
APPENDIX 5

STAGE 1 AND 2 ARCHEALOGICAL ASSESSMENT

ORIGINAL REPORT

Stage 1 and 2 Archaeological Assessment

*Oxford Street West and Gideon Drive Intersection Improvements,
Part of Lots C and D, Broken Front Concession,
Former Geographic Township of Delaware,
Now City of London, Middlesex County, Ontario*

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PIF #: P1013-0008-2021

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Executive Summary

The Executive Summary summarizes only the key points of the report. For a complete account of the results and conclusions, as well as the limitations of this study, the reader should examine the report in full.

Golder Associates Ltd. (Golder) was retained by R.V. Anderson Associates Limited (the Client) to conduct a Stage 1 and 2 Archaeological Assessment (AA) for the Oxford Street West and Gideon Drive intersection improvements (the Project). The Study Area consists of approximately 4.2 hectares (ha) of the municipal rights-of-way (ROWs) of Oxford Street West, Gideon Drive, and Kains Road, legally described as part of Lots C and D, Broken Front Concession in the former geographic Township of Delaware, now City of London, Middlesex County, Ontario (Map 1). The Stage 1 and 2 AA was undertaken to meet the requirements of the *Environmental Assessment Act*, R.S.O 1990, c. E.18 (Government of Ontario 1990a).

Following criteria outlined in the Ministry of Heritage, Sport, Tourism and Culture Industries' (MHSTCI) 2011 *Standards and Guidelines for Consultant Archaeologists*, the Stage 1 AA background study determined that portions of the Study Area have archaeological potential for both pre-contact Indigenous and historical Euro-Canadian sites. This determination is based on the proximity of the Study Area to an unnamed tributary of the Thames River and known archaeological sites. Additionally, the Study Area is located in an area of Middlesex County with Euro-Canadian settlement history dating back to the early 19th centuries. This determination is consistent with the *London Archaeological Management Plan*, which identifies the Study Area to have archaeological potential (ASI 2017).

As part of a Stage 1 property inspection, all portions of the Study Area were systematically inspected to confirm if features of archaeological potential were present and if there were any areas of deep and extensive disturbance, which would have removed archaeological potential. As stated in Section 1.4.2 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011: 22), a property may only be exempt from Stage 2 assessment once deep and extensive ground disturbance has been confirmed through a property inspection.

The Stage 1 property inspection found that the majority of the Study Area has been subject to prior disturbance from the construction of Oxford Street West, Gideon Drive, and Kains Road, as well as drainage ditches, and buried utilities, while two small potentially undisturbed areas were identified to retain archaeological potential (Map 7). Given these findings, the two potentially undisturbed areas were subject to Stage 2 AA test pit survey. Test Pit Area 1 is a small, flat area at the bottom of the road embankment on the western side of Gideon Drive approximately 120 southwest of the intersection of Gideon Drive and Oxford Street West. Test Pit Area 2 is a flat area located between the drainage ditch and the edge of the Study Area on the northern side of Oxford Street West approximately 170 m west of the intersection of Oxford Street West and Gideon Drive. The Stage 2 survey of Test Pit Areas 1 and 2 did not result in the identification of archaeological resources (Map 8).

The results of the Stage 1 and 2 AA presented herein provide the basis for the following recommendations:

- 1) Areas of previous disturbance, as shown in brown on Maps 7 and 8, are previously disturbed and no further archaeological assessment is recommended.
- 2) Areas subject to Stage 2 test pit survey, as shown in yellow on Maps 7 and 8, did not result in the identification of archaeological sites and as such, no further archaeological assessments are recommended.

The Ontario Ministry of Heritage, Sport, Tourism and Culture Industries is asked to review the results and recommendations presented herein, accept this report into the Provincial Register of archaeological reports and issue a standard letter of compliance with the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licencing.

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1.0 PROJECT CONTEXT

1.1 Development Context

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The Stage 1 and 2 assessments were conducted under professional archaeological licence P1013, issued to Rebecca Parry of Golder by the MHSTCI (PIF# P1013-0008-2021). Permission to enter the Study Area to conduct all required archaeological fieldwork activities, including the recovery of artifacts, was not necessary as the Study Area is public property.

1.2 Historical Context

Table 1 provides a general outline of the pre- and post-contact culture history for Middlesex County, drawn from Ellis and Ferris (1990), while Map 2 displays the pre-contact Indigenous culture history of Middlesex County.

Table 1: Cultural Chronology for Middlesex County.

Period		Time Range (circa)	Characteristics
Paleo	Early	9000 - 8400 BC	Gainey, Barnes, and Crowfield traditions; small bands; mobile hunters and gatherers; utilization of seasonal resources and large territories; fluted projectiles
	Late	8400 - 8000 BC	Holcombe, Hi-Lo, and Lanceolate biface traditions; continuing mobility; campsite/way-station sites; smaller territories are utilized; non-fluted projectiles
Archaic	Early	8000 - 6000 BC	Side-notched, Corner-notched, and Bifurcate Base traditions; growing diversity of stone tool types; heavy woodworking tools appear (e.g., ground stone axes and chisels)
	Middle	6000 - 2500 BC	Stemmed (e.g., 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	2000 - 950 BC	Narrow Point, Broad Point, and Small Point traditions; less mobility; use of fish-weirs; more formal cemeteries appear; stone pipes emerge; long-distance trade (marine shells and galena)
Woodland	Early	950 - 400 BC	Meadowood tradition; cord-roughened ceramics emerge; Meadowood cache blades and side-notched points; bands of up to 35 people
	Middle	400 BC - AD 500	Saugeen tradition; stamped ceramics appear; Saugeen projectile points; cobble spall scrapers; seasonal

Period		Time Range (circa)	Characteristics
			settlements and resource utilization; post holes, hearths, middens, cemeteries, and rectangular structures identified
	Transitional	AD 550 - 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 (Early Iroquoian*)	AD 900 - 1300	Early - 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
	Late (Middle Iroquoian*)	AD 1300 - 1400	Middle - Uren and Middleport traditions; classic longhouses emerge; larger villages (1.2 ha) with up to 600 people; more permanent settlements (30 years)
	Late (Late Iroquoian*)	AD 1400 - 1600	Late - 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
	Late (Western Basin Tradition)	AD 500 - 900	Riviere au Vase - introduction of corn
		AD 900 - 1200	Young Phase - dense storage pits, proto-settlements
		AD 1200 - 1400	Springwell Phase - emergence of agricultural villages
		AD 1400 - 1550	Wolf Phase - palisaded villages, warfare and displacement

*Ontario Iroquoian was historically used as a temporal period marker and is not meant to imply assumptions regarding ethnicity.

1.2.1 Paleo Period

The first human occupation of southwestern Ontario, known as the Paleo Period, begins just after the end of the Wisconsin Glacial Period. During this time there was a complex series of ice retreats and advances that played a large role in shaping the local topography. Southwestern Ontario was finally ice free by about 12,500 years ago, but the first evidence of human settlement dates to about 11,000 years ago when this area was inhabited by Indigenous groups that had been living south of the Great Lakes.

Our current understanding of Early Paleo settlement patterns suggests that small bands consisting of up to 25 to 35 individuals followed a pattern of seasonal mobility extending over large territories (Ellis and Deller 1990:54). Sites from this time are exceedingly rare, in part because population densities are thought to have been very low, with all southwestern Ontario being occupied by perhaps only 100 to 200 people (Ellis and Deller 1990:54).

Many Early Paleo sites are located in elevated locations on well-drained loamy soils, and many have been found on former beach ridges associated with post-glacial Lake Algonquin that had previously occupied the Lake Huron/Georgian Bay basin. Given their placement in elevated locations, which were likely conducive to the interception of migratory mammals such as caribou, it has been suggested that these sites may represent communal hunting camps. Although most Early Paleo sites are relatively small, there are a few large sites, such as one located close to Parkhill, Ontario, which covered as much as 6 ha (Ellis and Deller 1990:51). However, it appears that these larger sites were formed when the same general locations were occupied for short periods of time over the course of many years.

