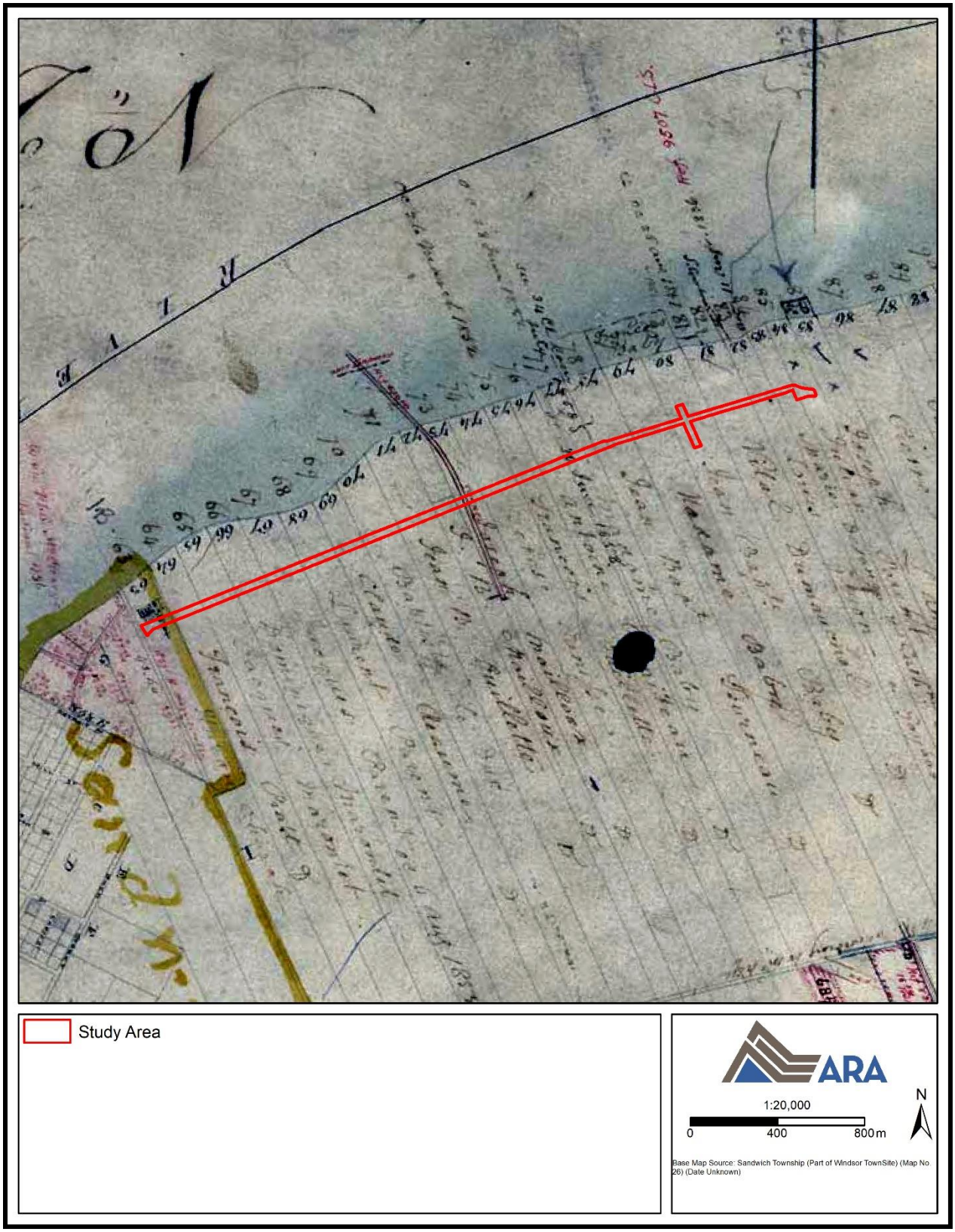
Map 1: Location of the Study Area
(Produced under licence using ArcGIS® software by Esri, © Esri)



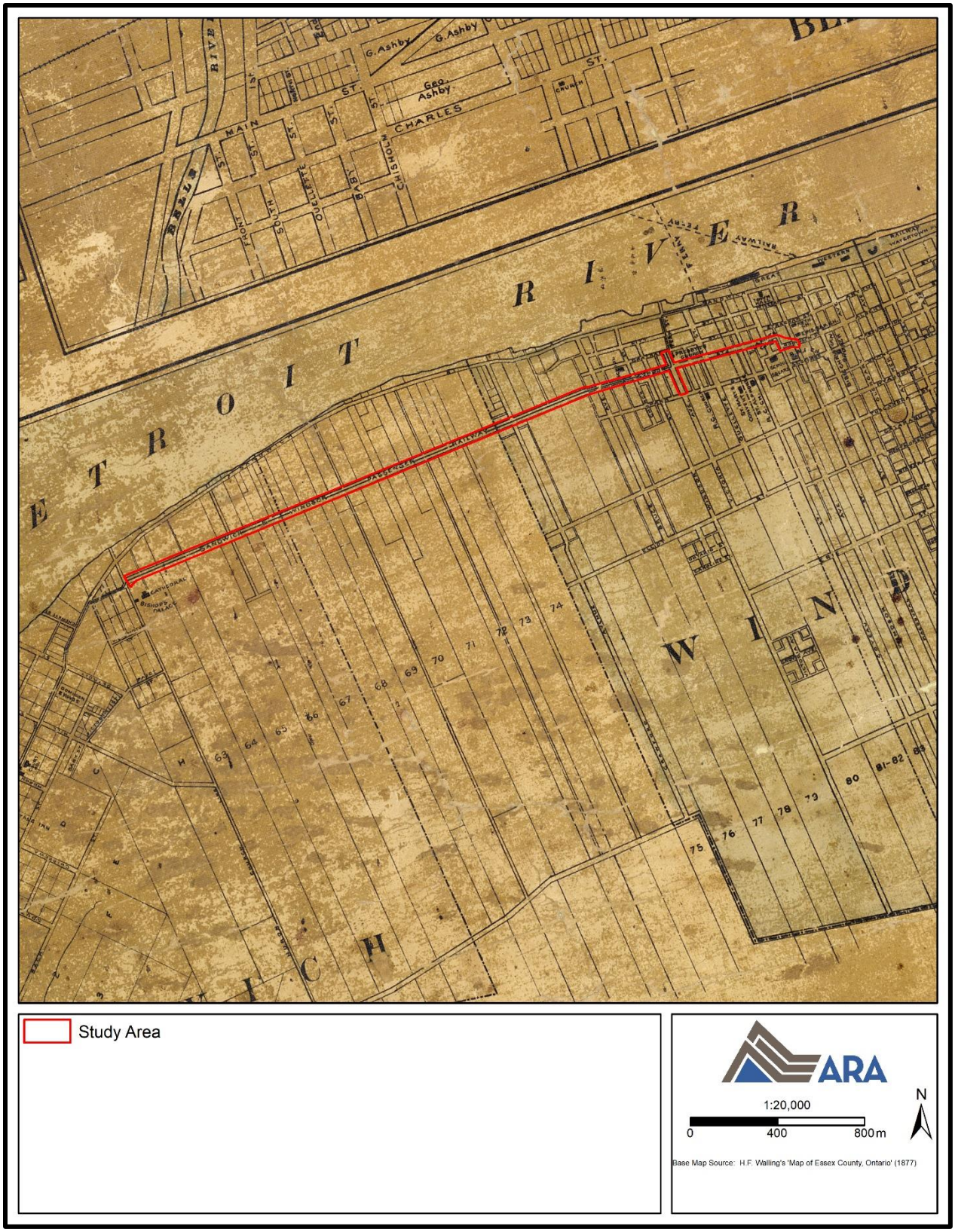
Map 2: J. Montresor's *Plan of Detroit with its Environs* (1764/65)
(Dunnigan 2001:Figure 4.6)



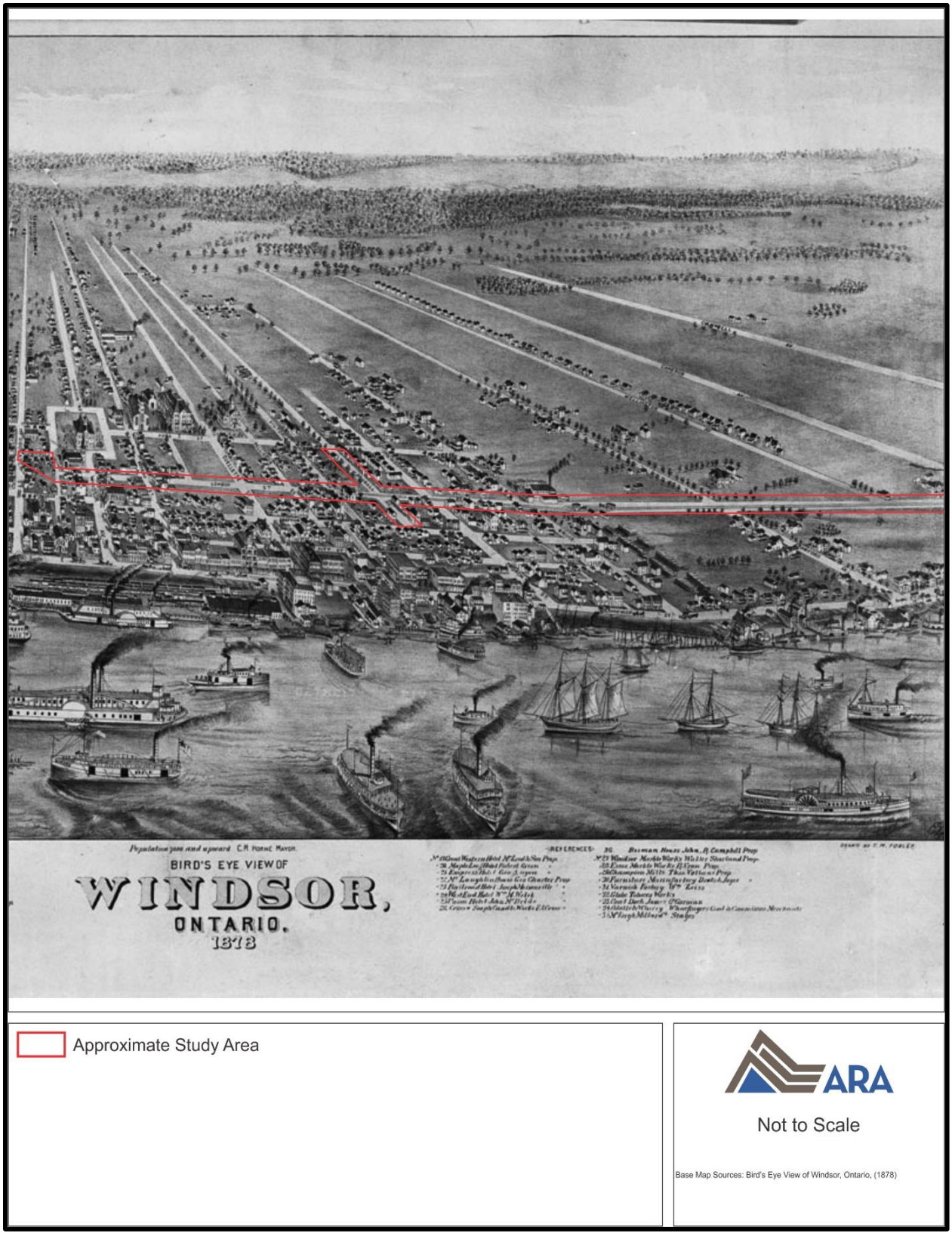
Map 3: W.F. Owen's *A Survey of the River Detroit* (1828)
(Dunnigan 2001:Figure 9.1)



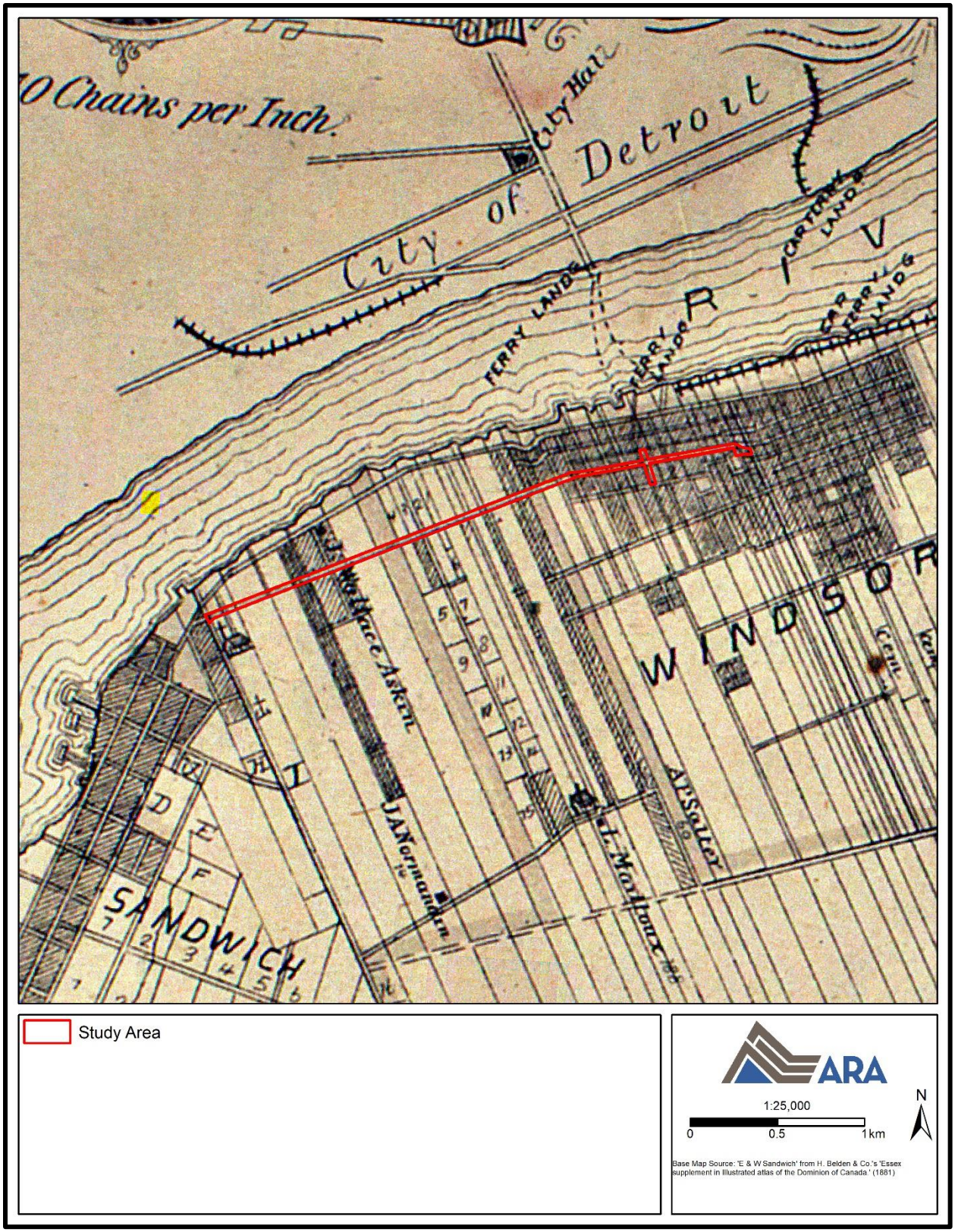
Map 4: *Sandwich Township* Patent Plan (No Date)
(Produced under licence using ArcGIS® software by Esri, © Esri; AO 2015)



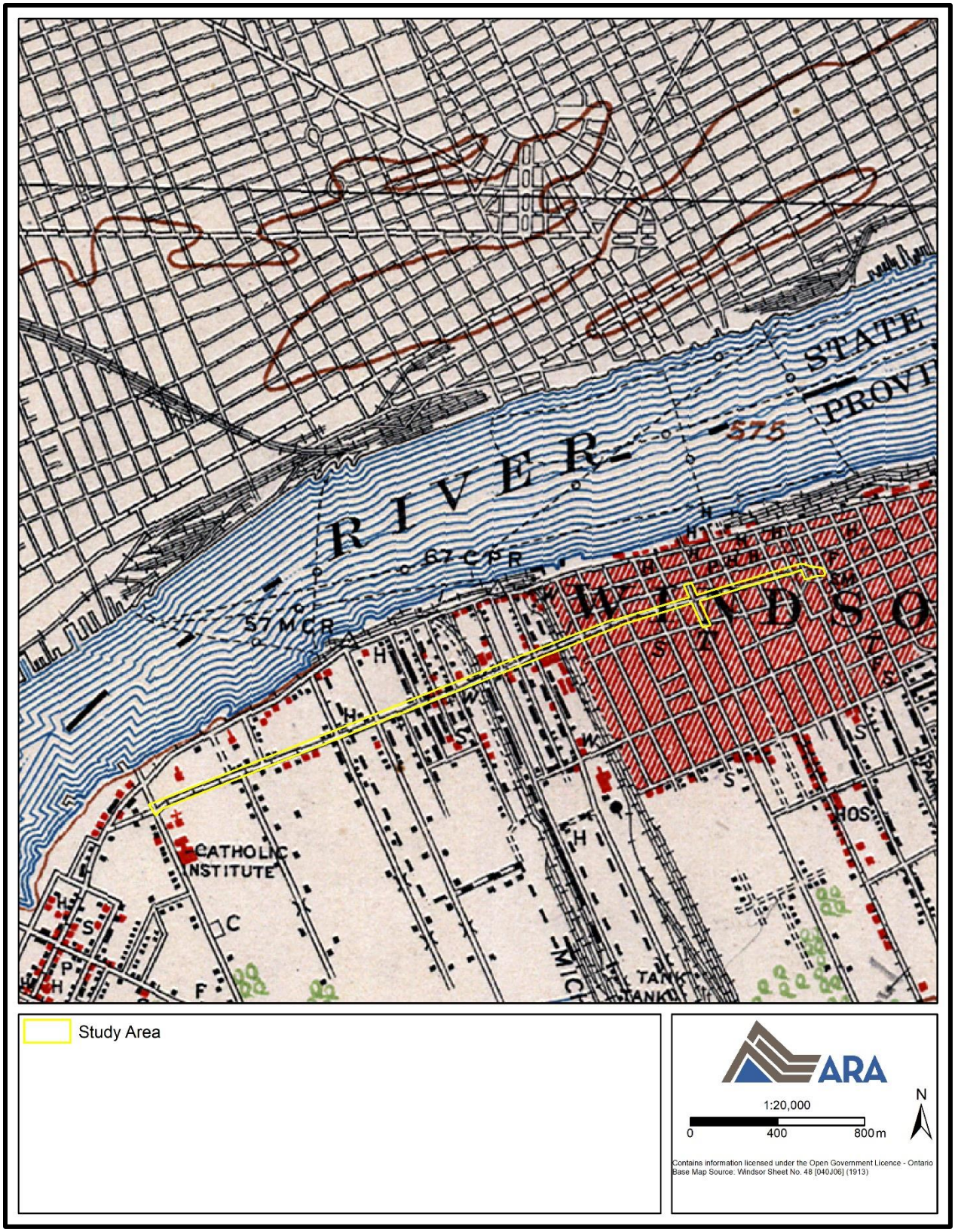
Map 5: H.F. Walling's *Map of Essex County, Ontario* (1877)
(Produced under licence using ArcGIS® software by Esri, © Esri; OHCMP 2019)



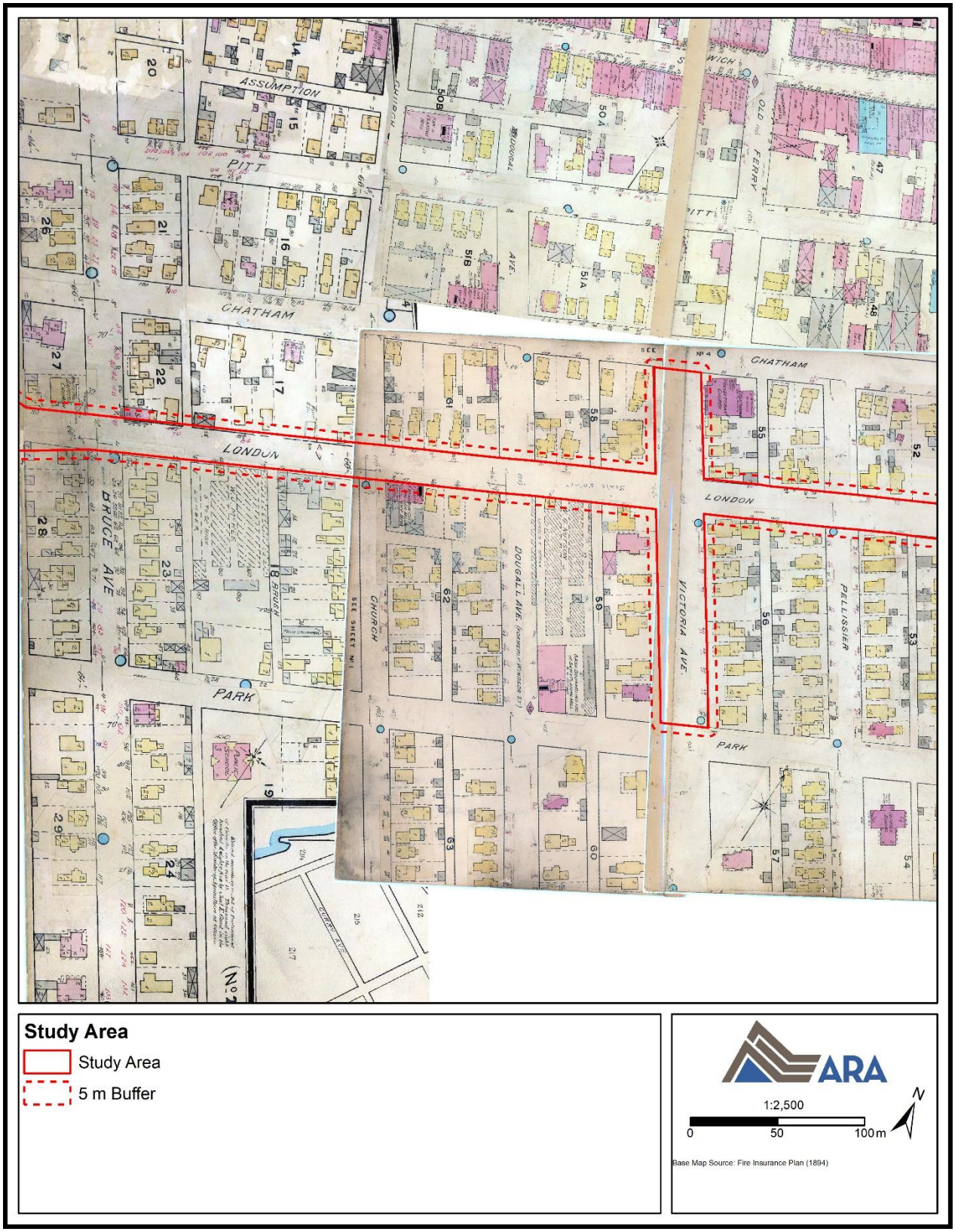
Map 6: T.M Fowler's *Bird's Eye View of Windsor, Ontario* (1878)
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



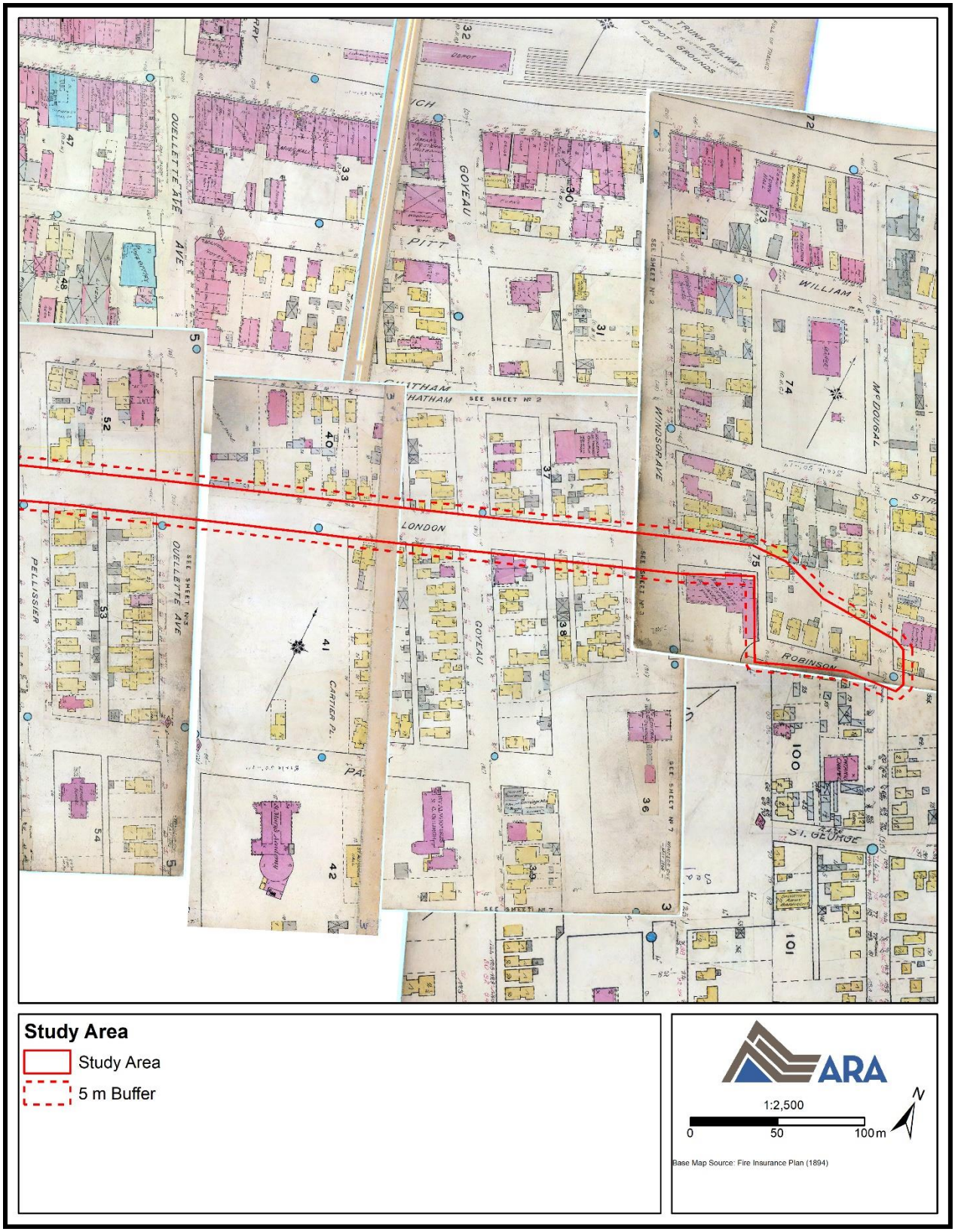
Map 7: H. Belden & Co.'s *Illustrated Atlas of the Dominion of Canada: Essex Supplement* (1881)
(Produced under licence using ArcGIS® software by Esri, © Esri; McGill University 2001)



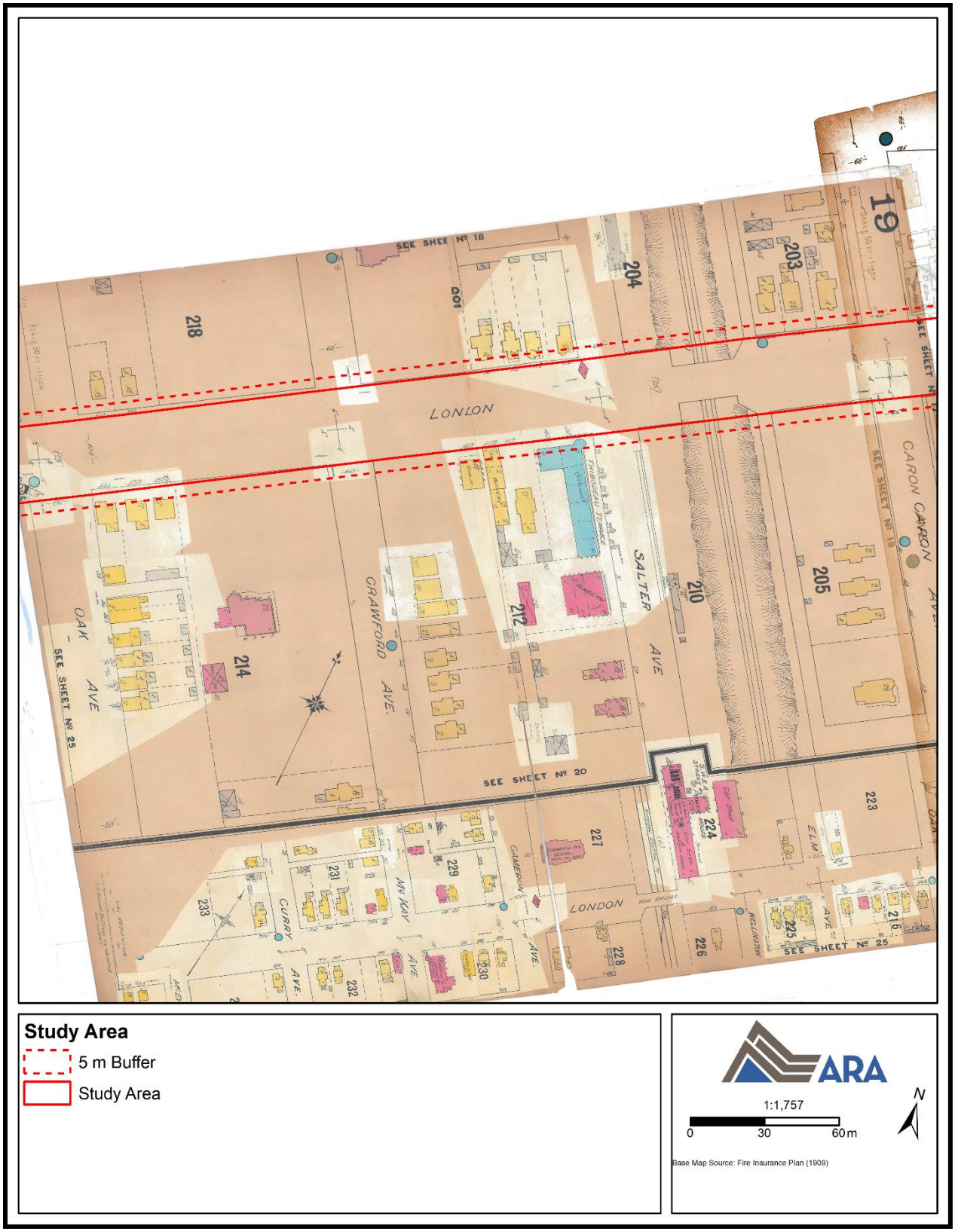
Map 8: Topographic Map (1913)
(Produced under licence using ArcGIS® software by Esri, © Esri; OCUL 2019)



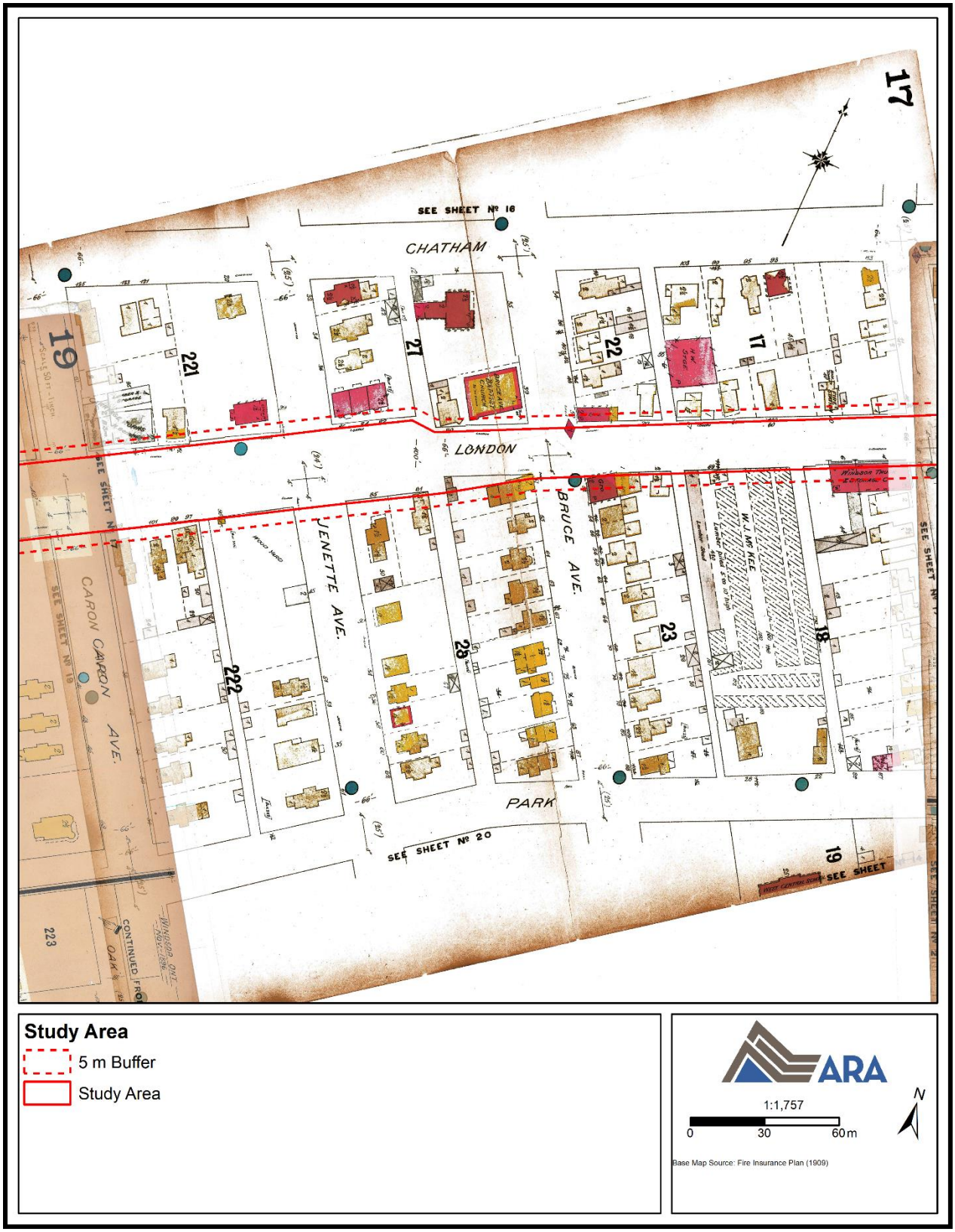
Map 9: Fire Insurance Plan (1894) – Bruce Avenue to Pelissier Street
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



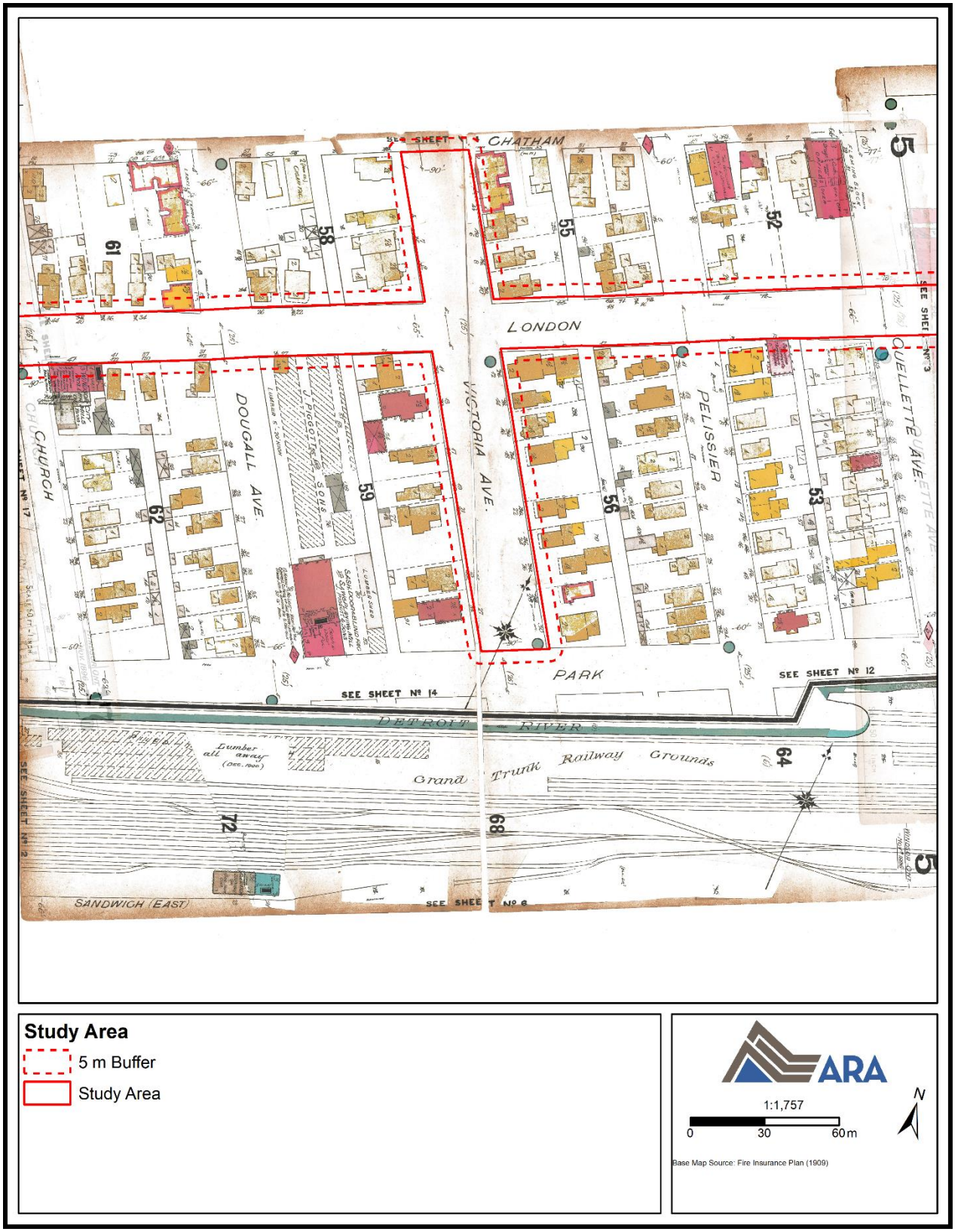
Map 10: Fire Insurance Plan (1894) – Pelissier Street to Eastern Terminus
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



Map 11: Fire Insurance Plan (1909) – Oak Avenue to Caron Avenue
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)

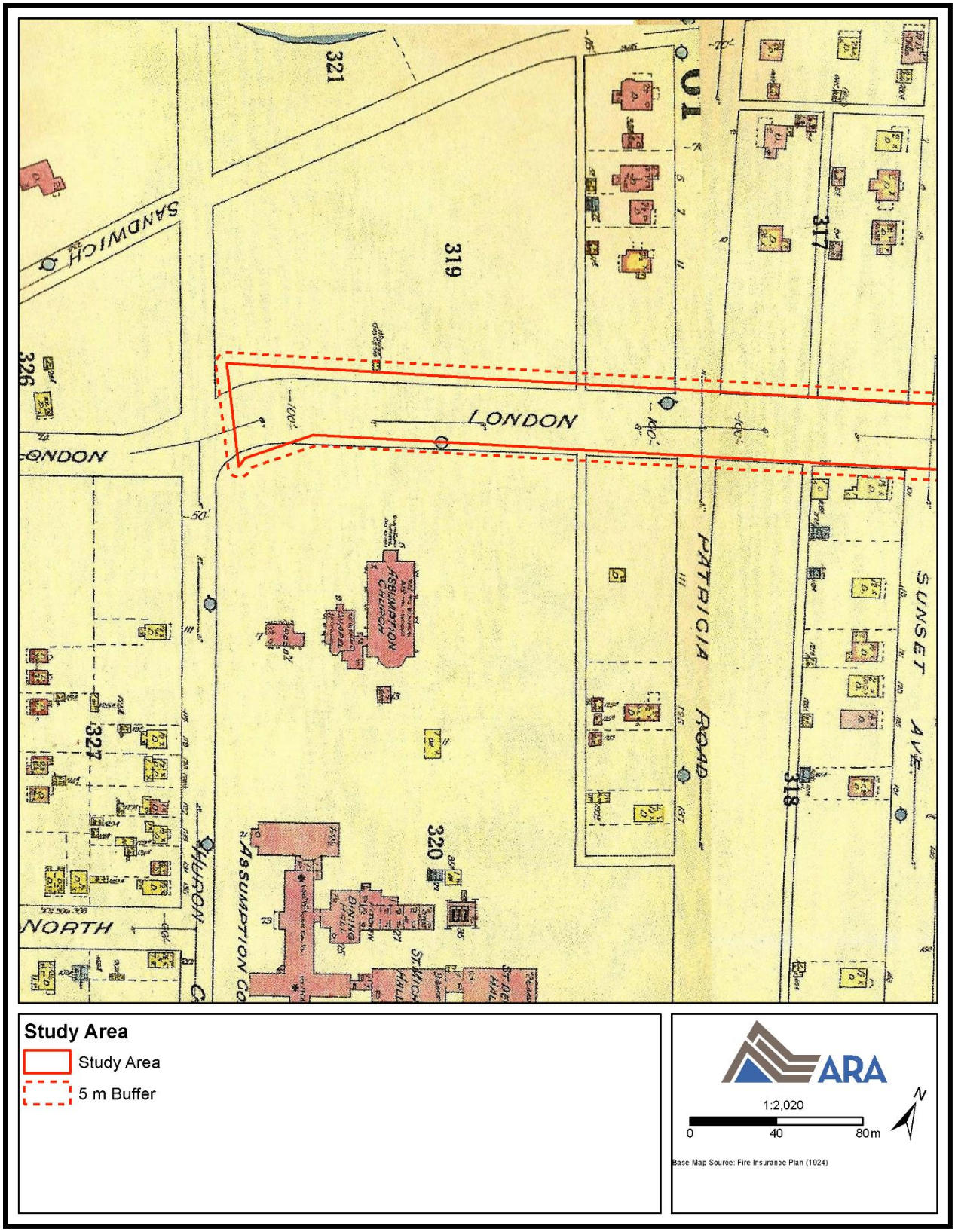


Map 12: Fire Insurance Plan (1909) – Caron Avenue to Church Street
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)