There are also smaller Early Paleo camps scattered throughout the interior of southwestern Ontario, usually situated adjacent to wetlands.

The Late Paleo Period (8400 - 8000 BC) has been less well researched than the Early Paleo, and as a result it is poorly understood. By this time, the environment of southwestern Ontario was coming to be dominated by closed coniferous forests with some minor deciduous elements. It seems that many of the large game species that had been hunted in the early part of the Paleo Period had either moved further north or became extinct.

During the Late Paleo Period people continued to cover large territories as they moved about in response to seasonal resource fluctuations. On a province-wide basis Late Paleo projectile points are far more common than Early Paleo materials, suggesting a relative increase in population.

The end of the Paleo Period was heralded by numerous technological and cultural innovations that appeared throughout the Archaic Period. These innovations may be best explained in relation to the dynamic nature of the post-glacial environment and region-wide population increases.

1.2.2 Archaic Period

During the Early Archaic Period (8000 - 6000 BC), the jack and red pine forests that characterized the Late Paleo environment were replaced by forests dominated by white pine with some associated deciduous trees (Ellis, Kenyon and Spence 1990:68-69). Notable technological changes during this period include the appearance of side- and corner-notched projectile points not found during the previous Paleo times, and the introduction of ground stone tools such as celts and axes, which suggest woodworking was increasing in importance. In addition to the introduction of new tools, there may have been some reduction in the degree of seasonal movement of groups, although it is still suspected that population densities were quite low, and band territories large.

During the Middle Archaic Period (6000 - 2500 BC) the trend towards more diverse toolkits continued, as the presence of net-sinkers and fish weirs suggest that fishing was becoming an important aspect of the subsistence economy. It was also at this time that "bannerstones" were first manufactured. Bannerstones are carefully crafted ground stone devices that may have served as a counterbalance for "atlatls" or spear-throwers.

Another characteristic of the Middle Archaic is an increased reliance on local, often poor-quality chert resources for the manufacturing of projectile points. It seems that during earlier periods, when groups occupied large territories, it was possible for them to visit a primary outcrop of high-quality chert at least once during their seasonal round. However, during the Middle Archaic, groups inhabited smaller territories that often did not encompass a source of high-quality raw material. In these instances, it appears that lower quality materials which had been deposited by the glaciers in the local till and river gravels were utilized more regularly.

The apparent reduction in territory size may be linked to gradual region-wide population growth which led to the infilling of the landscape and a reorganization of subsistence practices as more people became more reliant on resources from smaller areas. It may also have been the impetus for the development of long-distance trading as shown by the increased presence of exotic materials and items during the later part of the Middle Archaic Period. For example, tools manufactured from natural sources of copper found in areas northwest of Lake Superior were being widely traded across the northeast (Ellis, Kenyon and Spence 1990:66).

During the Late Archaic (2500 - 950 BC) the trend towards decreased territory size and a broadening subsistence base continued. Late Archaic sites are far more numerous than either Early or Middle Archaic sites, and it seems that the local population had expanded. It is during the Late Archaic that the more formal cemeteries appear. The appearance of cemeteries during the Late Archaic has been interpreted as a response to increased population densities and competition between local groups for access to resources. It is argued that cemeteries would have provided strong symbolic claims over a local territory and its resources. These cemeteries are often located on heights of well-drained sandy/gravel soils adjacent to major watercourses such as the Thames River.

This suggestion of increased territoriality is also consistent with the regionalized variation present in Late Archaic projectile point styles. It was during the Late Archaic that distinct local styles of projectile points appear. Also, during the Late Archaic the trade networks which had been established during the Middle Archaic continued to flourish. Native copper from northern Ontario and marine shell artifacts from as far away as the Mid-Atlantic coast are frequently encountered as grave goods. Other artifacts such as polished stone pipes and banded slate gorgets also appear on Late Archaic sites. One of the more unusual and interesting of the Late Archaic artifacts is the "birdstone". Birdstones are small, bird-like effigies usually manufactured from green banded slate. While the function of these artifacts is presently poorly understood, they are especially common in the London area.

1.2.3 Woodland Period

The Early Woodland Period (950 - 400 BC) is distinguished from the Late Archaic Period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples.

The first pots were thick walled and friable. It has been suggested that they were used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil (Spence, Pihl and Murphy 1990:137). These vessels were not easily portable, and individual pots must not have sustained a long use life.

There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that these early vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples.

Other than the introduction of ceramic technology, the life ways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic Period. For instance, birdstones continue to be manufactured, although the Early Woodland varieties have "pop-eyes" which protrude from the sides of their heads. Likewise, the thin, well-made projectile points which were produced during the terminal part of the Archaic Period continue in use. However, the Early Woodland variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance.

The trade networks which were established in the Middle and Late Archaic also continued to function, although there does not appear to have been as much traffic in marine shell during the Early Woodland Period. During the last 200 years of the Early Woodland Period, projectile points manufactured from high quality raw materials from the American Midwest begin to appear on sites west of the London area.

In terms of settlement and subsistence patterns, the Middle Woodland (400 BC - AD 900) provides a major point of departure from the Archaic and Early Woodland Periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish became an even more important part of their diet. This is especially true in the nearby London area, where some Middle Woodland sites have produced literally thousands of bones from spring spawning species such as walleye and sucker. In addition, Middle Woodland peoples relied much more extensively on ceramic technology. Middle Woodland vessels are often garishly decorated with hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. Consequently, even very small fragments of Middle Woodland vessels are easily identifiable.

It is also at the beginning of the Middle Woodland Period that rich, densely occupied sites appear on the valley floor of major rivers. While the valley floors of floodplains had been utilized by earlier peoples, Middle Woodland sites are significantly different in that the same location was repeatedly occupied over several hundred years. Because this is the case, rich deposits of artifacts often accumulated.

Unlike earlier seasonally utilized locations, these Middle Woodland sites appear to have functioned as base camps, occupied off and on over the course of the year. There are also numerous small upland Middle Woodland sites, many of which can be interpreted as special purpose camps from which localized resource patches were exploited. This shift towards a greater degree of sedentism continues the trend witnessed from at least Middle Archaic times and provides a prelude to the developments that follow during the Late Woodland Period.

The Ontario Iroquoian and Western Basin are two archaeological traditions that characterize pre-contact Indigenous communities living in the Middlesex County area of southwestern Ontario during the Late Woodland Period (AD 500 – 1650). Peoples of the Western Basin Tradition lived throughout the southwestern-most portion of the province, from the present-day Sarnia/Windsor area to about London. Iroquoian peoples, on the other hand, appear to have lived from the present-day Chatham area east to Toronto. Each of these traditions are divided into distinct temporal phases (see Table 1) defined by material cultural attributes, and settlement and subsistence patterns that exhibit a shift towards larger and more permanent villages due to an increasing reliance on cultivated plants such as corn, beans, squash, sunflower, and tobacco (Dodd et al. 1990; Foreman 2011; Fox 1990; Lennox and Fitzgerald 1990; Murphy and Ferris 1990). Corn may have been introduced into southwestern Ontario from the American Midwest as early as AD 600, however, it did not become a dietary staple until at least three to four hundred years later (Fox 1990:185; Smith 1990; Williamson 1990:312).

1.2.3.1 *Ontario Iroquois Tradition*

The first agricultural villages in southwestern Ontario date to the 10th century AD. Unlike the riverine base camps of the Middle Woodland Period, these sites are located in the uplands, on well-drained sandy soils. Categorized as "Early Ontario Iroquoian" (AD 900 - 1300), many archaeologists believe that it is possible to trace a direct line from the Iroquoian groups which inhabited southwestern Ontario at the time of first European contact, to these early villagers.