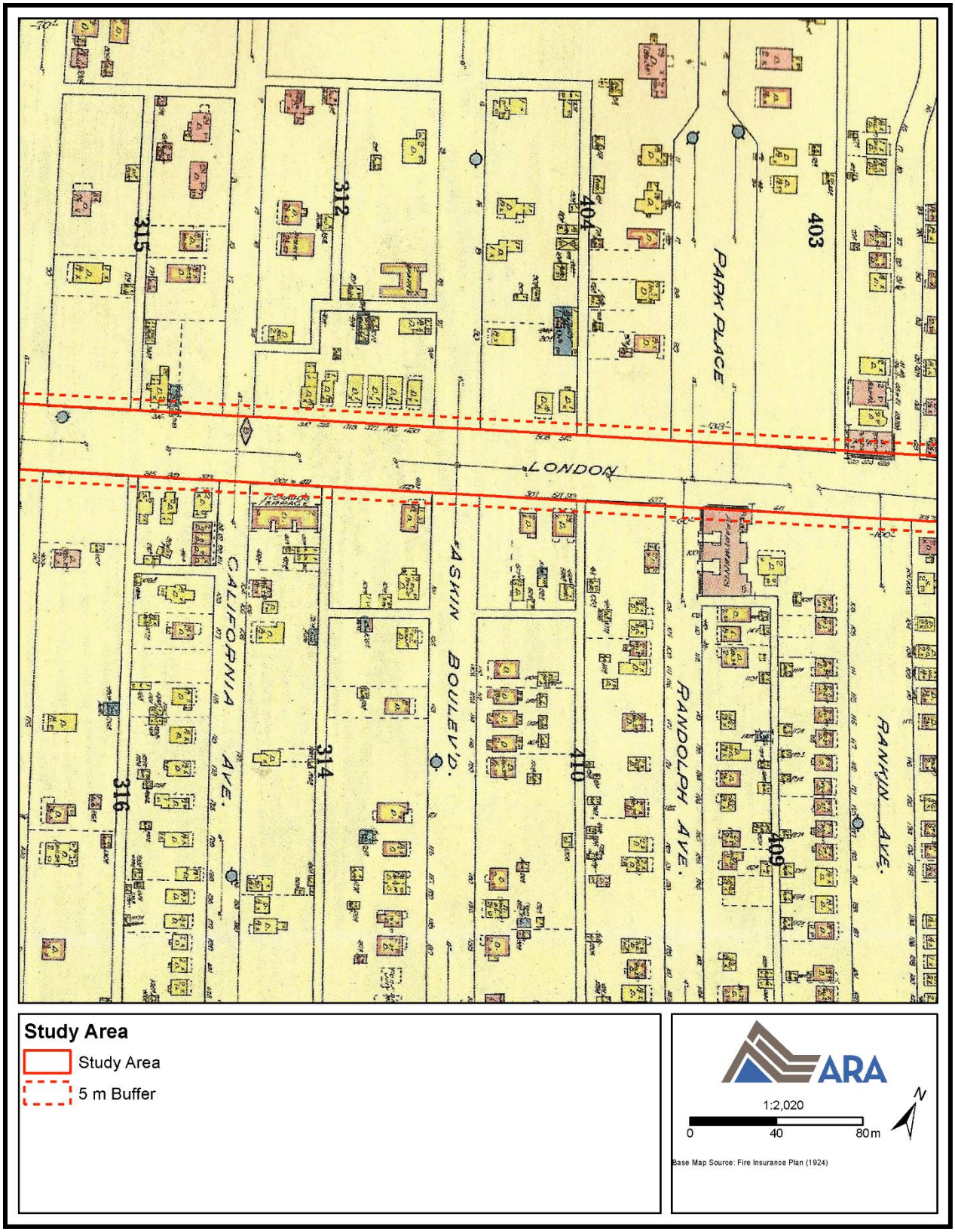


Map 13: Fire Insurance Plan (1909) – Church Street to Ouellette Avenue
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)

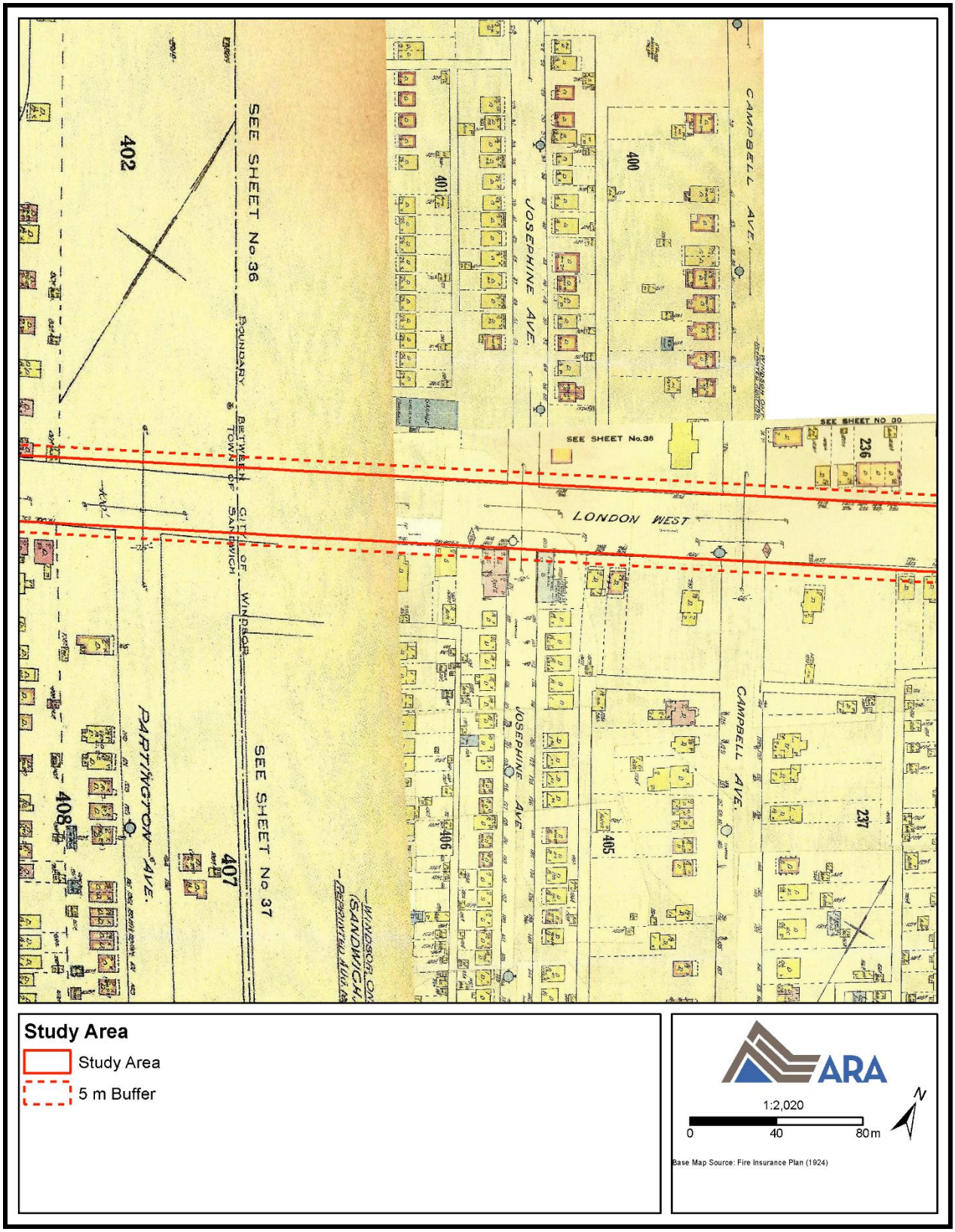
Map 14: Fire Insurance Plan (1909) – Ouellette Avenue to Eastern Terminus
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



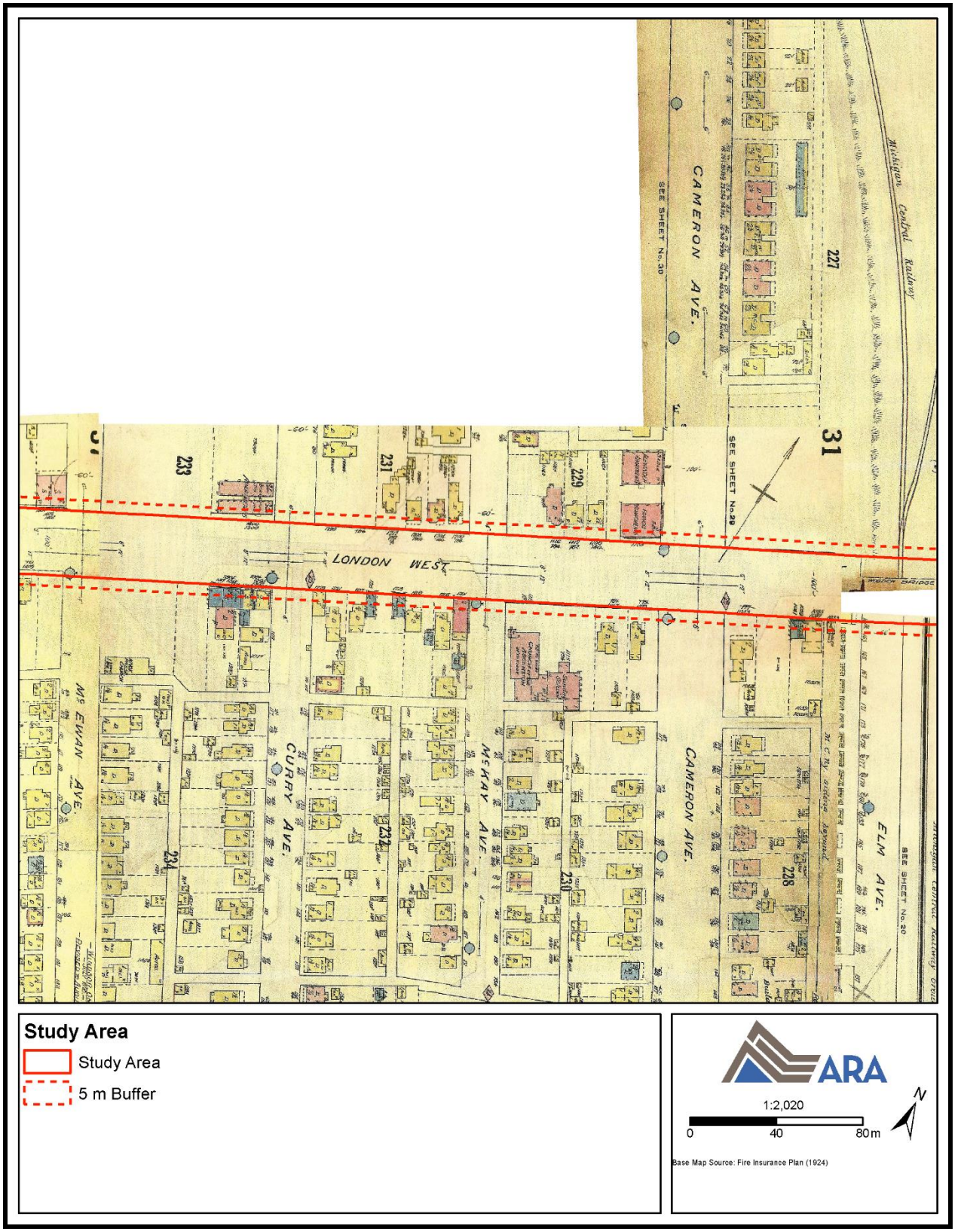
Map 15: Fire Insurance Plan (1924) – Huron Church Road to Sunset Avenue
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



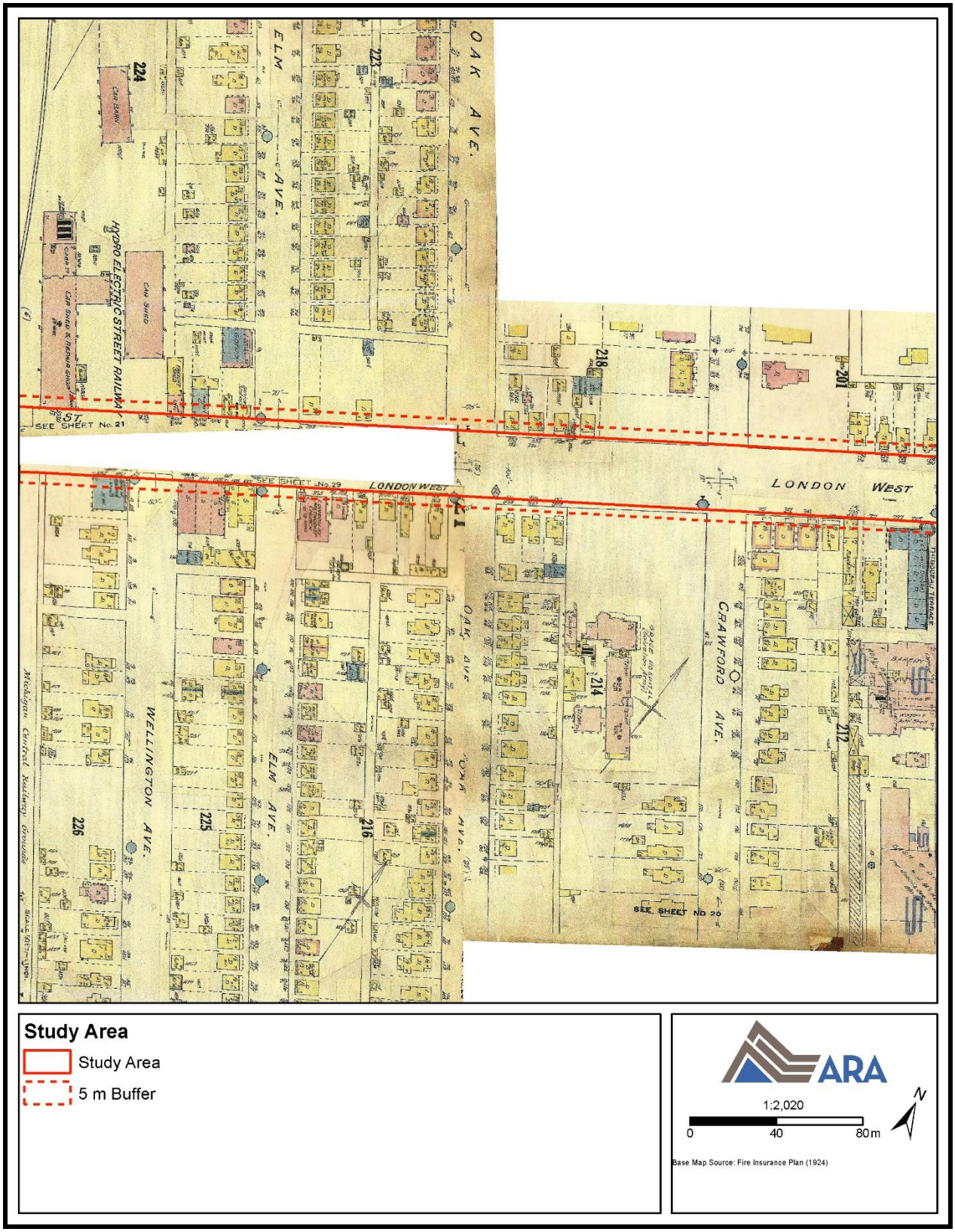
Map 16: Fire Insurance Plan (1924) – Sunset Avenue to Rankin Avenue
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



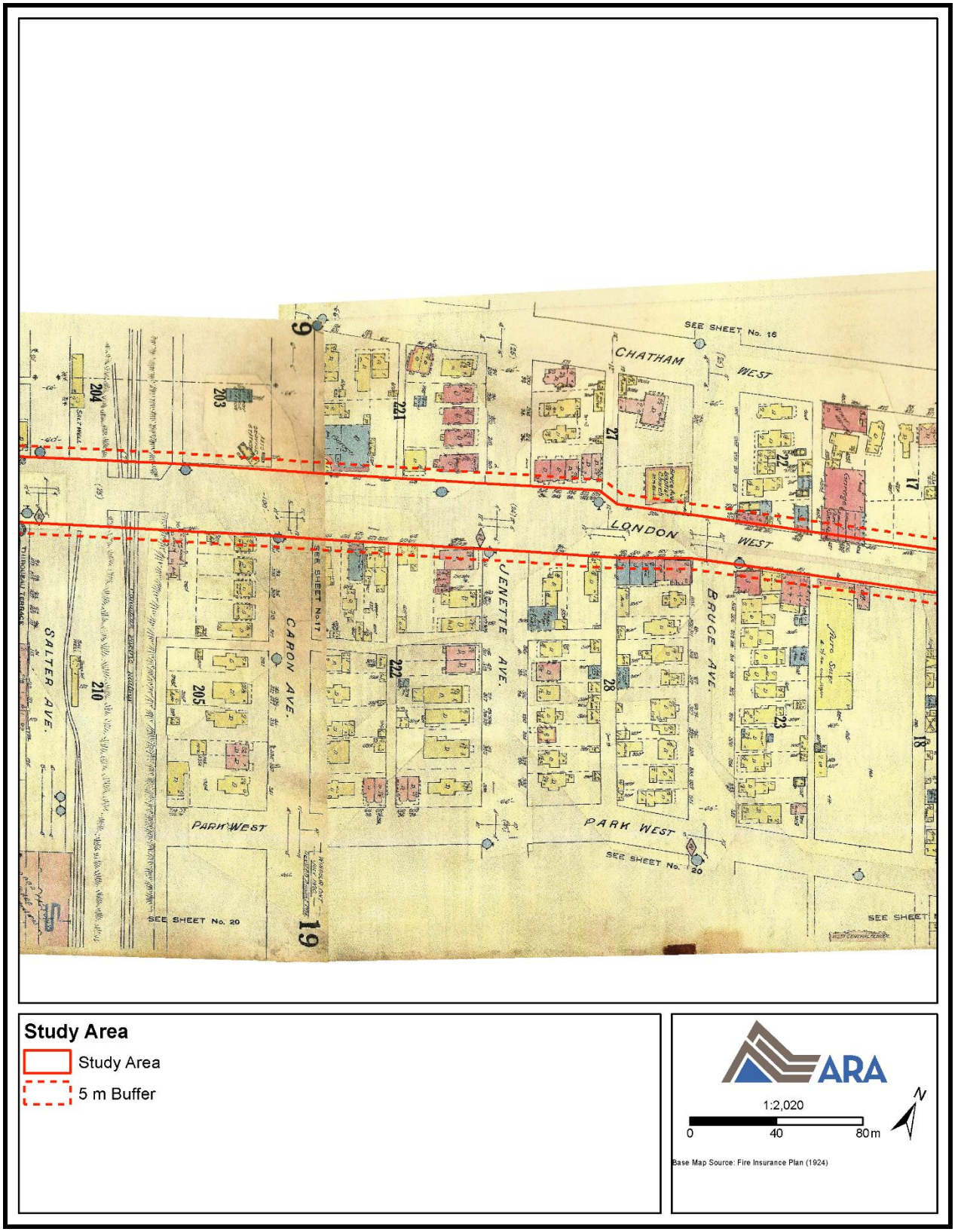
Map 17: Fire Insurance Plan (1924) – Rankin Avenue to McEwan Avenue
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



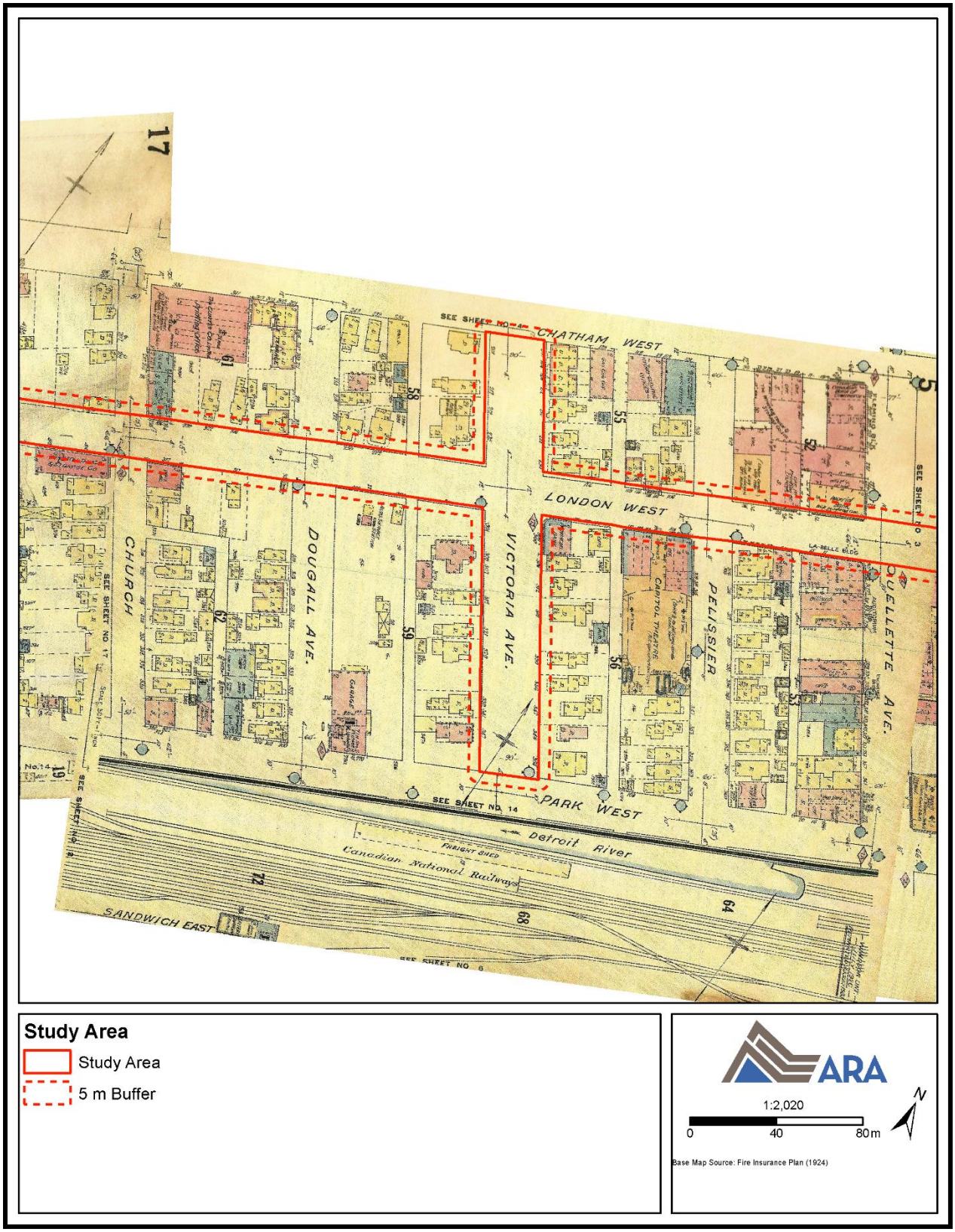
Map 18: Fire Insurance Plan (1924) – McEwan Avenue to Elm Avenue
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