Village sites dating between AD 900 and 1300, share many attributes with the historically reported Iroquoian sites, including the presence of longhouses and sometimes palisades. However, these early longhouses were actually not all that large, averaging only 12.4 m in length (Dodd et al 1990:349; Williamson 1990:304-305). It is also quite common to find the outlines of overlapping house structures, suggesting that these villages were occupied long enough to necessitate re-building. The Jesuits reported that the Huron moved their villages once every 10 - 15 years, when the nearby soils had been depleted by farming and conveniently collected firewood grew scarce (Pearce 2010). It seems likely that Early Ontario Iroquoians occupied their villages for considerably longer, as they relied less heavily on corn than did later groups, and their villages were much smaller, placing less demand on nearby resources.

Judging by the presence of carbonized corn kernels and cob fragments recovered from sub-floor storage pits, agriculture was becoming a vital part of the Early Ontario Iroquoian economy. However, it had not reached the level of importance it would in the Middle and Late Ontario Iroquoian Periods. There is ample evidence to suggest that more traditional resources continued to be exploited and comprised a large part of the subsistence economy. Seasonally occupied special purpose sites relating to deer procurement, nut collection, and fishing activities, have all been identified. While beans are known to have been cultivated later in the Late Woodland Period, they have yet to be identified on Early Ontario Iroquoian sites.

The Middle Ontario Iroquoian Period (AD 1300 - 1400) witnessed several interesting developments in terms of settlement patterns and artifact assemblages. Changes in ceramic styles have been carefully documented, allowing the placement of sites in the first or second half of this 100-year period. Moreover, villages, which averaged approximately 0.6 ha in extent during the Early Ontario Iroquoian Period, now consistently range between one and two hectares.

House lengths also change dramatically, more than doubling to an average of 30 m, while houses of up to 45 m have been documented. This radical increase in longhouse length has been variously interpreted. The simplest possibility is that increased house length is the result of a gradual, natural increase in population (Dodd et al 1990:323, 350, 357; Smith 1990). However, this does not account for the sudden shift in longhouse lengths around AD 1300. Other possible explanations involve changes in economic and socio-political organization (Dodd et al 1990:357). One suggestion is that during the Middle Ontario Iroquoian Period small villages were amalgamating to form larger communities for mutual defense (Dodd et al 1990:357). If this was the case, the more successful military leaders may have been able to absorb some of the smaller family groups into their households, thereby requiring longer structures.

This hypothesis draws support from the fact that some sites had up to seven rows of palisades, indicating at least an occasional need for strong defensive measures. There are, however, other Middle Ontario Iroquoian villages which had no palisades present (Dodd et al 1990). More research is required to evaluate these competing interpretations.

The lay-out of houses within villages also changes dramatically by AD 1300. During the Early Ontario Iroquoian Period, villages were haphazardly planned at best, with houses oriented in various directions. During the Middle Ontario Iroquoian Period villages are organized into two or more discrete groups of tightly spaced, parallel aligned, longhouses.

It has been suggested that this change in village organization may indicate the initial development of the clans which were a characteristic of the historically known Iroquoian peoples (Dodd et al 1990:358).

Initially at least, the Late Ontario Iroquoian Period (AD 1400-1650) continues many of the trends which have been documented for the preceding century. For instance, between AD 1400 and 1450, house lengths continued to grow, reaching an average length of 62 m. One longhouse excavated on a site southwest of Kitchener stretched an incredible 123 m (Lennox and Fitzgerald 1990:444-445). After AD 1450, house lengths begin to decrease, with houses dating between AD 1500-1580 averaging only 30 m in length.

Why house lengths decrease after AD 1450 is poorly understood, although it is believed that the even shorter houses witnessed on historical period sites can be at least partially attributed to the population reductions associated with the introduction of European diseases such as smallpox (Lennox and Fitzgerald 1990:405, 410).

Village size also continued to expand throughout the Late Ontario Iroquoian Period, with many of the larger villages showing signs of periodic expansions. The Late Middle Ontario Iroquoian Period and the first century of the Late Ontario Iroquoian Period was a time of village amalgamation. One large village situated just north of Toronto has been shown to have expanded on no fewer than five occasions. These large villages were often heavily defended with numerous rows of wooden palisades, suggesting that defence may have been one of the rationales for smaller groups banding together.

Late Ontario Iroquoian village expansion has been clearly documented in the London area. The ongoing excavations at the Lawson site, a large Late Iroquoian village located on the grounds of the Museum of Ontario Archaeology, has shown that the original village had expanded by at least twenty percent to accommodate the construction of nine additional longhouses (Anderson 2009).

After AD 1525, communities of pre-contact Indigenous peoples of the Late Ontario Iroquoian Period who had formerly lived throughout southwestern Ontario as far west as the Chatham area moved further east to the Hamilton area. During the late 1600s and early 1700s, the French explorers and missionaries reported a large population of Iroquoian peoples clustered around the western end of Lake Ontario. They called these people the "Neutral", because they were not involved in the ongoing wars between the Huron and the League Iroquois located in upper New York State.

It has been satisfactorily demonstrated that the Late Ontario Iroquoian communities which were located in southwestern Ontario as far west as the Chatham area were ancestral to at least some of the Neutral Nation groups (Lennox and Fitzgerald 1990; Smith 1990:283). For this reason, the Late Ontario Iroquoian groups which occupied southwestern Ontario prior to the arrival of the French are often identified as "Prehistorical Neutral". They occupied a large area extending along the Grand River and throughout the Niagara Peninsula as far east as Fort Erie and Niagara Falls (Lennox and Fitzgerald 1990:448).

1.2.3.2 Western Basin Tradition

The first phase of the Western Basin Tradition is known as the Riviere au Vase Phase (AD 500 - 900). Many archaeologists believe that it is possible to trace a direct line from these peoples to the later Algonkian speaking groups that inhabited extreme Southwestern Ontario at the time of first European contact. While settlement and subsistence patterns during the Riviere au Vase Phase continue to follow patterns established during earlier periods, there were significant changes in some aspects of material culture that make sites from this time period easy to distinguish. Across the region, this period witnessed the emergence of paddled vessel construction techniques and cord wrapped stick decorations. There was also a change in projectile point styles from larger Middle Woodland types to much smaller forms such as Raccoon, Jack's Reef, Port Maitland and Levanna, that clearly functioned as arrowheads rather than spear points (Murphy and Ferris 1990).

In addition to these changes in ceramics and lithics, there was also a major discontinuity in exchange networks and in the complexity of mortuary ceremonialism. While it is likely that Riviere au Vase peoples were aware of and even made limited use of corn horticulture, the evidence for this is limited, and it is clear that corn horticulture never achieved as prominent a role as it did with the groups living in the Grand River Drainage to the east. Riviere au Vase ceramics have been recovered from sites in southern Michigan and northern Ohio and extreme southwestern Ontario, including the Sarnia area (Murphy and Ferris 1990).

The transition to the subsequent Younger Phase of the Western Basin Tradition occurs around AD 900, although it is not well defined. There is a clear continuation in ceramic styles between these two phases, without any clear markers to easily separate the materials. Younger ceramics tend to be more complexly decorated, often with elaborate neck decorations consisting of filled triangles or plaits. In terms of settlement and subsistence, hunting

and gathering patterns continue from earlier periods, although corn is more regularly encountered on Younger Phase sites. In fact, recent dietary reconstructions from the Krieger site in Chatham-Kent indicate an increasing reliance on maize horticulture at this time, perhaps to a similar extent as the contemporary and more sedentary Iroquoian groups to the east (Watts et al. 2011).

Additionally, there appears to be a trend toward larger, more substantial occupations in the Younger Phase, which suggests both an increase in population, as well as a trend towards reduced mobility. A reduction in mobility is supported by recent discoveries in the Arkona area, which identified the presence of palisaded villages with multiple house structures dating to the Younger Phase (Golder 2012a, 2012b), a settlement pattern previously believed to have begun during the subsequent Springwells Phase.

By approximately AD 1200, the Younger Phase transitioned into the subsequent Springwells Phase with the appearance of collared castellated vessels decorated with horizontal motifs and a more frequent occurrence of larger Western Basin sites with multiple house structures and palisades (Murphy and Ferris 1990).

True longhouses have been identified on sites near Windsor, and it appears that during the summer months, corn horticulture was becoming a growing component of the subsistence economy. Major Springwells Phase communities have been documented in the Windsor area, along the southern and eastern margins of Lake St. Clair, as well as in the Sydenham River drainage (Murphy and Ferris 1990).

The Wolf Phase (AD 1400 - 1550) is the final and most poorly understood phase of the Western Basin Tradition in southwestern Ontario. Wolf Phase ceramics emerge out of the highly decorated late Springwells Phase styles such as Mixer Dentate. At present, Wolf Phase sites are only known from the extreme western ends of Essex, Kent and Lambton counties. It appears that the Wolf Phase witnesses a continuation of the trend towards reduced residential mobility and the emergence of true villages that had begun during the Springwells Phase (Murphy and Ferris 1990).

1.2.4 Post-Contact Indigenous Period

The post-contact Indigenous occupation of southern Ontario was heavily influenced by the dispersal of various Iroquoian-speaking peoples, such as the Huron and closely related Petun, by the New York State Iroquois and the subsequent return of Algonkian-speaking groups from northern Ontario at the end of the 17th century and beginning of the 18th century (Schmalz 1991).

The nature of Indigenous settlement size, population distribution, and material culture shifted as settlers began to colonize the land. Despite this shift, "written accounts of material life and livelihood, the correlation of historically recovered villages to their archaeological manifestations, and the similarities of those sites to more ancient sites have revealed an antiquity to documented cultural expressions that confirms a deep historical continuity to Iroquoian systems of ideology and thought" (Ferris 2009:114). As a result, Indigenous peoples of southern Ontario have left behind archaeologically significant resources that show continuity with past peoples, even if this connection has not been recorded in historical Euro-Canadian documentation.

Portions of southwestern Ontario were also occupied by Algonkian-speaking groups both before and after European contact. Generally, the pre-contact Indigenous presence in much of southern Ontario reflects occupation by northern Iroquoian speakers. During and following the Iroquois Wars of the mid-17th century and the dispersal of the Iroquoian-speaking Huron-Petun and Neutral, a considerable reduction in the extent of territory occupied by Algonkian speakers occurred in southern Ontario. Beginning about 1690, northern Algonkian speakers from northern Ontario began to move southwards and southern Iroquoian speakers began to push southern Algonkian-speakers further west (Ferris 2009; Schmalz 1991).

1.2.5 Historical Euro-Canadian Period

Following the Toronto Purchase of 1787, today's southern Ontario was within the old Province of Quebec and divided into four political districts: Lunenburg, Mechlenburg, Nassau, and Hesse. These became part of the Province of Upper Canada in 1791, and renamed the Eastern, Midland, Home, and Western Districts, respectively. The Study Area is within the former Hesse District, then later the Western District, which originally included all lands lying to the west of a line running north from Long Point on Lake Erie to Georgian Bay. Each district was further subdivided into counties and townships, with the Study Area falling within Middlesex County and Delaware Township.

In 1790, Alexander McKee negotiated Treaty No. 2 with the chiefs of the Odawa, Chippewa, Pottawatomi and Huron for lands between the Detroit River and Catfish Creek south of the *Rivière à la Tranche* (Thames River), including what would become Delaware and Westminster Townships in Middlesex County. In part, the portion of the treaty pertaining to Delaware Township, witnessed May 19, 1790, read:

"KNOWING ALL MEN BY THESE PRESENTS, that we the principal Village and War Chiefs of Ottawa, Chippawa, Pottowatomi and Huron Indians Nations of Detroit for and in consideration of the Sum of Twelve Hundred Pounds Currency of the Province of Quebec at Five Shillings per Spanish Dollar for valuable Wares and Merchandise to us delivered by the hands of Alexander McKee, Esquire, Deputy Agent of Indian Affairs the receipt whereof we do hereby acknowledge, have by and with the consent of the whole of our said Nations, given, granted, enfeoffed, alienated, and confirmed, and by these presents do give, grant, enfeoff, alien, and confirm unto His Majesty George the Third, King of Great Britain, France and Ireland, Defender of the Faith, &c., &c., &c., a certain Tract of land beginning at the mouth of Catfish Creek, commonly called Rivière au Chaudière on the North Side of Lake Erie being the Western extremity of a Tract purchased by His said Majesty from the Messesagey Indians in the year One Thousand Seven Hundred and Eighty Four and from thence running Westward along the border of Lake Erie and up the Streight to the mouth of a river known by the name of Channail Ecarté to the first fork on the south side, then due east line until it intersects the Rivière à la Tranche, and up the said Rivière à la Tranche to the Thousand Seven Hundred and Eighty Four, then following the Western boundary of said tract being a due South direction until it strikes the mouth of said Catfish Creek or otherwise Rivière au Chaudière being the first offset." (Indigenous & Northern Affairs Canada 2016)

Official interest in the area dates to 1792 and 1793, when Lieutenant-Governor for Upper Canada John Graves Simcoe and his wife Elizabeth visited the Forks of the Thames during an overland journey from Niagara to Detroit and back (Macleod 1972:155). For Simcoe, the area was natural strategic and administrative centre for the colony; equidistant from Detroit and Niagara and well inland from the hostile US border, it could support nearby naval bases on three of the Great Lakes and be easily defended in the event of American attack (Macleod 1972:156). He subsequently ordered the lands of the Thames River basin be surveyed for European habitation. Two years later, London District was formed from parts of the Home and Western Districts, with the district town established at what is now Turkey Point.

In 1801, Simcoe's former private secretary Colonel Thomas Talbot sold his commission to promote British settlement of the area, and hired surveyor Colonel Mahlon Burwell, who began his work in 1810 (Brunger 2019; Gentilcore & Donkin 1973). However, as early as 1808, a 'non-progressive' squatter named Joshua Applegarth had built a cabin on the west side of the north branch of the Thames near the Forks close to today's Blackfriar's Bridge and attempted to grow rope hemp on the river flats (Stott 1999:13-14). Lots in Westminster Township were assigned as early as 1811 by Simon Z. Watson, including Lot 25, Concession B, which was allocated to John

Odell in February of 1811. Watson was relieved of his duties as surveyor in 1812, making Odell's allotment one of the earliest in Westminster Township (Curnoe 1995).

Both the surveys and settlement would be disrupted by the War of 1812, which came to the London area in 1813. After advancing up the Thames, American forces faced a combined British regular, militia, and First Nation force at Moraviantown. In the ensuing Battle of the Thames, the widely respected First Nation leader Tecumseh was killed, and the British force was routed (Troughton & Quinlan 2009:43-44). During the 1814 campaign season, the American again met the British on the Thames, and the latter were again defeated at a skirmish on the Longwoods Road, also known as 'Battle Hill' (Troughton & Quinlan 2009:44).

After the war, settlers began arriving in Middlesex County in numbers, concentrating first in the Township of Delaware, near the Thames River, then spreading to Westminster Township and London Township.

1.2.5.1 Delaware Township

Lieutenant-Governor John Graves Simcoe believed that the best way to defend the newly formed Province of Upper Canada from American expansion was to populate the area; therefore, in 1793, Simcoe ordered the lands of the Thames River basin to be surveyed for habitation. At this time, Simcoe granted 2,200 acres of the area that would later become Delaware Township, to Ebenezer Allen for his duty in the Indian department during the American Revolutionary War (Brock and Moon 1972). This grant was made with the condition that Allen would build a grist mill, sawmill, and church in the area, which he subsequently completed from 1797 to 1816.