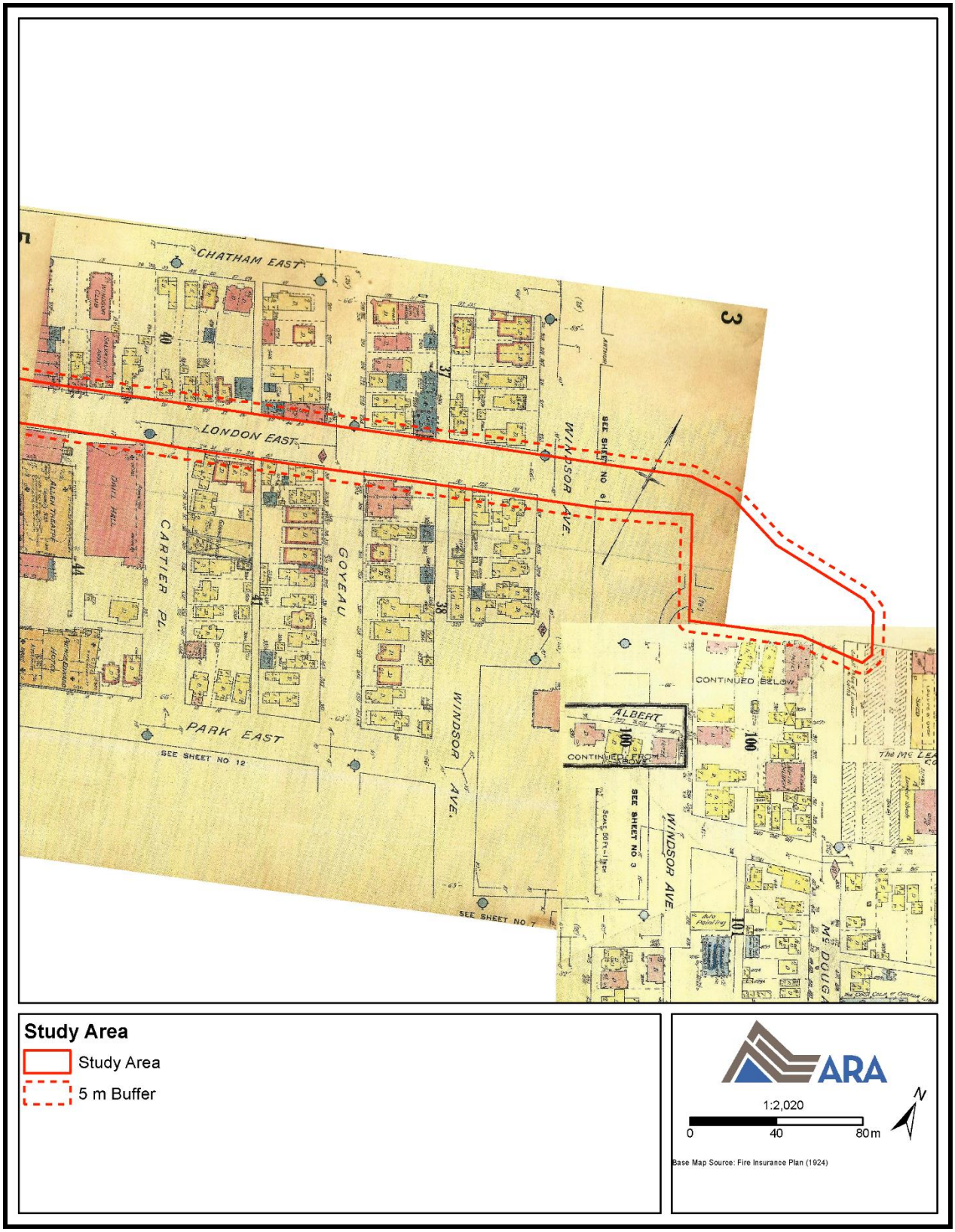
Map 19: Fire Insurance Plan (1924) – Elm Avenue to Salter Avenue
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



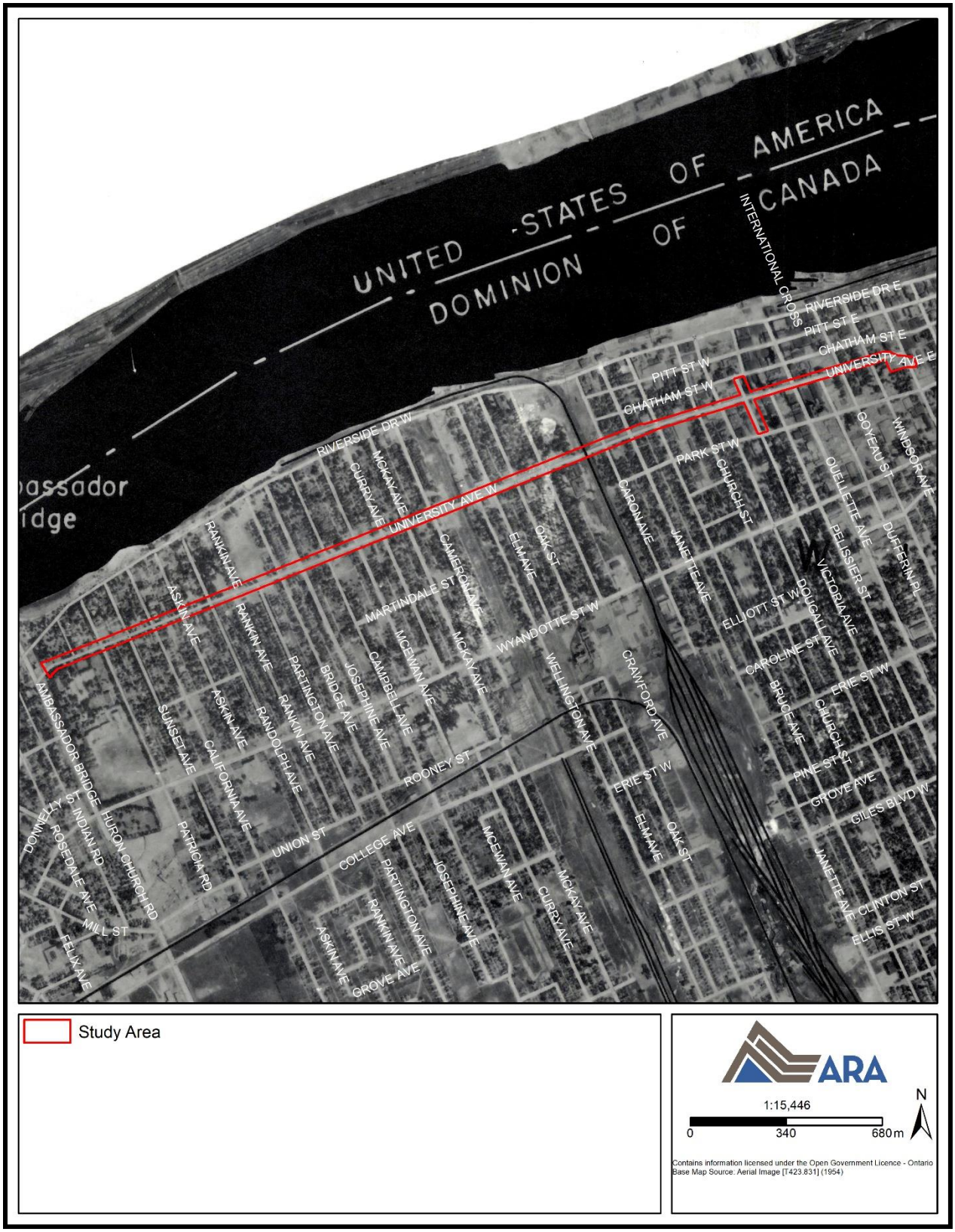
Map 20: Fire Insurance Plan (1924) – Salter Avenue to Church Street
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



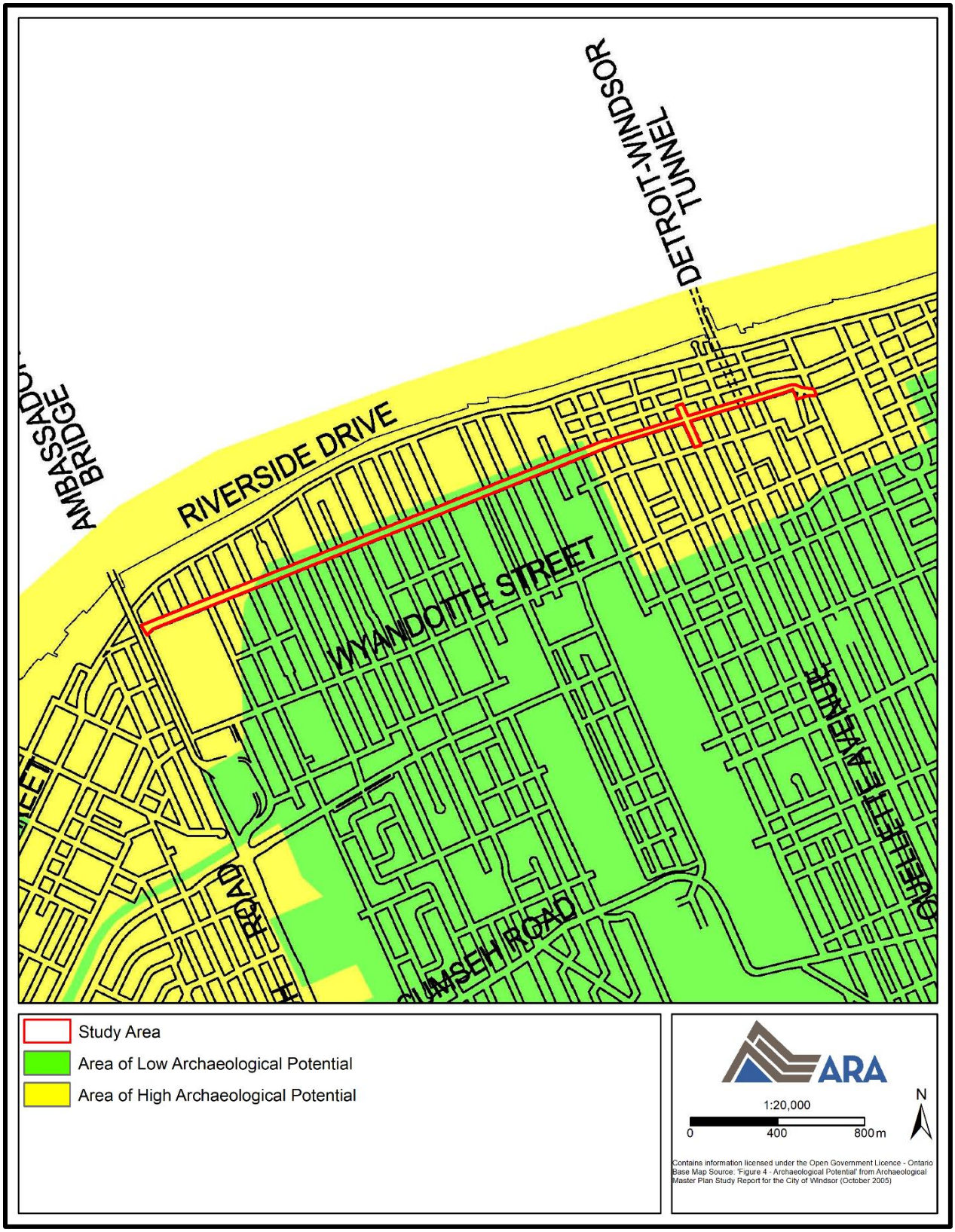
Map 21: Fire Insurance Plan (1924) – Church Street to Ouellette Avenue
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



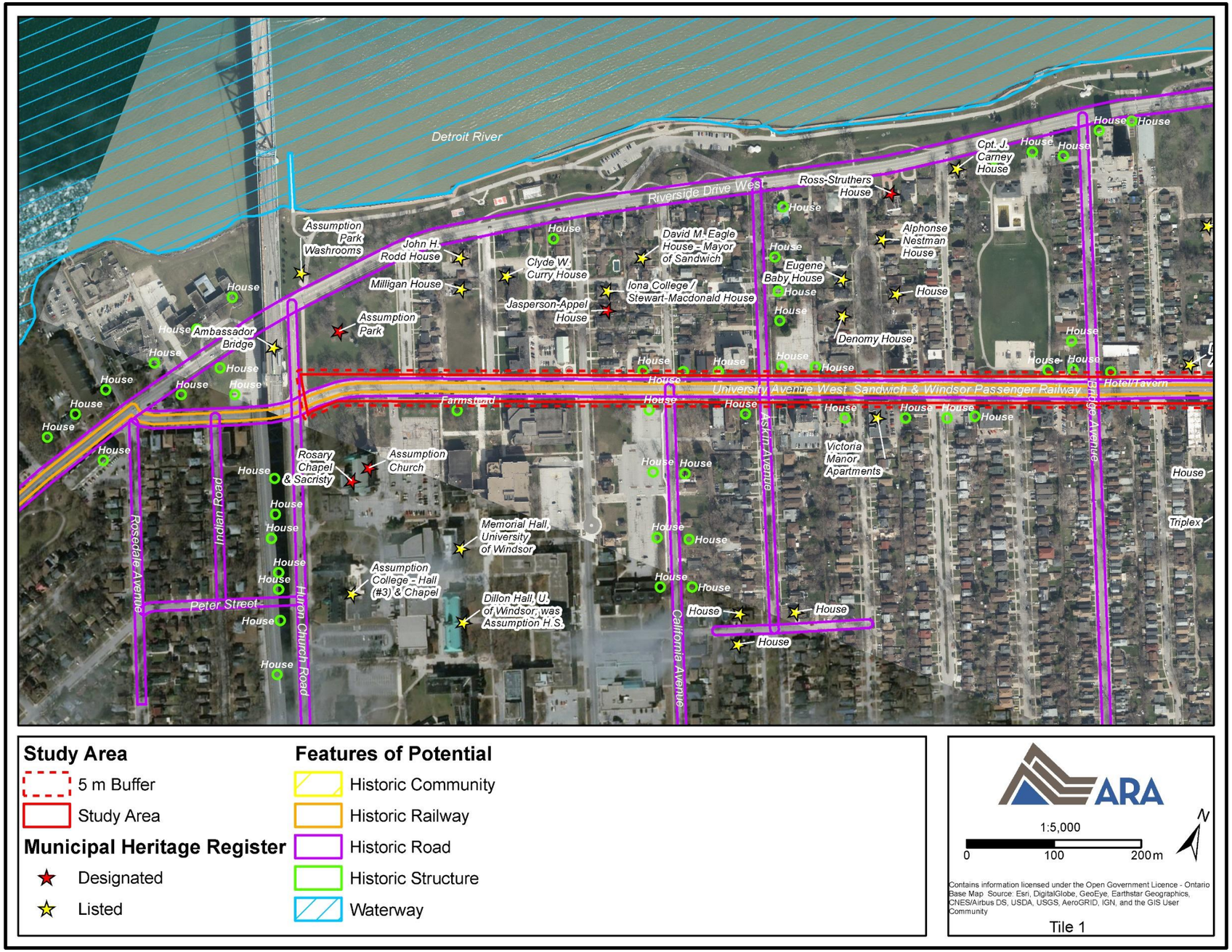
Map 22: Fire Insurance Plan (1924) – Ouellette Avenue to Eastern Terminus
(Produced under licence using ArcGIS® software by Esri, © Esri; Museum Windsor)



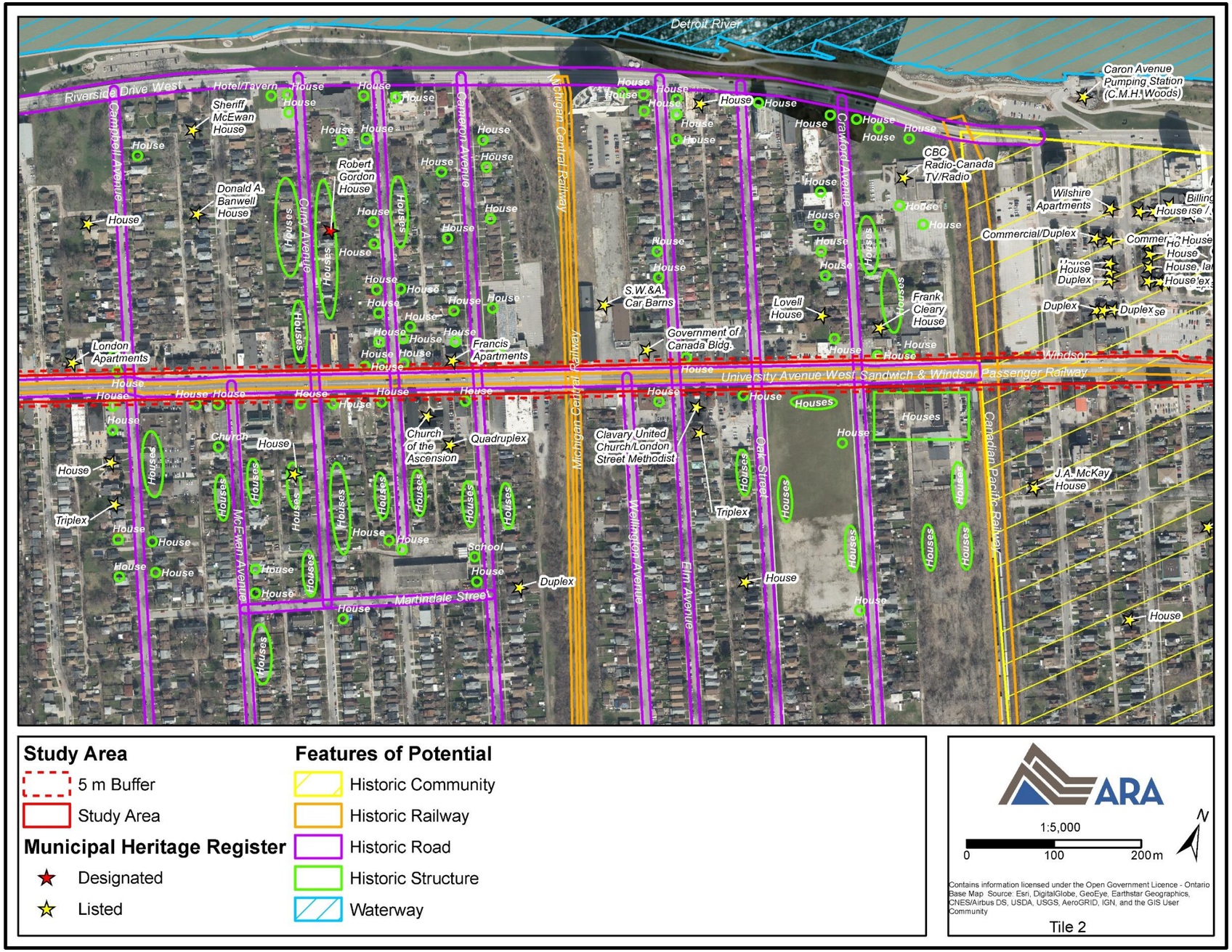
Map 23: Aerial Image (1954)
(Produced under licence using ArcGIS® software by Esri, © Esri; University of Toronto 2018)



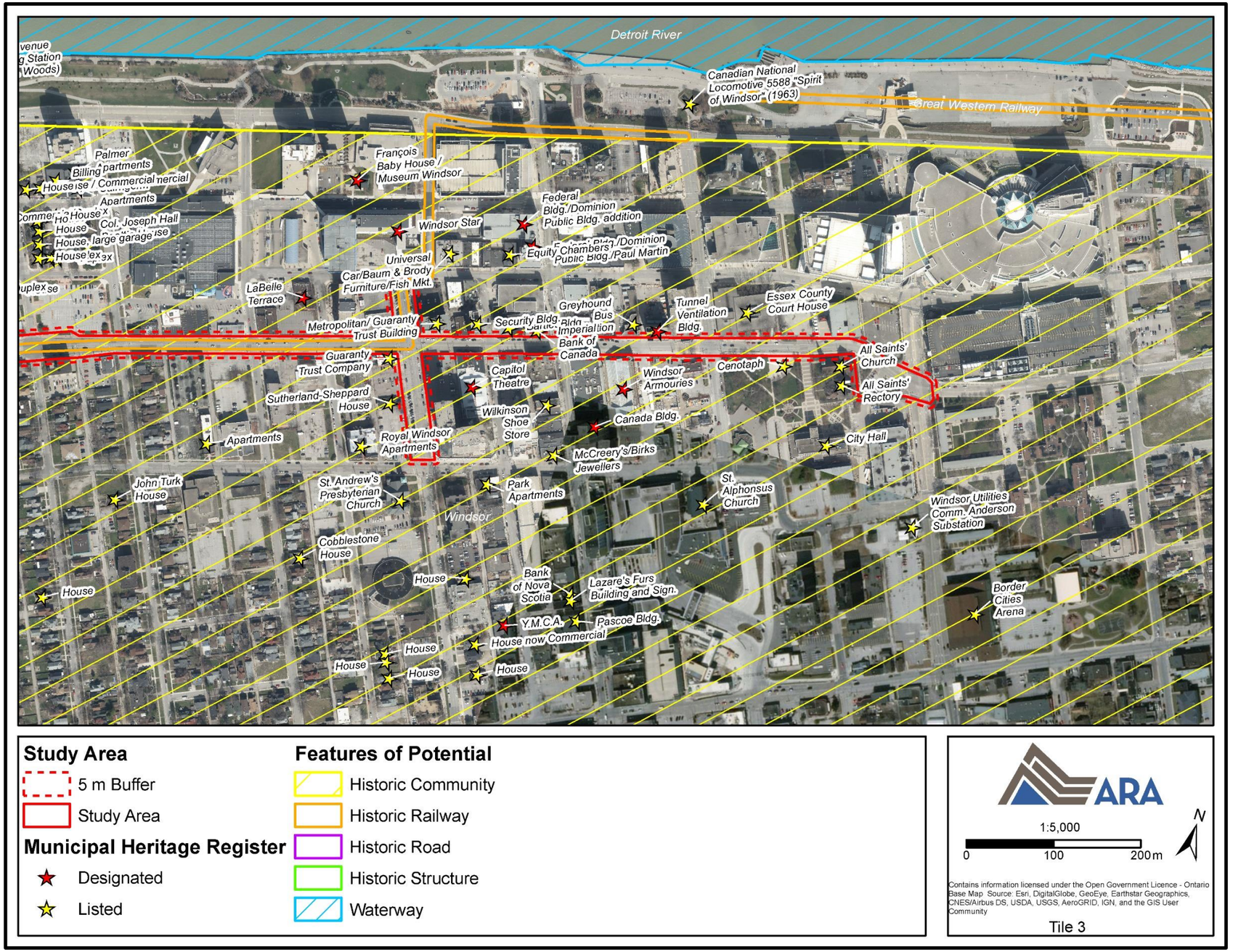
Map 24: City of Windsor's *Archaeological Master Plan*
(Produced under licence using ArcGIS® software by Esri, © Esri; CRM Group 2005)



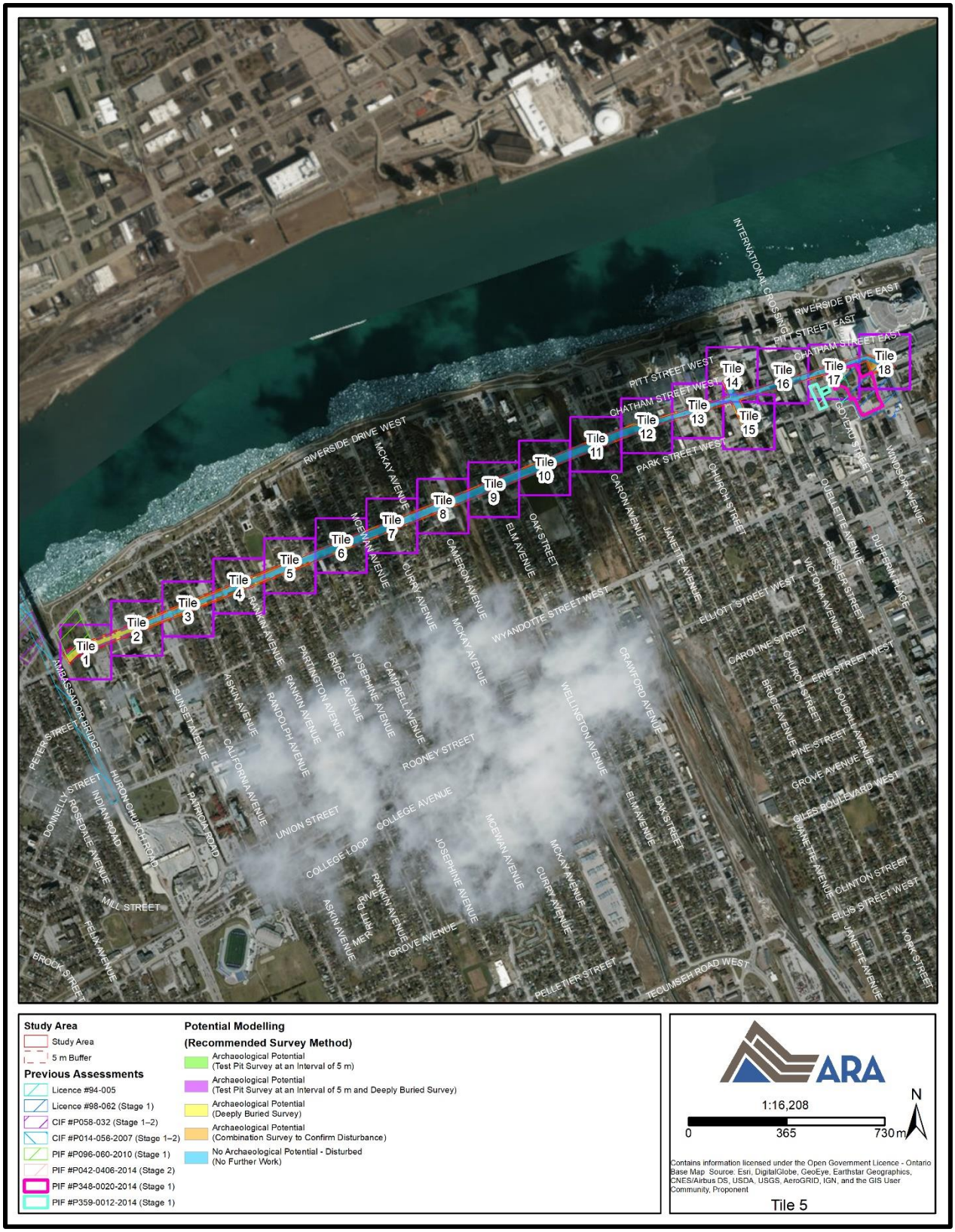
Map 25: Features of Potential (West Part)
(Produced under licence using ArcGIS® software by Esri, © Esri)



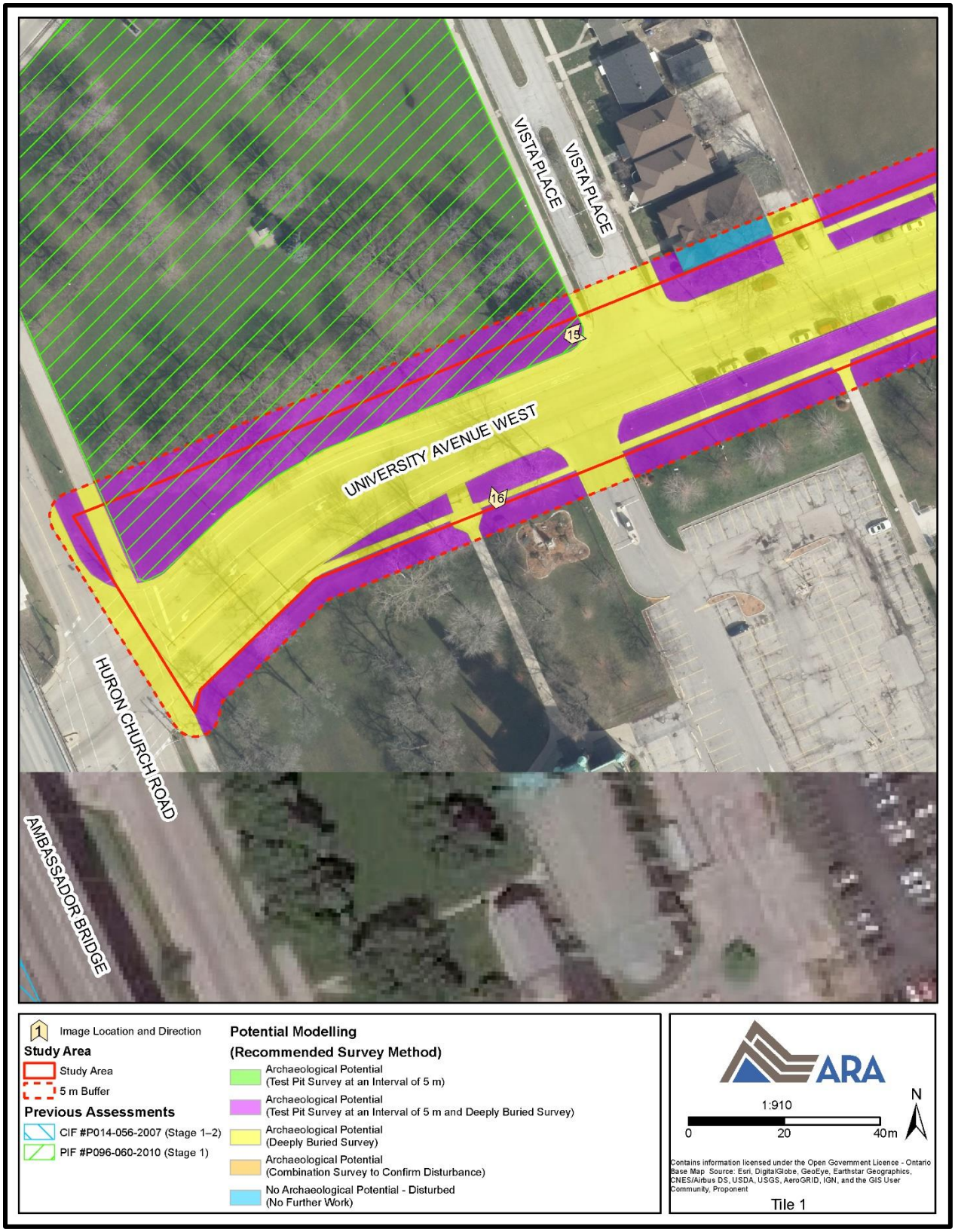
Map 26: Features of Potential (Central Part)
(Produced under licence using ArcGIS® software by Esri, © Esri)



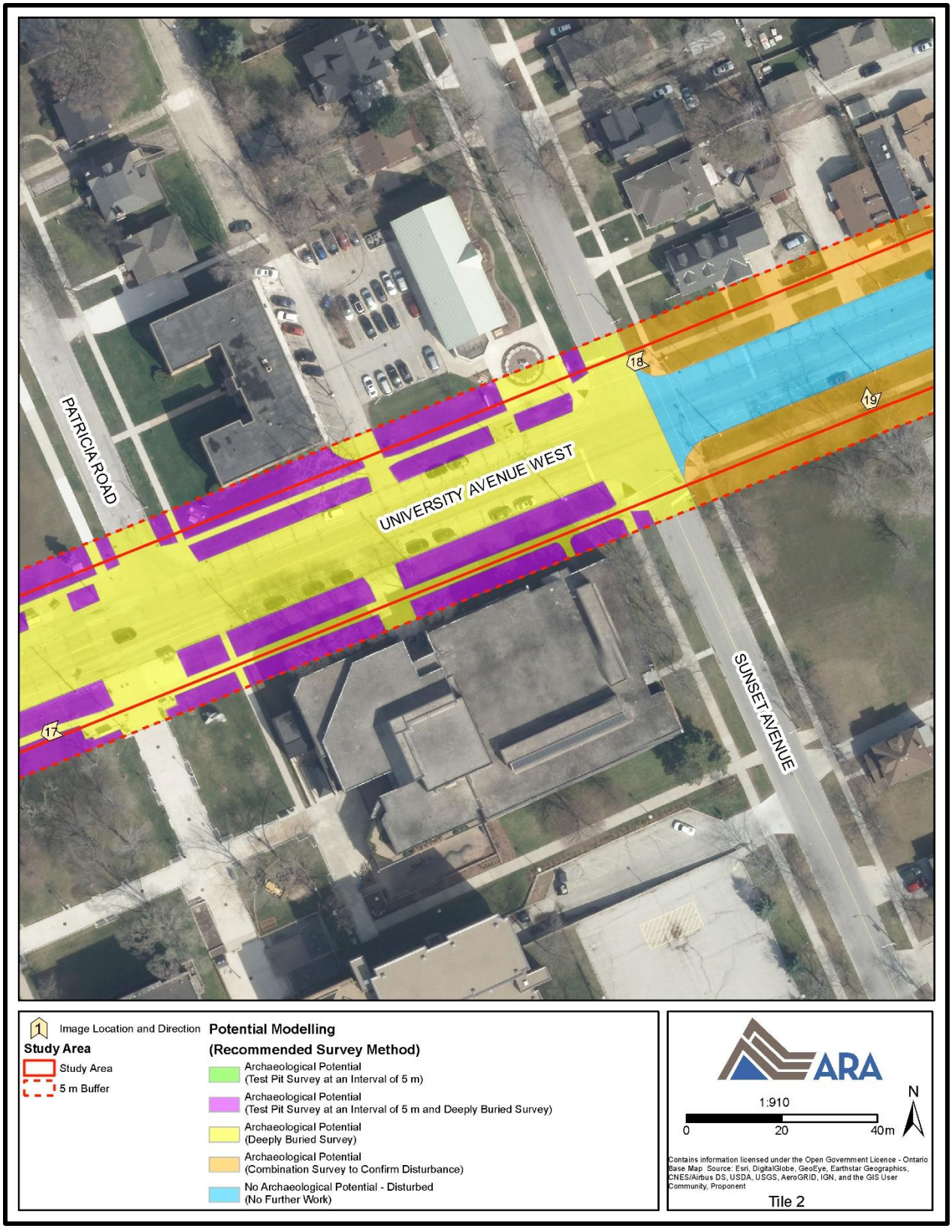
Map 27: Features of Potential (East Part)
(Produced under licence using ArcGIS® software by Esri, © Esri)



Map 28: Potential Modelling and Recommendations (Overview)
(Produced under licence using ArcGIS® software by Esri, © Esri)



Map 29: Potential Modelling and Recommendations (Tile 1)
(Produced under licence using ArcGIS® software by Esri, © Esri)



Map 30: Potential Modelling and Recommendations (Tile 2)
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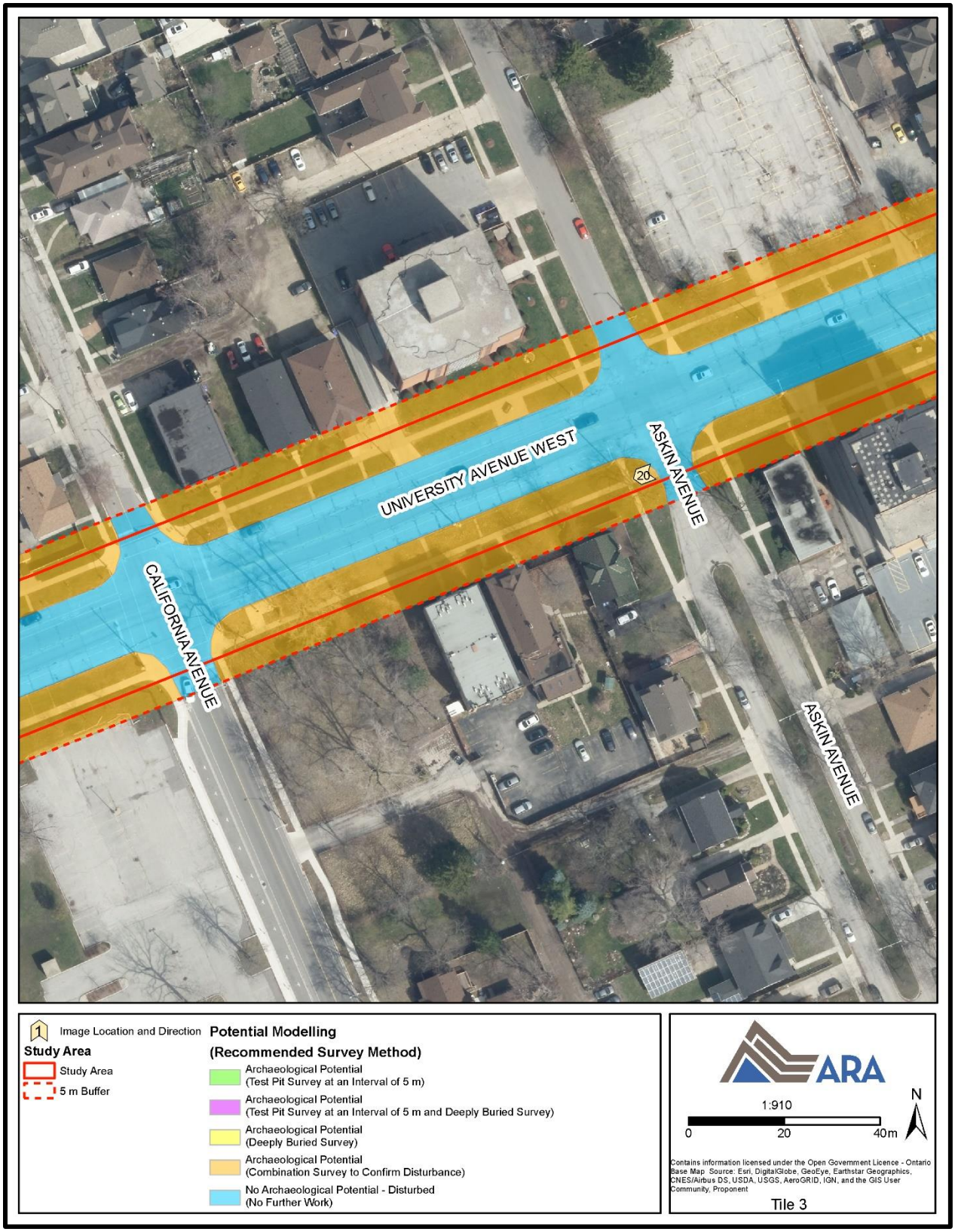
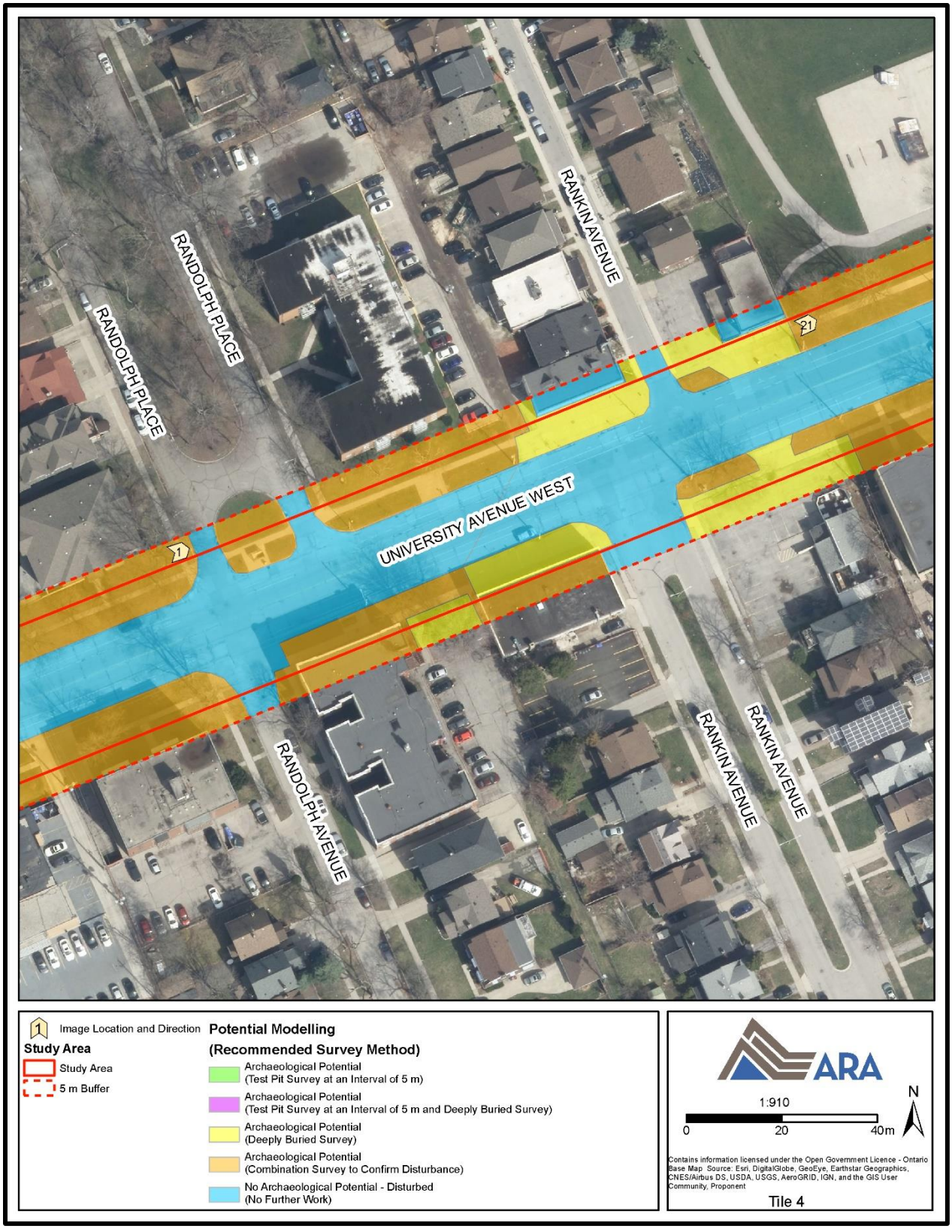


Map 31: Potential Modelling and Recommendations (Tile 3)
(Produced under licence using ArcGIS® software by Esri, © Esri)