In the years following Allen's initial settlement, several other settlers arrived in the area, including Gideon Tiffany, Daniel Springer, Thomas Sumner, McAlvan and Dudley Ladd, and Timothy and Aaron Kilbourn. By 1817, the population of Delaware Township was reportedly 80 inhabitants and one church, one school, one grist mill and two sawmills were operational in the area. By 1888, the population had reached 1,687 inhabitants, and only two notable villages, Delaware, located in the northwest portion of the Township, and Kilworth, located in the northeast portion of the Township, had appeared in the area (Brock and Moon 1972). The present Study Area is located approximately 1.6 km east of the village of Kilworth.

1.2.5.2 Study Area Specific Context

Although the Study Area is comprised entirely of the municipal ROW for Oxford Street West and Gideon Drive, it originally fell within part of Lots C and D, Broken Front Concession in the former geographic Township of Delaware. The patent plan of Delaware Township does not indicate any roads across Lots C and D, Broken Front Concession, while the patent holders themselves are illegible due to faded print or damage (Map 3). Despite this, the Abstract Index Books digitized by Service Ontario's ONLand database (Land Registry Office I.D. # 33, Books DEL 3 and DEL 4) show that the patent for Lots C and D were issued to Anthony Westbrook in 1802.

Tremaine's Map of The County of Middlesex, produced in 1862, shows a road system similar to what is today Oxford Street West and Gideon Drive, and that Lots C and D, Broken Front Concession have been subdivided. North of what is now Oxford Street West, Thomas Batsman is shown as owning the portion of Lot C in the Study Area, Robert Kilbourn owns the western portion of Lot D, and Andrew Elson owns the eastern portion (Map 4). Thomas Batsman also owns the land between what is now Oxford Street West and Gideon Drive. South of Gideon Drive and Oxford Street West, Thomas Roadknight owns the portion of Lot C within the Study Area, while Harvey Kilbourn owns the western portion of Lot D, and Timothy Kilbourn owns the western portion (Map 4). Several structures are shown on these lots along the roads. There are structures indicated on the properties of Thomas Roadknight, Robert Kilbourn, Harvey Kilbourn, and Andrew Elson along the roads adjacent to the Study Area (Map 4).

The map of Delaware Township in the 1878 *Illustrated Historical Atlas of Middlesex County* shows Thomas Bateman owning the portion of Lot C in the Study Area, both north of what is now Oxford Street West and Gideon Drive. This is likely the same person shown on Tremaine's map, Thomas Batsman, with one of them being a typo. Continuing along the north side of what is now Oxford Street West, 1878 map also shows Robert Kilbourn owning the western portion of Lot D, and the heirs of Andrew Elson owning the eastern portion (Map 5). South of what is now Oxford Street West and Gideon Drive, B. Kilbourn owns the portion of Lot C within the Study Area, while Henry Kilbourn owns the western portion of Lot D, and the Heirs of R. Kilbourn own the eastern portion (Map 5). Similar to Tremaine's 1862 map, structures shown on Lots C and D adjacent to the Study Area on the 1878 map are along the roads. These include Robert Kilbourn (Lot D western portion) and the heirs of Andrew Elson (Lot D eastern portion) north of what is now Oxford Street West, and R. Kilbourn (Lot C), Henry Kilbourn (Lot D western portion), and the heirs of R. Kilbourn (Lot D eastern half). The structure of the heirs of R. Kilbourn is set back from the road, while the others appear to be adjacent to the road (Map 5).

Twentieth century maps and aerial photographs provide a more accurate view of the layout of Oxford Street West and Gideon Drive, showing the evolution of the intersection. Mapping from 1913, as well as an aerial photograph from 1946, show these two streets as they appear in Tremaine's 1862 map and the 1878 *Illustrated Historical Atlas* map (Map 6), where Commissioner's Road West, now Oxford Street West, curves and continues southwest as Gideon Drive and Commissioner's Road West heads off to the northwest as the intersecting road. This intersection changes in the 1950s, as an aerial photograph from 1955 shows the realignment of Commissioner's Road West, now Oxford Street West, into a long, sweeping curve, with Gideon Drive becoming the intersecting road (Map 6). This aerial photograph shows the extensive disturbance of the Study Area at this intersection during the realignment. The 1962 topographic map shows the modern alignment of the intersection (Map 6), which remained unchanged until the addition of Kains Road in 2019.

1.3 Archaeological Context

1.3.1 The Natural Environment

The Study Area is situated on the border of the Caradoc Sand Plains London Annex and the Mount Elgin Ridges physiographic regions. The Caradoc Sand Plain London Annex is described as:

"Immediately surrounding the City and extending several miles eastward there is a basin lying between 850 and 900 feet A.S.L. Into this basin the earliest glacial spillways discharged muddy water, laying down beds of silt and fine sand. Later, when standing water had retired westward to lower levels, gravely alluvium was spread over the lower parts of the basin."

Chapman and Putnam 1984: 146

The Mount Elgin Ridges is described as:

"Between the Thames Valley and the Norfolk sand plain lies a succession of ridges and vales which are called the Mount Elgin Ridges... South of the Westminster and St. Thomas Moraines the country drains to Lake Erie by means of the tributaries of Kettle, Catfish and Otter Creeks... The two major landform components of this region provide obviously contrasting soils. The ridges are well drained while imperfect and even poor drainage characterize the hollows. The ridges are formed from clay till similar to that of the Wyoming Moraine and the Stratford plain."

Chapman and Putnam 1984:145

The localized topography of the Study Area is generally flat, sitting at 270 m above sea level. Soils within the Study Area are mapped as Muriel soils, which are moderately well to imperfectly drained silt loam, loam, silty clay

loam. These soils support agricultural activities with improved drainage (Hagerty and Kingston 1992). Bedrock deposits of the area date to the Middle Devonian Period and consist of the Hamilton Group (Hewitt 1972).

The Study Area also lies within the Mixedwood Plains ecozone of Ontario (Canadian Atlas Online 2014). Although largely altered by recent human activity, this ecozone once supported a wide variety of deciduous trees, such as various species of ash, birch, chestnut, hickory, oak, and walnut, as well as a variety of birds and small to large land mammals, such as raccoon, red fox, white tailed deer, and black bear.

The closest potable water source to the Study Area is an unnamed tributary of the Thames River, which flows approximately 150 m north of the Study Area. The Thames River watershed drains an area of land approximately 5,825 km², flowing into Lake St. Clair at Lighthouse Cove, Lakeshore, Ontario to the southwest (UTRCA 2013).

At the time of the Stage 1 and 2 AA, the Study Area consisted of municipal ROWs, including roads, road embankments, drainage ditches, and overgrown grassy areas.

1.3.2 Previous Archaeological Work

A search of the *Ontario Archaeological Sites Database* (OASD) indicated that there are 34 archaeological sites located within a 1 km radius of the Study Area, six of which are within 300 m of the Study Area. Data concerning these sites is presented in Table 2 and described in more detail below.