Map 32: Potential Modelling and Recommendations (Tile 4)
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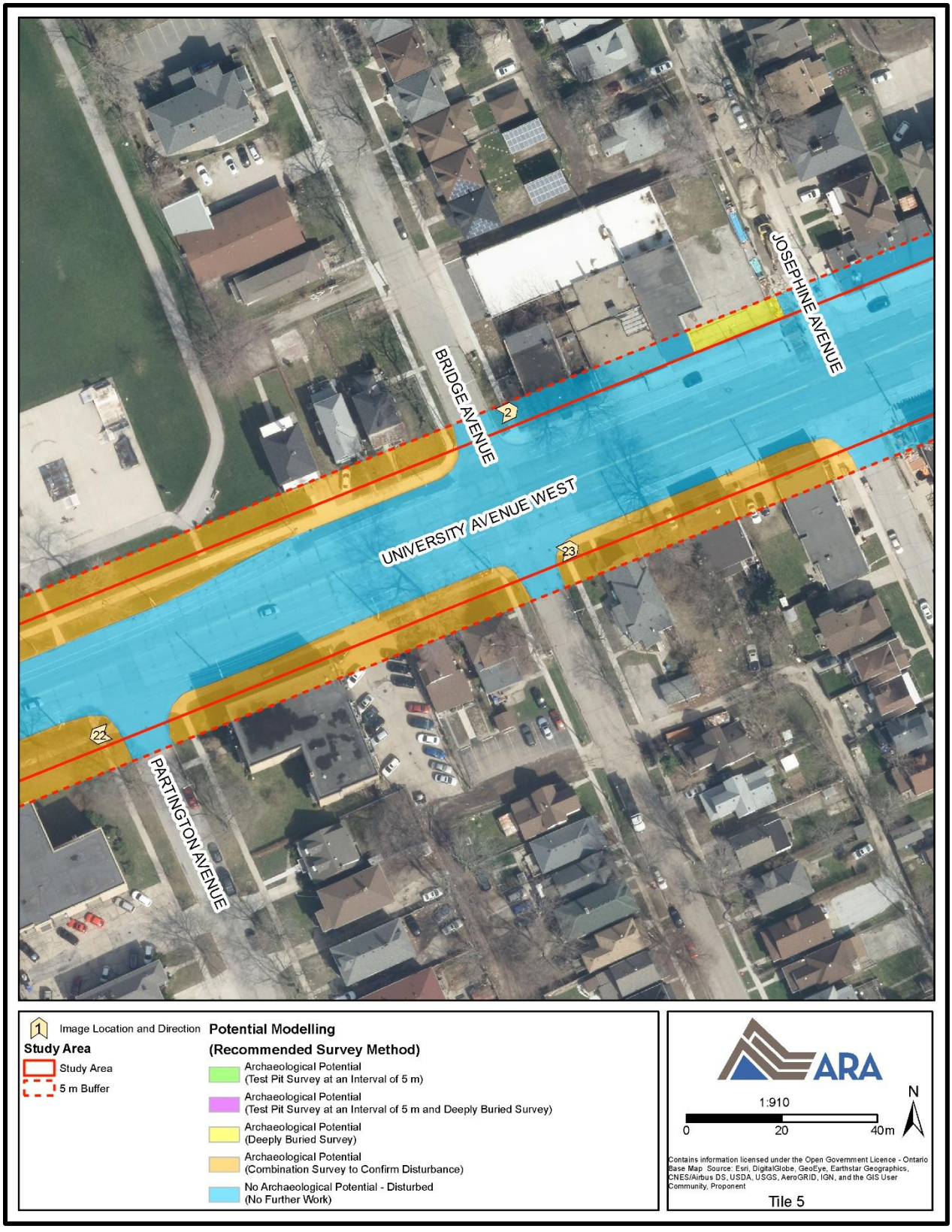

Map 33: Potential Modelling and Recommendations (Tile 5)
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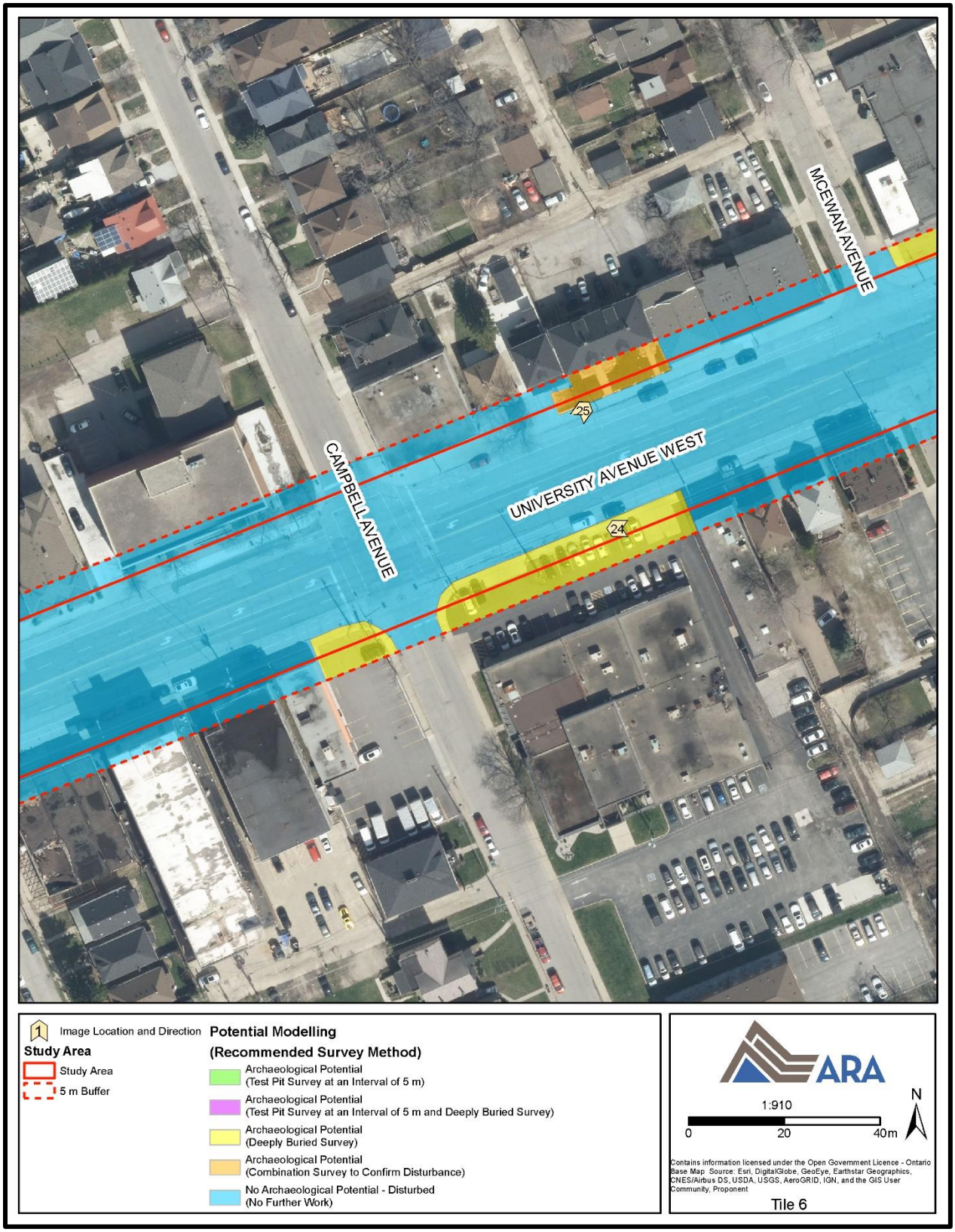

Map 34: Potential Modelling and Recommendations (Tile 6)
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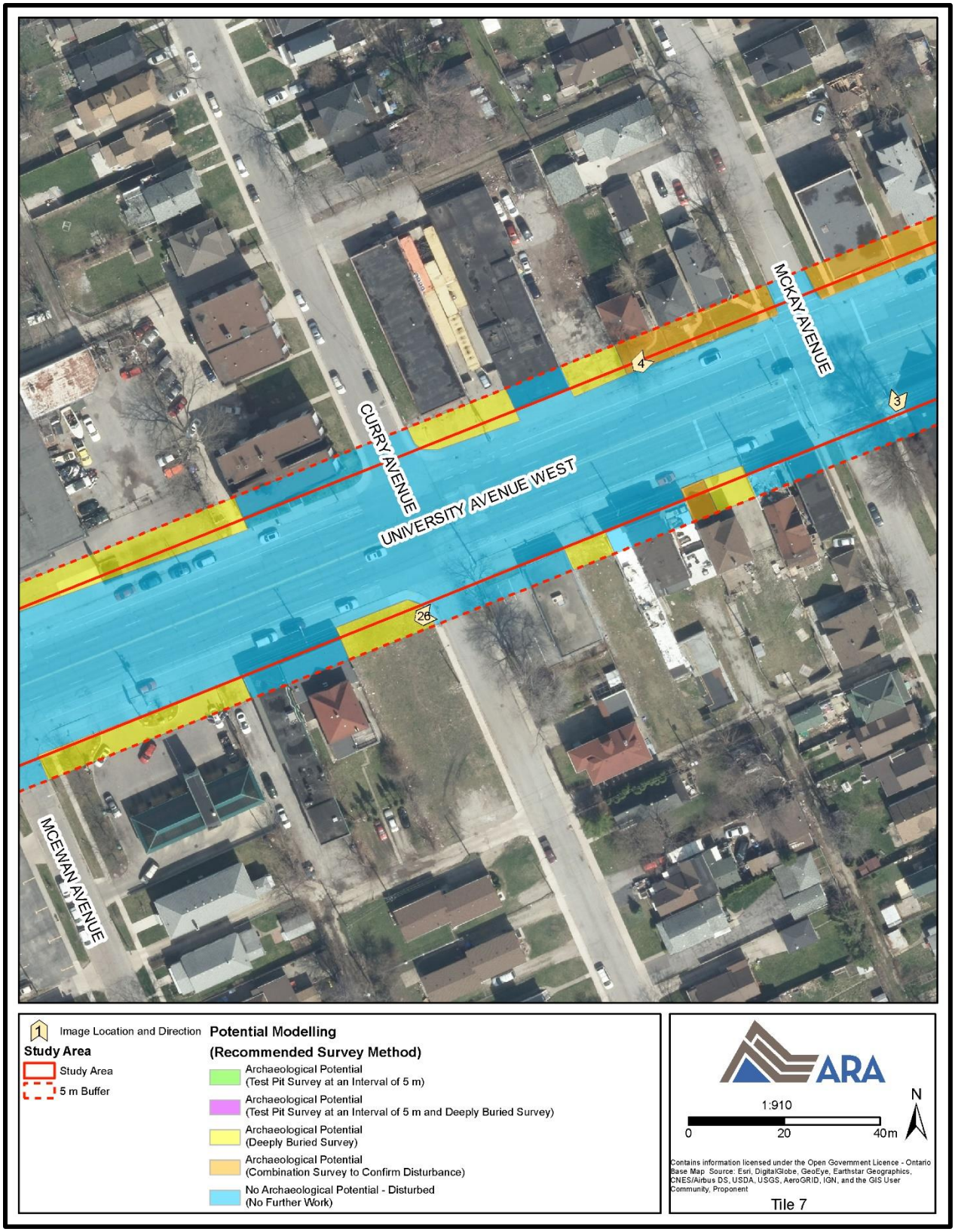

Map 35: Potential Modelling and Recommendations (Tile 7)
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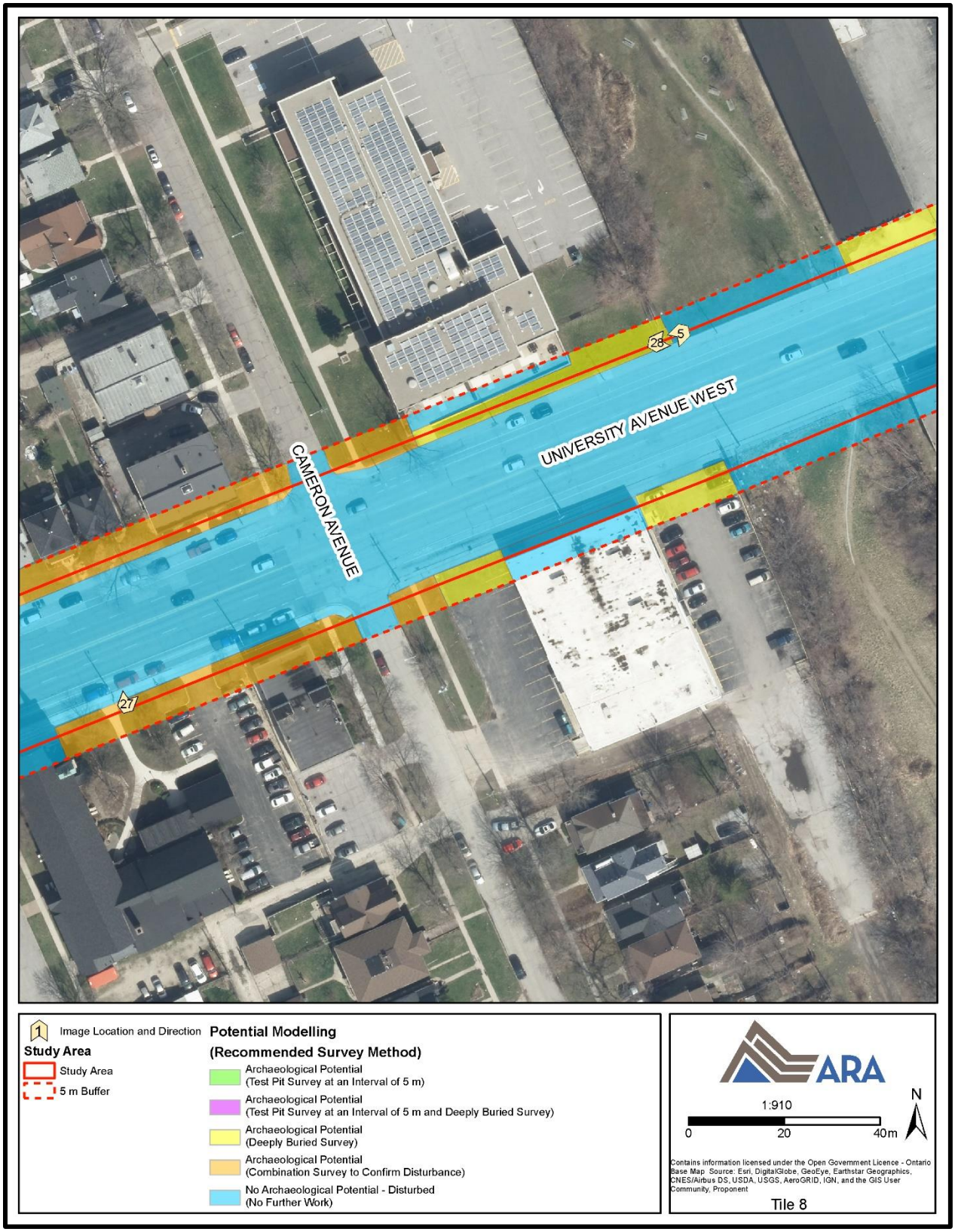

Map 36: Potential Modelling and Recommendations (Tile 8)
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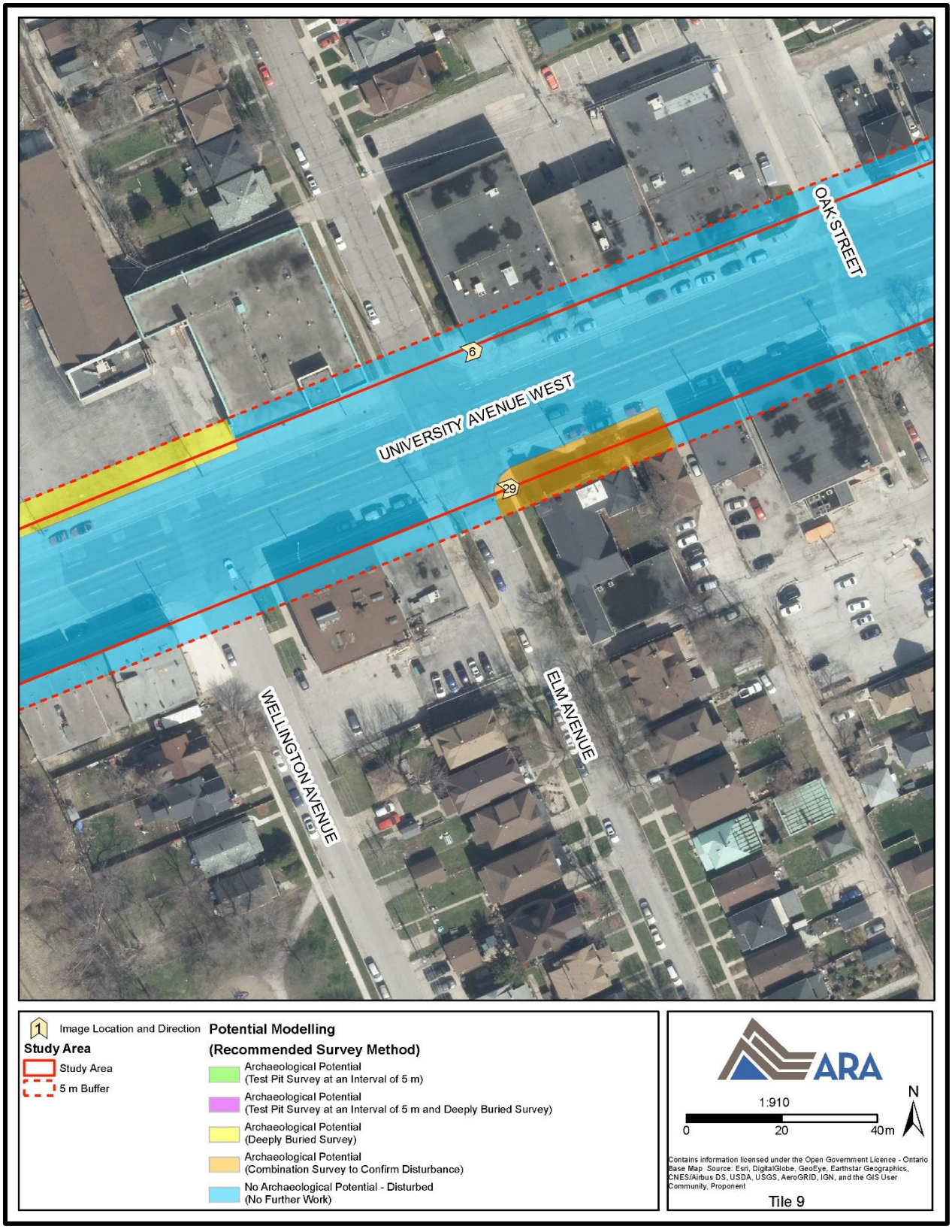

Map 37: Potential Modelling and Recommendations (Tile 9)
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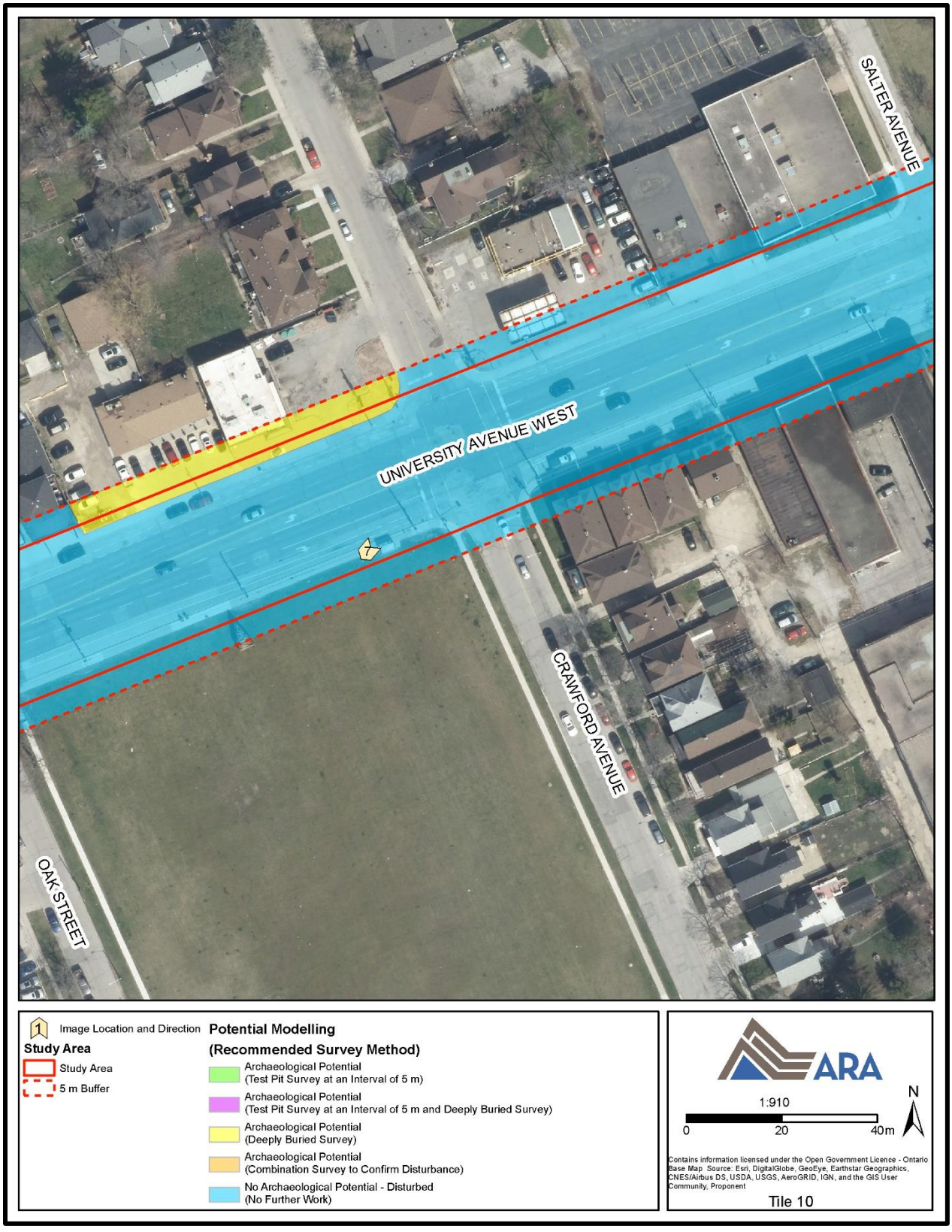

Map 38: Potential Modelling and Recommendations (Tile 10)
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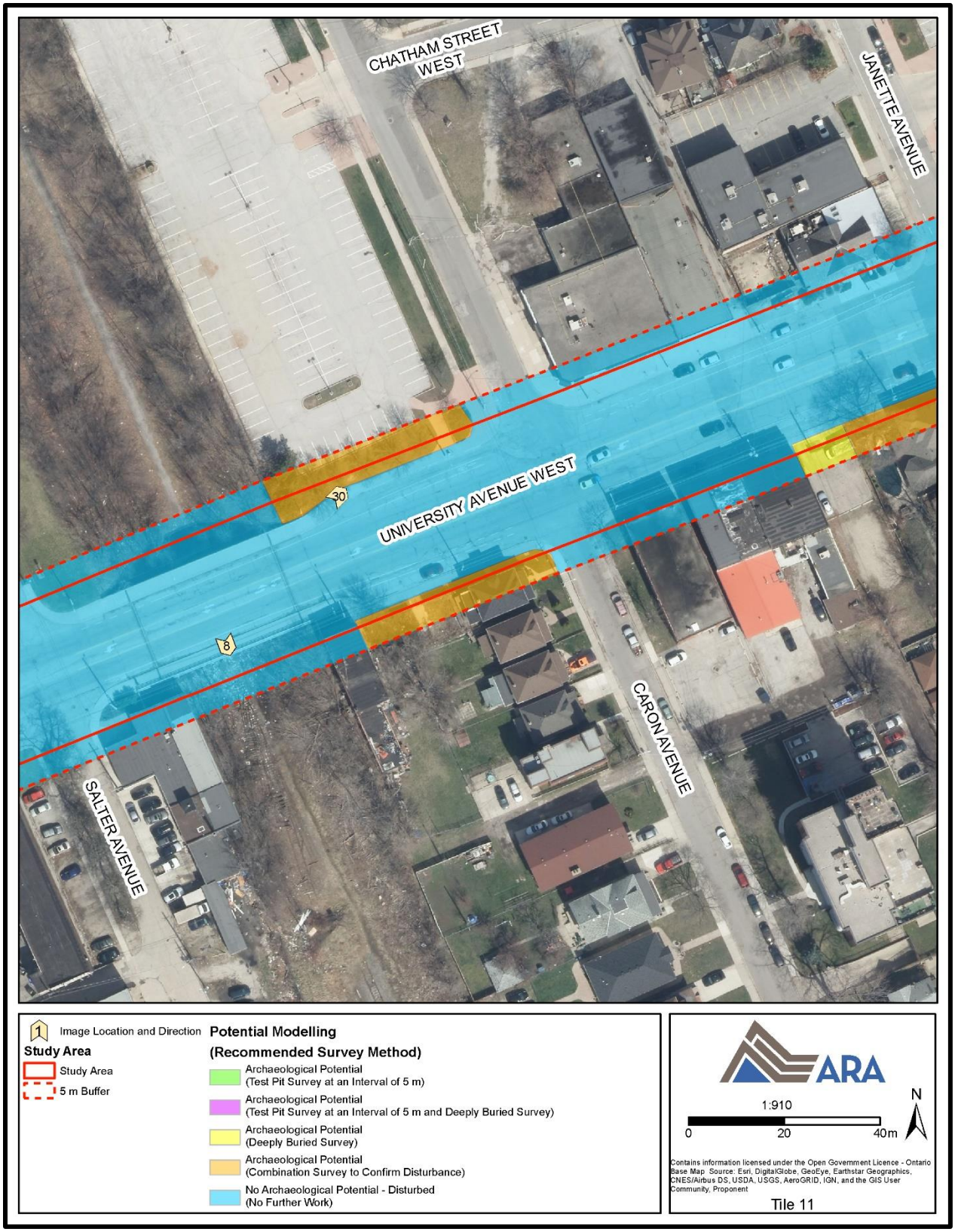

Map 39: Potential Modelling and Recommendations (Tile 11)
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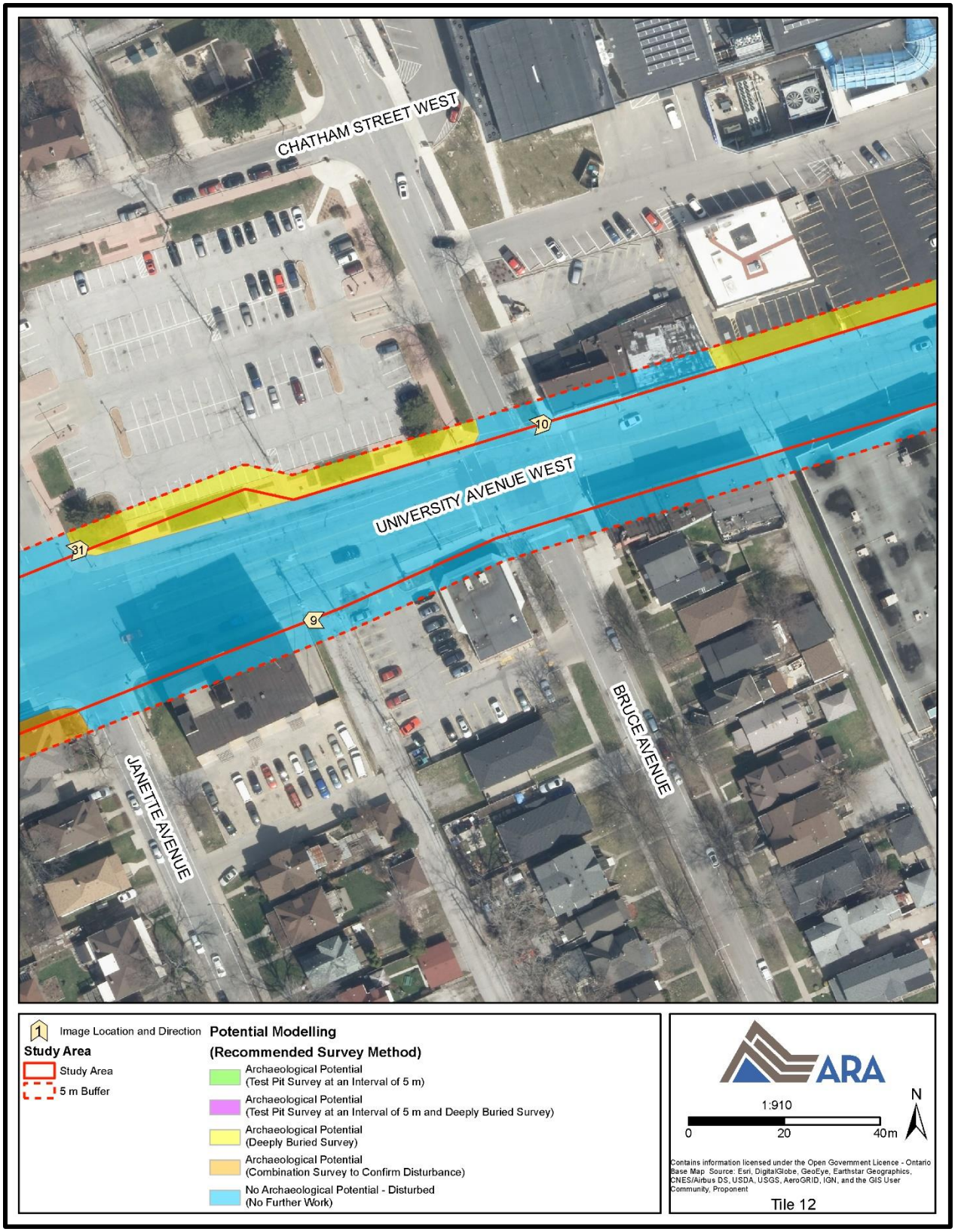

Map 40: Potential Modelling and Recommendations (Tile 12)
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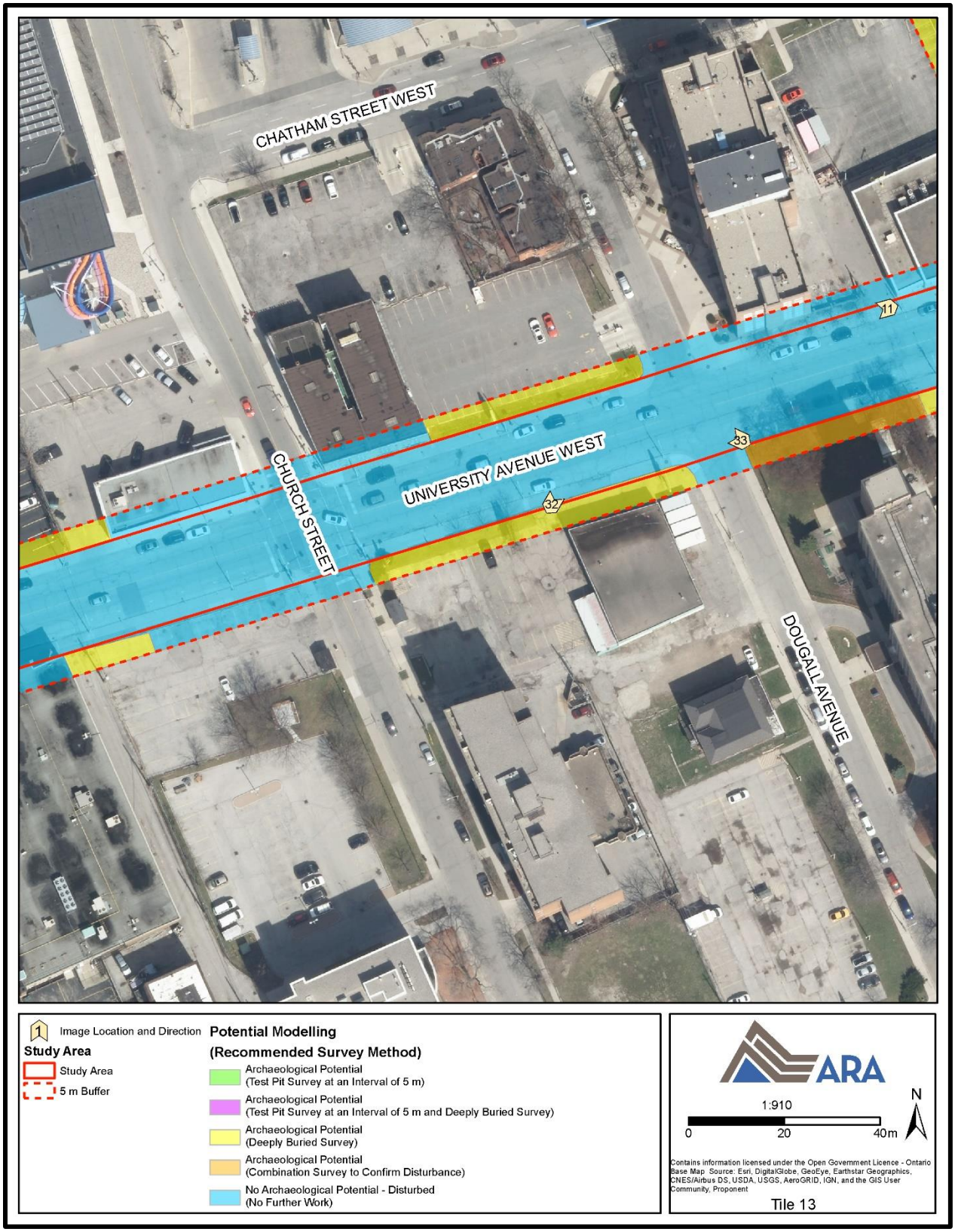

Map 41: Potential Modelling and Recommendations (Tile 13)
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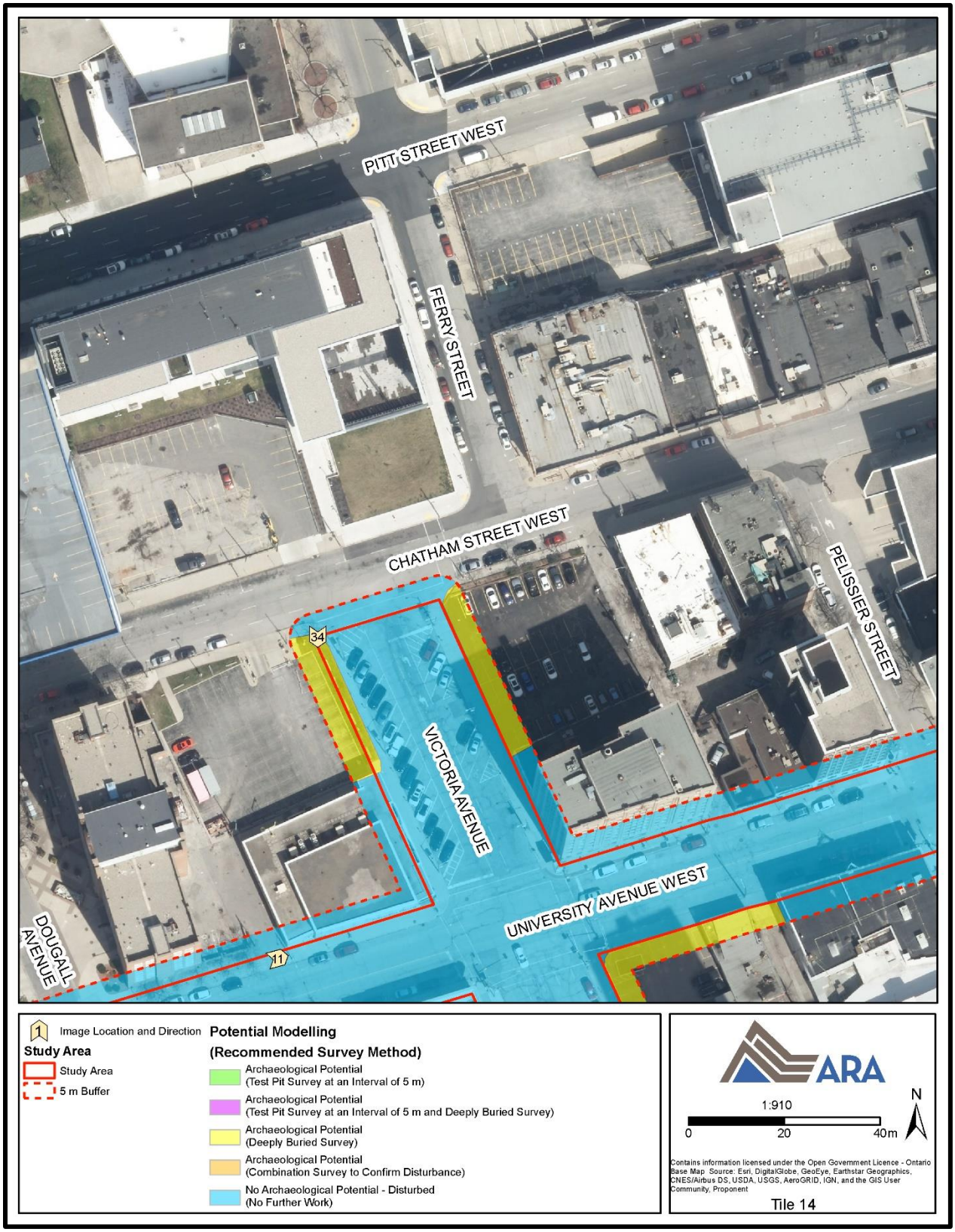

Map 42: Potential Modelling and Recommendations (Tile 14)
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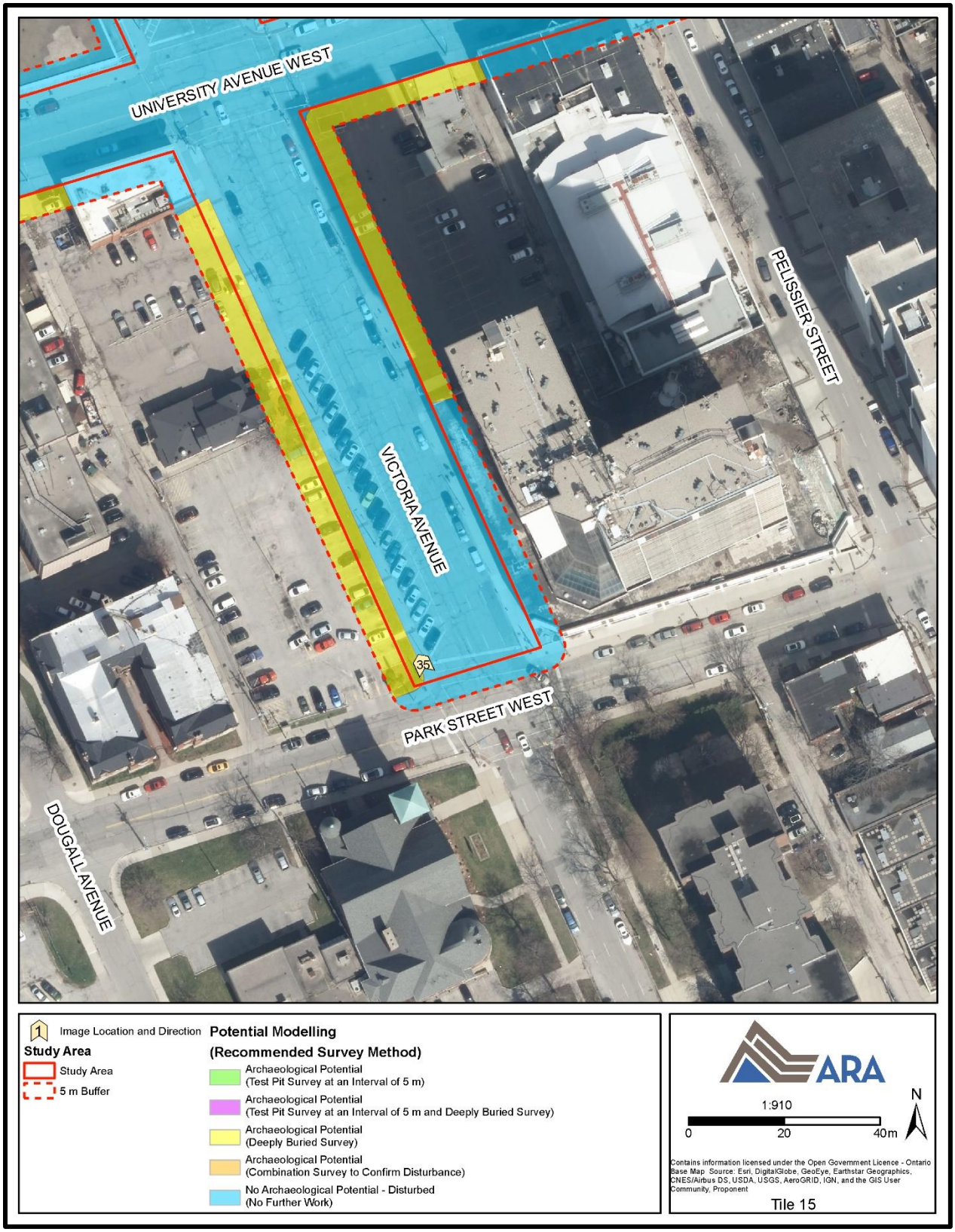