Table 2: Archaeological Sites within 1 km of the Study Area

Borden #	Site Name	Site Type	Affinity
AfHi-50	Dunn	Village	Pre-Contact Indigenous; Late Woodland
AfHi-74	Mariem 2	Scatter	Pre-Contact Indigenous; Late Woodland
AfHi-189	River Bend 1	Findspot	Pre-Contact Indigenous
AfHi-190	River Bend 2	Findspot	Pre-Contact Indigenous; Early Archaic
AfHi-191	River Bend 3	Findspot	Pre-Contact Indigenous
AfHi-192	River Bend 4	Findspot	Pre-Contact Indigenous
AfHi-193	River Bend 5	Findspot	Pre-Contact Indigenous
AfHi-194	River Bend 6	Findspot	Pre-Contact Indigenous
AfHi-195	River Bend 7	Findspot	Pre-Contact Indigenous, Euro-Canadian
AfHi-196*	William Mair House/River Bend 8	Scatter, Building, House, Midden	Pre-Contact Indigenous, Euro-Canadian
AfHi-215	River Bend 22	Findspot	Pre-Contact Indigenous
AfHi-216	River Bend 23	Findspot	Euro-Canadian
AfHi-230*	Kilbourne Cemetery	Burial/Cemetery	Pre-Contact Indigenous
AfHi-252		Findspot	Euro-Canadian
AfHi-261*	Kilbourne	Homestead	Pre-Contact Indigenous, Euro-Canadian
AfHi-263		Scatter	Pre-Contact Indigenous, Euro-Canadian
AfHi-264		Scatter	Pre-Contact Indigenous
AfHi-265	Cassady	Camp/Campsite, Homestead	Pre-Contact Indigenous; Late Archaic, Middle Woodland, Late Woodland; Euro-Canadian

Borden #	Site Name	Site Type	Affinity
AfHi-266	Stevens Site	Camp/Campsite	Pre-Contact Indigenous; Early Archaic
AfHi-267		Findspot	Pre-Contact Indigenous; Middle Woodland
AfHi-324	Kains Road	Camp/Campsite	Euro-Canadian
AfHi-325	William Rufus	Homestead	Euro-Canadian
AfHi-336	Wintersun Site	Camp/Campsite	Pre-Contact Indigenous; Woodland
AfHi-346		Camp/Campsite, Village	Pre-Contact Indigenous; Woodland
AfHi-347*		Scatter, Log Cabin	Pre-Contact Indigenous, Euro-Canadian
AfHi-348		Scatter	Pre-Contact Indigenous
AfHi-349*		Residential Structure	Euro-Canadian
AfHi-350		Farmstead, Outbuilding, Processing	Euro-Canadian
AfHi-351		Findspot	Pre-Contact Indigenous
AfHi-375*	Wild Turkey	Scatter	Pre-Contact Indigenous; Late Woodland
AfHi-399	Woodhull 1	Camp/Campsite	Pre-Contact Indigenous; Middle Woodland
AfHi-400	LEC1	Camp/Campsite	Pre-Contact Indigenous
AfHi-401	LEC2	Scatter	Pre-Contact Indigenous
AfHi-402		Camp/Campsite	Pre-Contact Indigenous; Late Woodland

*Site within 300 m of the Study Area.

Several AAs have been conducted within 50 m of the Study Area.

In 1999, Archaeologix Inc. conducted a Stage 1 and 2 AA for the Phyllis Matthews Subdivision consisting of an 11.5-ha study area approximately 140 m west of the current Study Area (CIF # 1999-049-100). This AA consisted of pedestrian survey and resulted in the identification of two findspots consisting of one piece of lithic debitage each, as well as a pre-contact Indigenous scatter of lithic debitage measuring approximately 17 m by 23 m (Archaeologix 2000). This site, Location 3, was recommended for Stage 3 AA but is located more than 300 m from the current Study Area.

In 2001, Archaeologix Inc. conducted a Stage 1 and 2 AA for the Oxford Street extension, consisting of a study corridor approximately 850 m between the intersection of Westdel Bourne and Oxford Street West and the intersection of Oxford Street West, Commissioner's Road West, and Kains Road (CIF # 2001-002-033). This AA consisted primarily of test pit survey with a small area subject to pedestrian survey and resulted in the relocation of the previously registered William Mair House (AfHi-196) and the identification of the Kilbourne Site (AfHi-261) (Archaeologix 2001a). Both of these sites are within 300 m of the current Study Area and were recommended for Stage 3 AA.

The Stage 3 AA of the William Mair House (AfHi-196) consisted of the hand excavation of eight 1 m² test units, resulting in the recovery of 690 Euro-Canadian artifacts, 109 fragments of bone, and one piece of lithic debitage (Archaeologix 2001b, CIF #s 2001-002-008 and 2001-002-048). This site was determined to date from ca. 1800 to 1850 and was interpreted as a domestic deposit related to an early occupation on the property. As such, the site was recommended for Stage 4 mitigation (Archaeologix 2001b).

The Stage 4 mitigation of the William Mair House (AfHi-196) involved the mechanical topsoil removal of an area measuring approximately 25 m by 15 m to expose a midden deposit identified during the Stage 3 AA, followed by

the hand-excavation of 38 1 m² units across the midden deposit (Archaeologix 2002, CIF #s 2001-002-073, 2001-002-074, and 2001-002-077). The Stage 4 mitigation resulted in the recovery of eight pre-contact Indigenous artifacts and 11,059 Euro-Canadian artifacts. The pre-contact Indigenous artifacts recovered from the William Mair House (AfHi-196) included one celt, one lithic drill fragment, and six pieces of lithic debitage. The Euro-Canadian artifact assemblage contained artifacts dating from the early 19th century into the 20th century, with two possible periods of use from the early 19th century and the late 19th century into the 20th century (Archaeologix 2002). As a result, the William Mair House (AfHi-196) was interpreted as a domestic refuse deposit relating to an earlier structure on the property as well as the later structure, whose foundation still existed on the property at the time (Archaeologix 2002).

The Stage 3 AA of the Kilbourne Site (AfHi-261) consisted of the hand excavation of 12 1 m² test units, resulting in the recovery of 548 Euro-Canadian artifacts, 15 fragments of bone, and two pieces of lithic debitage (Archaeologix 2001b, CIF #s 2001-002-008 and 2001-002-048). The site was determined to date from ca. 1800 to 1840 and was recommended for Stage 4 mitigation (Archaeologix 2001b).

The Stage 4 mitigation of the Kilbourne Site (AfHi-261) involved the hand-excavation of 155 1 m² units followed by mechanical topsoil removal, resulting in the recovery of 24 pre-contact Indigenous artifacts and 21,782 Euro-Canadian artifacts, as well as the identification of eight subsurface cultural features (Archaeologix 2002, CIF #s 2001-002-073, 2001-002-074 & 2001-002-077). The pre-contact Indigenous artifacts recovered from the Kilbourne Site (AfHi-196) included five projectile point fragments, two biface fragments, one celt fragment, and 17 pieces of lithic debitage. Projectile points included one Middle Archaic Period Brewerton Corner-notched point (ca. 3500 – 2500 BC), one Middle Woodland Period Snyders point (ca. AD 500 – 700), two triangular points, and one projectile point tip (Archaeologix 2002). The Euro-Canadian artifact assemblage contained artifacts dating to the pre-1840s, and as a result, the Kilbourne Site (AfHi-261) was interpreted as representing the early 19th century occupation of this land by the Kilbourne family (Archaeologix 2002).

In 2008, Archaeologix Inc. conducted a Stage 1 and 2 AA for a 61.1-ha property located at the southwestern corner of Oxford Street West and Westdel Bourne (CIF # P001-434-2008). This AA involved pedestrian and test pit survey and resulted in the identification of eight pre-contact Indigenous sites and three Euro-Canadian sites. Five of these sites, including two pre-contact Indigenous sites and the three Euro-Canadian sites, were recommended for Stage 3 AA, while the remaining six sites were not recommended for further work (Archaeologix 2008a). Two of these sites, AfHi-347 and AfHi-349, are located within 300 m of the current Study Area.

The Stage 3 AA of AfHi-347 involved the hand excavation of 19 1 m² test units and resulted in the recovery of 16 pre-contact Indigenous artifacts and 905 Euro-Canadian artifacts (CIF # P001-461-2008). Pre-contact Indigenous artifacts included six pottery sherds and 10 pieces of lithic debitage. The Euro-Canadian assemblage contained artifacts dating to the early to mid-19th century, and the site was recommended for Stage 4 mitigation (Archaeologix 2008b).