Map 43: Potential Modelling and Recommendations (Tile 15)
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Map 44: Potential Modelling and Recommendations (Tile 16)
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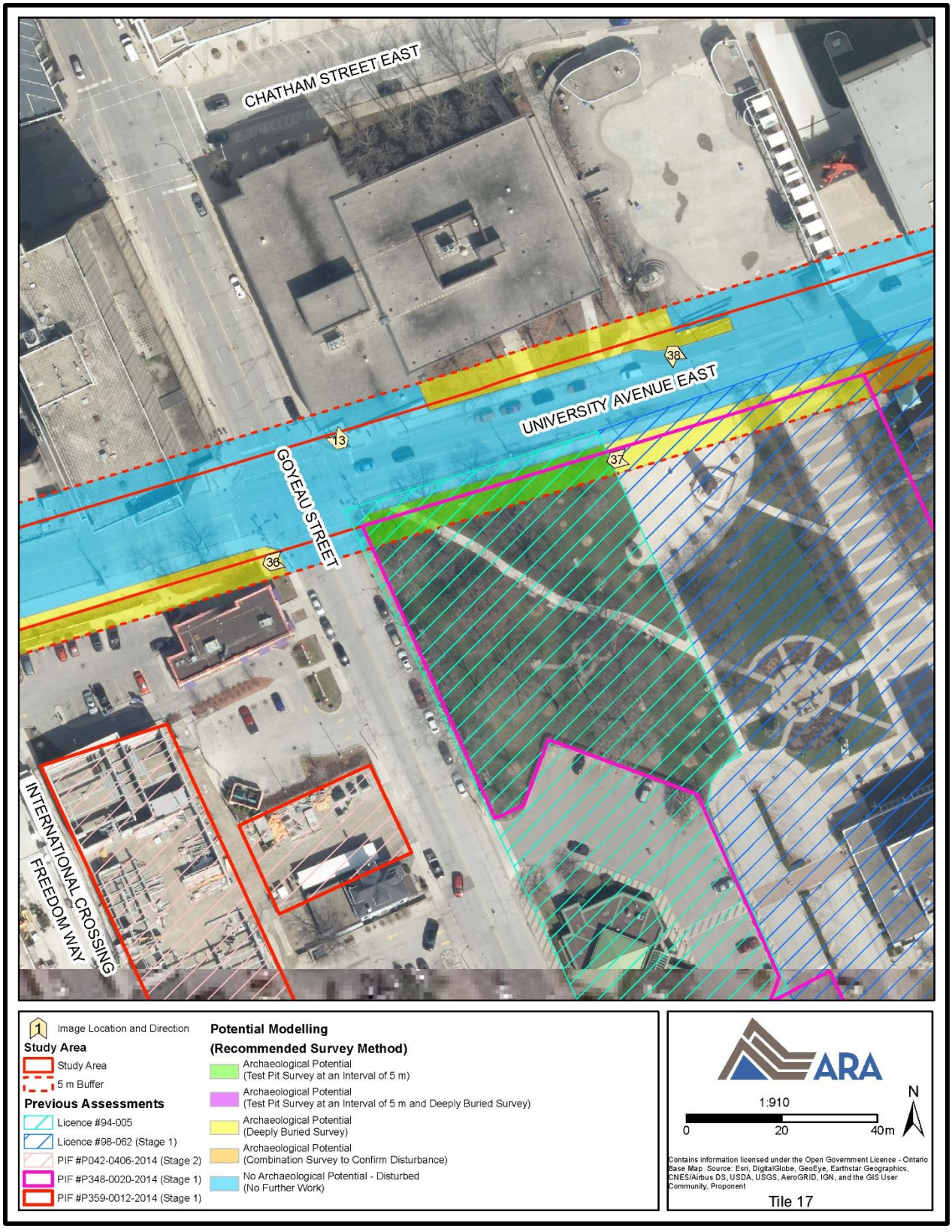

Map 45: Potential Modelling and Recommendations (Tile 17)
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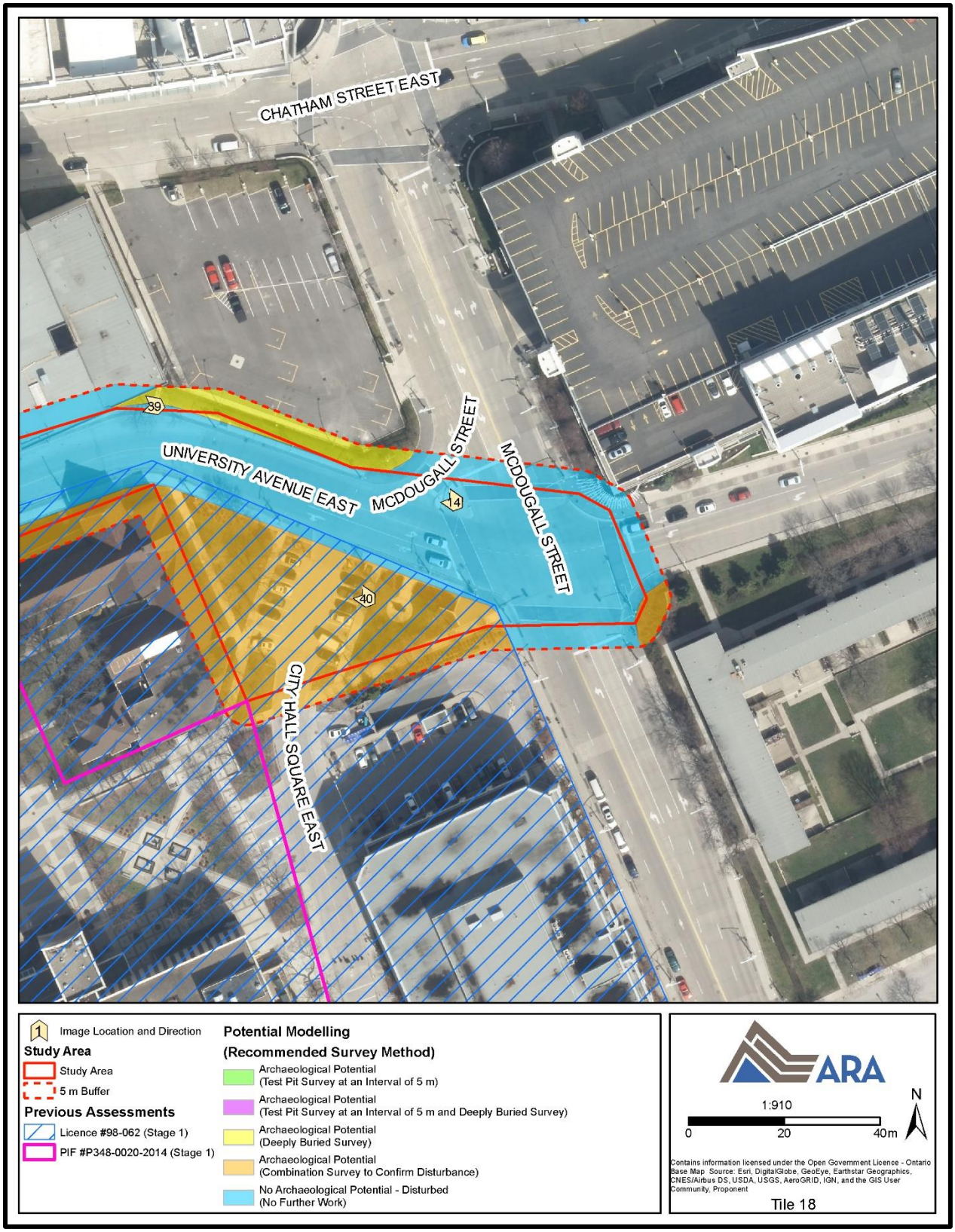

Map 46: Potential Modelling and Recommendations (Tile 18)
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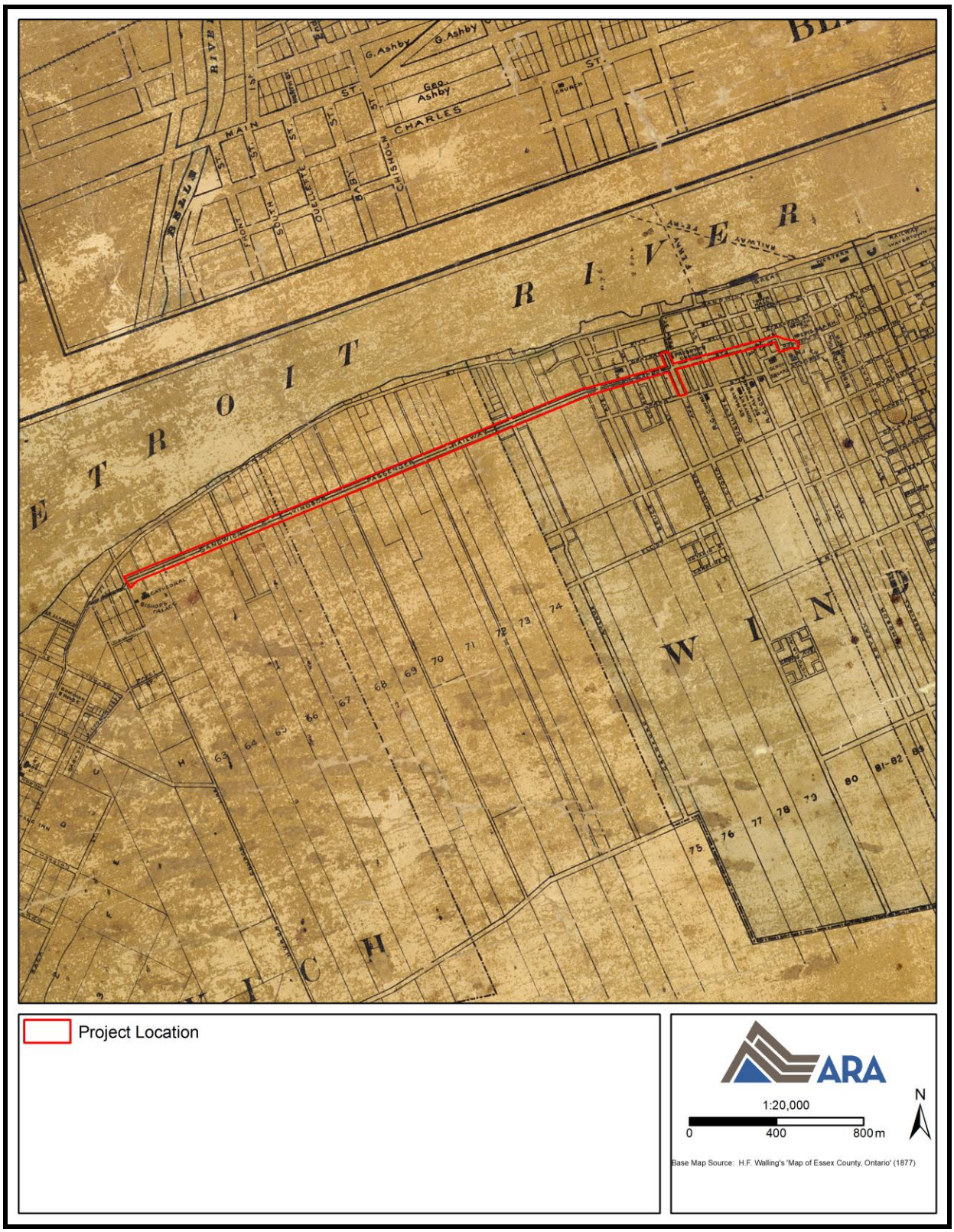
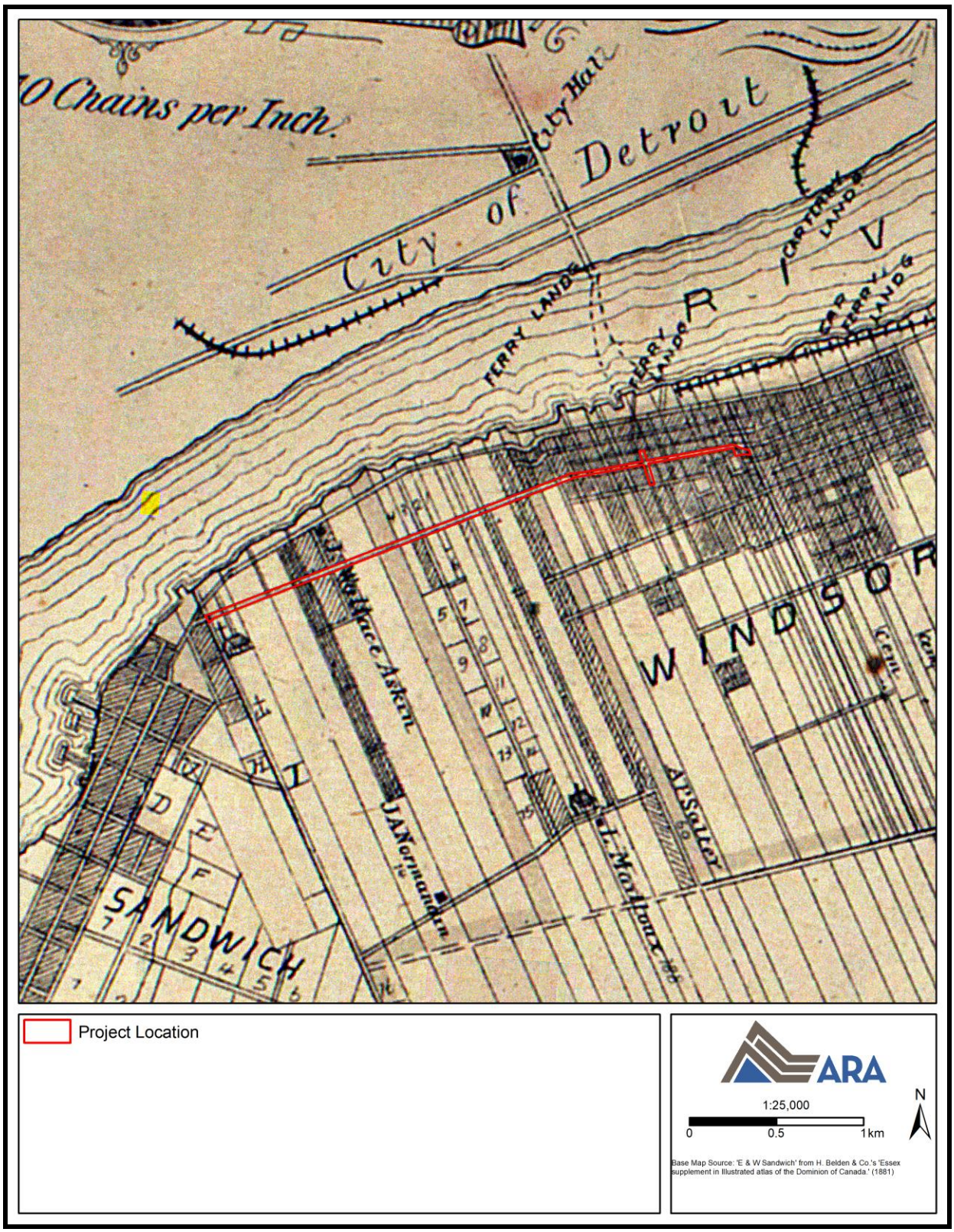
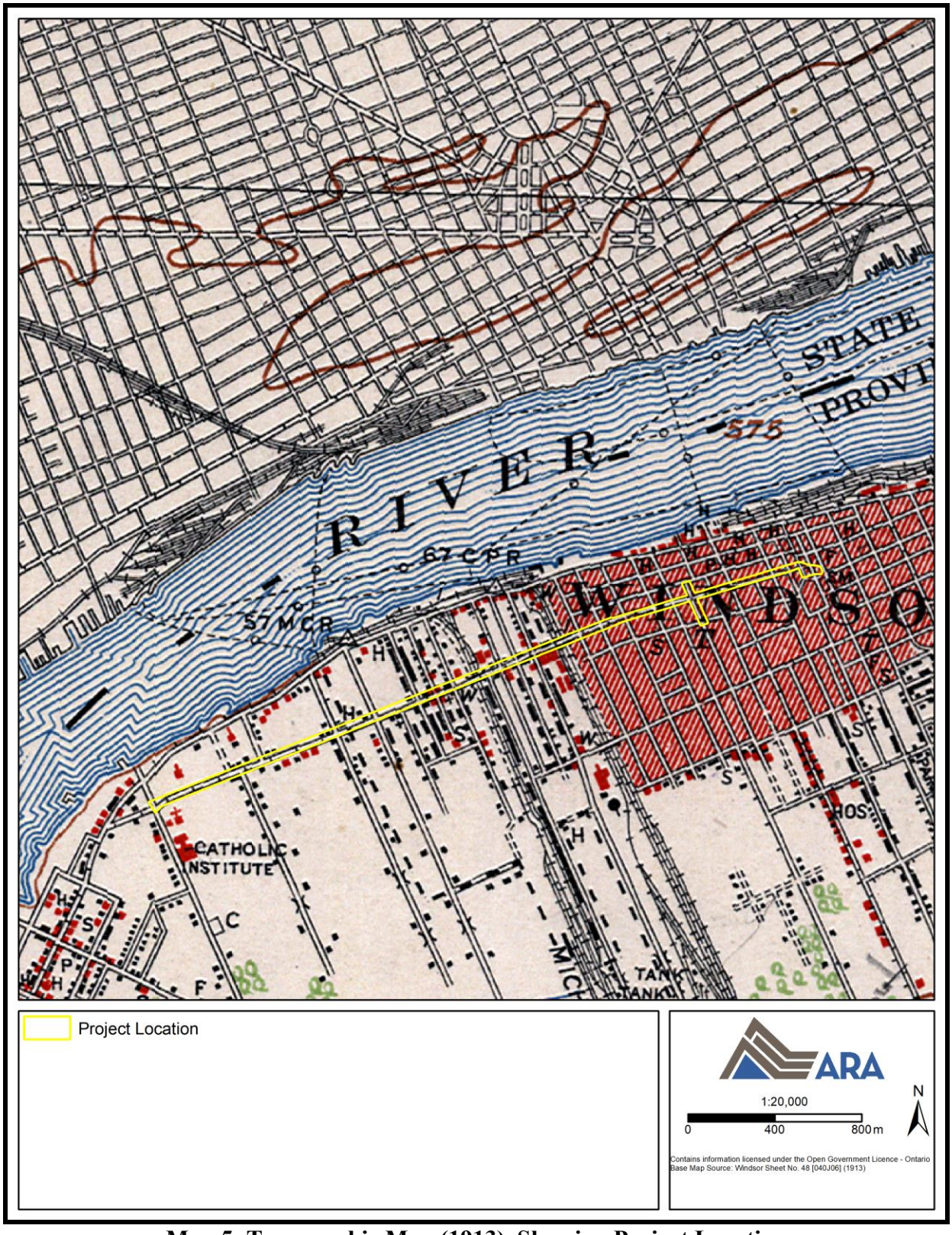


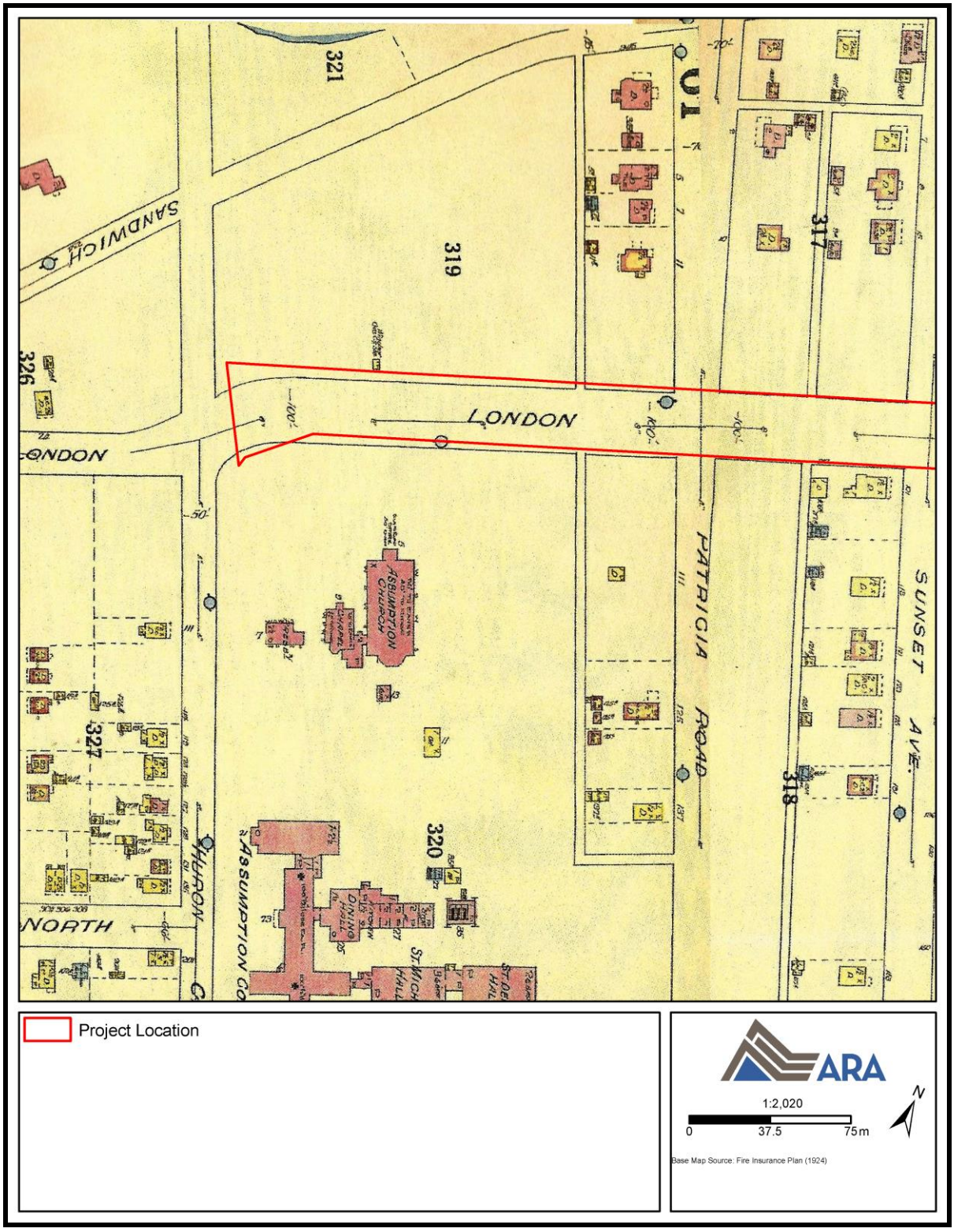
Map 3: Detail of Walling's Map of Sandwich Township (1877), Showing Project Location
(Produced under licence using ArcGIS® software by Esri, © Esri; Walling 1877)



Map 4: Detail of Belden & Co.'s 1881 Map of the Township of Sandwich, Showing Project Location
(Produced under licence using ArcGIS® software by Esri, © Esri; McGill 2001)



Map 5: Topographic Map (1913), Showing Project Location
(Produced under licence using ArcGIS® software by Esri, © Esri; OCUL 2018)



Map 6: Fire Insurance Plan (1924), Showing Project Location
(Produced under licence using ArcGIS® software by Esri, © Esri; USB 1924)