The Stage 4 mitigation of AfHi-347 involved the hand-excavation of 34 1 m² units followed by mechanical topsoil removal, resulting in the recovery of 11 pre-contact Indigenous artifacts and 12,249 Euro-Canadian artifacts, as well as the identification of 16 subsurface cultural features, including two pre-contact Indigenous features and 14 Euro-Canadian features (Golder 2009, PIF # P001-481-2008). The pre-contact Indigenous artifacts recovered from AfHi-347 included five Late Woodland pottery sherds, four celt fragments, and two pieces of lithic debitage (Golder 2009). The Euro-Canadian component of AfHi-347 was interpreted as the remains of a domestic refuse deposit relating to an early to mid-19th century log cabin as well as a late 19th and 20th century occupation following the abandonment of the log cabin (Golder 2009).

The Stage 3 AA of AfHi-349 involved the hand-excavation of 15 1 m² test units and resulted in the recovery of 314 Euro-Canadian artifacts (CIF # P001-461-2008). The Euro-Canadian assemblage contained artifacts dating to the late 19th to early 20th centuries, and the site was not recommended for further work (Archaeologix 2008b).

In 2009, Mayer Heritage Consultants Inc. conducted a Stage 1 and 2 AA of the properties located at 1959 and 1997 Oxford Street West and 1079 Westdel Bourne for the proposed Norquay Subdivision Development (CIF # P066-031-2009). This AA involved pedestrian and test pit survey and resulted in the identification of two findspots, each consisting of one piece of lithic debitage. Neither findspot was recommended for further work (MHC 2009a).

Also in 2009, Mayer Heritage Consultants Inc. conducted a Stage 1 and 2 AA of the property located at 2029 Oxford Street West for the proposed Kains Road Subdivision, Phase II (CIF # P066-032-2009). This AA involved pedestrian and test pit survey and resulted in the identification of one biface fragment at Location 1 (AfHi-375) (MHC 2009b). This findspot, renamed Wild Turkey, was subsequently subject to Stage 3 AA involving the hand excavation of five 1 m² test units, resulting in the recovery of three pieces of lithic debitage (CIF # P066-061-2009). As a result, Location 1 was not recommended for further work (MHC 2009b).

In 2016, AECOM conducted a Stage 1 AA for a 10-ha study area for the Tributary “C” Stormwater Management Facilities located at the intersection of Oxford Street West and Westdel Bourne (PIF # P438-0066-2016). This AA found that all lands within the study area had been previously assessed in previous AAs and no further work was recommended (AECOM 2016).

In 2018, AECOM conducted a Stage 1 and 2 AA for the development of 1919 and 1929 Oxford Street West involving test pit survey (PIF # P438-0168-2018). The majority of the study area was found to have been previously disturbed and no archaeological resources were identified (AECOM 2018).

Finally, in 2018, Lincoln Environmental Consulting Group Corp. conducted a Stage 1 and 2 AA of a 17.78-ha study area for the Gideon Heights Subdivision involving pedestrian and test pit survey (PIF # P344-0207-2018). This AA resulted in the identification of two pre-Contact Indigenous locations, LEC1 (AfHi-400) and LEC2 (AfHi-401). Both sites were recommended for Stage 3 AA but are located more than 300 m from the current Study Area (LEC 2018).

To the best of our knowledge, no additional AAs have been conducted within 50 m of the current Study Area.

Information concerning specific site locations is protected by provincial policy and is not fully subject to the *Freedom of Information Act*. The release of such information in the past has led to looting or various forms of illegally conducted site destruction. Confidentiality extends to all media capable of conveying location, including maps, drawings, or textual descriptions of a site location. For this reason, maps and data that provide information on archaeological site locations are provided as supplementary documentation and do not form part of this public report.

The MHSTCI will provide information concerning site location to the party or an agent of the party holding title to a property, or to a licensed archaeologist with relevant cultural resource management interests.

1.3.3 Archaeological Potential

Archaeological potential is established by determining the likelihood that archaeological resources may be present within a property. In accordance with the MHSTCI's 2011 *Standards and Guidelines for Consultant Archaeologists* the following are features or characteristics that indicate archaeological potential:

- Previously identified archaeological sites.
- Water sources:

- Primary water sources (lakes, rivers, streams, creeks).
- Secondary water sources (intermittent streams and creeks; springs; marshes; swamps).
- Features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised gravel, sand, or beach ridges; relic river or stream channels indicated by clear dip or swale in the topography; shorelines of drained lakes or marshes; and cobble beaches).
- Accessible or inaccessible shoreline (e.g., high bluffs, swamps or marsh fields by the edge of a lake; sandbars stretching into marsh).
- Elevated topography (eskers, drumlins, large knolls, plateaux).
- Pockets of well drained sandy soil, especially near areas of heavy soil or rocky ground; distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases (there may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings).
- Resource areas including:
 - Food or medicinal plants.
 - Scarce raw minerals (e.g., quartz, copper, ochre, or outcrops of chert).
 - Early Euro-Canadian industry (fur trade, mining, logging).
- Areas of Euro-Canadian settlement.
- Early historical transportation routes.

In recommending a Stage 2 property survey based on determining archaeological potential for a Study Area, the MHSTCI stipulates the following:

- No areas within 300 m of a previously identified site, water sources, areas of early Euro-Canadian Settlement, or locations identified through local knowledge or informants can be recommended for exemption from further assessment.
- No areas within 100 m of early transportation routes can be recommended for exemption from further assessment.
- No areas within the property containing an elevated topography; pockets of well-drained sandy soil; distinctive land formations; or resource areas can be recommended for exemption from further assessment.

Based on the criteria outlined above, the Study Area was determined to have archaeological potential for both pre-contact Indigenous and historical Euro-Canadian sites. This determination is based on the proximity of the Study Area to an unnamed tributary of the Thames River and known archaeological sites. Additionally, the Study Area is located in an area of Middlesex County with Euro-Canadian settlement history dating back to the early 19th centuries, including the Kilworth Cemetery, established in 1825, located at 2275 Oxford Street West, approximately 280 m west of the western terminus of the Study Area. This determination is consistent with the *London Archaeological Management Plan*, which identifies the Study Area to have archaeological potential (ASI 2017).

1.3.4 Features Indicating the Removal of Archaeological Potential

As stated in Section 1.3.2 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011), archaeological potential can be determined to be removed either entirely or in part when background research and property inspection confirm extensive and deep land alterations that have severely damaged the integrity of any archaeological resources that may be present. Types of disturbance that remove archaeological potential may include: quarrying; major landscaping involving grading below topsoil; building footprints; and sewage and infrastructure development.

As discussed in Section 1.2.5.2 above, a significant portion of the Study Area has been impacted by construction activities relating to Oxford Street West, Gideon Drive, Kains Road, and their associated road embankments and drainage ditches. These areas were surveyed and documented accordingly to confirm the presence and extent of disturbance (see Section 2.0 below).

2.0 FIELD METHODS

The Stage 1 and 2 assessment was conducted on September 24 and 27, 2021 under archaeological consulting license P1013 issued to Rebecca Parry of Golder by the MHSTCI (P1013-0008-2021). The weather during the assessment was mostly sunny with temperatures ranging from 10°C to 23°C, and at no time were the conditions detrimental to the observation or recovery of archaeological material. Photo locations are illustrated on Map 7 and Map 8. All activities undertaken during the assessment followed the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011).

All GPS points were recorded with a Trimble Nomad GPS unit using its internal receiver, achieving a minimal accuracy of 3 m.

2.1 Stage 1 Archaeological Assessment

A property inspection was conducted on September 24, 2021, as part of this AA to gain first-hand knowledge of the Study Area, to determine if there were any areas of disturbance that would affect archaeological potential, and to determine what survey strategies would be appropriate for a Stage 2 AA, should it be required.

All portions of the Study Area were systematically inspected to confirm if features of archaeological potential were present and if there were any areas of deep and extensive disturbance, which would have removed archaeological potential. As stated in Section 1.4.2 of the *Standards and Guidelines for Consultant Archaeologists* (Government of Ontario 2011:22), a property may only be exempt from Stage 2 AA once deep and extensive ground disturbance has been confirmed through a property inspection.

The Stage 1 property inspection found that the majority of the Study Area has been subject to prior disturbance from the construction of Oxford Street West, Gideon Drive, and Kains Road, as well as drainage ditches, and buried utilities (Image 1 to Image 15). Two small potentially undisturbed areas were found to retain archaeological potential and were identified for Stage 2 AA (Map 7).

2.2 Stage 2 Archaeological Assessment

Areas that were determined to have archaeological potential were subject to test pit survey at 5 m intervals on September 27, 2021, with each test pit measuring at least 30 cm in diameter and dug a minimum of 5 cm into subsoil. All soil was screened through 6 mm mesh to facilitate the recovery of any cultural material present. Each test pit was examined for stratigraphy, cultural features, and fill. All test pits were backfilled upon completion as per Section 2.1.2, Standard 9 of the MHSTCI 2011 *Standards and Guidelines for Consultant Archaeologists*.

Each test pit area is discussed below.

2.2.1 Test Pit Area 1

Test Pit Area 1 is a small, flat area at the bottom of the road embankment on the western side of Gideon Drive approximately 120 southwest of the intersection of Gideon Drive and Oxford Street West (Map 8). The area consists of an overgrown grassy area measuring approximately 2.5 m wide by 20 m long. Test Pit Area 1 was subject to Stage 2 test pit survey using the methodology described above (Image 16). Stratigraphy encountered here consisted of medium grey-brown silty clay loam topsoil over yellow-brown silt loam subsoil (Image 17). Test pits averaged 35 cm deep. No archaeological resources were identified in Test Pit Area 1.

2.2.2 Test Pit Area 2

Test Pit Area 2 is a flat area located between the drainage ditch and the edge of the Study Area on the northern side of Oxford Street West approximately 170 m west of the intersection of Oxford Street West and Gideon Drive (Map 8). The area consists of an overgrown grassy area measuring approximately 3 m wide by 50 m long. Test Pit Area 2 was subject to Stage 2 test pit survey using the methodology described above (Image 18). Stratigraphy encountered here consisted of medium grey-brown silty loam topsoil over yellow-brown silt loam subsoil (Image 19). Test pits ranged from 50 to 70 cm deep. No archaeological resources were identified in Test Pit Area 2.

3.0 RECORD OF FINDS

The Stage 1 and 2 AA was conducted employing the methods described in Section 2.0. Map 7 and Map 8 illustrate the areas assessed and the methods employed, while Image 1 to Image 19 illustrate the survey conditions.

The Stage 2 AA did not result in the identification of any archaeological resources.

Table 3 provides an inventory of the documentary record generated in the field.

Table 3: Inventory of Documentary Record

Document Type	Current Location of Document	Additional Comments
Field Notes	Golder Office in London	Eight pages from original field book and stored digitally in project file.
Hand Drawn Maps	Golder Office in London	Six maps stored in project folder and digitally in project file.
Maps provided by Client	Golder Office in London	One map stored digitally in the project file.
Digital Photographs	Golder Office in London	102 digital photos stored digitally in project file.

4.0 ANALYSIS AND CONCLUSIONS

The Stage 1 AA background study indicated that the Study Area exhibited potential for the identification of archaeological resources. Stage 1 property inspection found that the majority of the Study Area has been subject to prior disturbance from the construction of Oxford Street West, Gideon Drive, and Kains Road, as well as drainage ditches, and buried utilities, while two small potentially undisturbed areas were identified to retain archaeological potential (Map 7). As a result, these two areas were subject to Stage 2 test pit survey at 5 m intervals, which did not result in the identification of any archaeological resources (Map 8).

5.0 RECOMMENDATIONS

The results of the Stage 1 and 2 AA presented herein provide the basis for the following recommendations:

- 1) Areas of previous disturbance, as shown in brown on Maps 7 and 8, are previously disturbed and no further archaeological assessment is recommended.
- 2) Areas subject to Stage 2 test pit survey, as shown in yellow on Maps 7 and 8, did not result in the identification of archaeological sites and as such, no further archaeological assessments are recommended.

Despite best efforts and all due diligence, no archaeological assessment can necessarily account for all potential archaeological resources. Should deeply buried archaeological resources be identified during ground disturbance activity associated with future development of the Study Area, ground disturbance activities should be immediately halted, and the Archaeology Division of the Culture Programs Unit of the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) notified.

The MHSTCI is asked to review the results and recommendations presented herein, accept this report into the Provincial Register of archaeological reports and issue a standard letter of compliance with the Ministry's 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licencing.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Heritage, Sport, Tourism and Cultural Industries as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act* (Government of Ontario 1990b). The report is prepared to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Heritage, Sport, Tourism and Culture Industries, a letter will be issued by the Ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

It is an offence under Section 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alterations 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 Archaeological reports referred to in Section 65.1 of the *Ontario Heritage Act* (Government of Ontario 1990b).

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* (Government of Ontario 1990b).

The *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33, requires that any person discovering or having knowledge of a burial site shall immediately notify the police or coroner (Government of Ontario 2002). It is recommended that the Registrar of Cemeteries at the Ministry of Consumer Services is also immediately notified.

7.0 IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Golder has prepared this report in a manner consistent with the level of care and skill ordinary exercised by members of the archaeological profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied, is made.

This report has been prepared for the specific site, design objective, developments and purpose described to Golder by the Client. The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without Golder's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the client, Golder may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder. The report, all plans, data, drawings and other documents as well as electronic media prepared by Golder are considered its professional work product and shall remain the copyright property of Golder, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client cannot rely upon the electronic media versions of Golder's report or other work products.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project.

Special risks occur whenever archaeological investigations are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain archaeological resources. The sampling strategies incorporated in this study comply with those identified in the Ministry of Tourism and Culture's Standards and Guidelines for Consultants Archaeologists (Government of Ontario 2011).

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9.0 IMAGES



Image 1: A representative example of the disturbed Oxford Street West ROW; facing southwest, September 24, 2021.



Image 2: A representative example of the disturbed Oxford Street West ROW; facing southwest, September 24, 2021.



Image 3: A representative example of the disturbed Oxford Street West ROW; facing northeast, September 24, 2021.



Image 4: A representative example of the disturbed Oxford Street West ROW; facing east, September 24, 2021.



Image 5: A representative example of the disturbed Gideon Drive ROW; facing northeast, September 24, 2021.



Image 6: A representative example of the disturbed Gideon Drive ROW (note road embankment and storm sewer in centre of photo); facing northeast, September 24, 2021.



Image 7: A representative example of the disturbed Gideon Drive ROW; facing northeast, September 24, 2021.



Image 8: A representative example of the disturbed Gideon Drive ROW; facing northeast, September 24, 2021.



Image 9: The original alignment of Oxford Street West still visible; facing southeast, September 24, 2021.



Image 10: A representative example of the disturbed Oxford Street West ROW; facing northwest, September 24, 2021.



Image 11: A representative example of the disturbed Oxford Street West ROW; facing west, September 24, 2021.



Image 12: A representative example of the disturbed Oxford Street West ROW; facing southeast, September 24, 2021.



Image 13: A representative example of the disturbed Oxford Street West ROW; facing southeast, September 24, 2021.



Image 14: A representative example of the disturbed Kains Road ROW; facing south, September 24, 2021.



Image 15: A representative example of the disturbed Kains Road ROW; facing south, September 24, 2021.



Image 16: Test Pit Area 1; test pit survey in progress; facing northeast, September 27, 2021.



Image 17: A representative example of a test pit in Test Pit Area 1; facing south, September 27, 2021.



Image 18: Test Pit Area 2; test pit survey in progress; facing west, September 27, 2021.

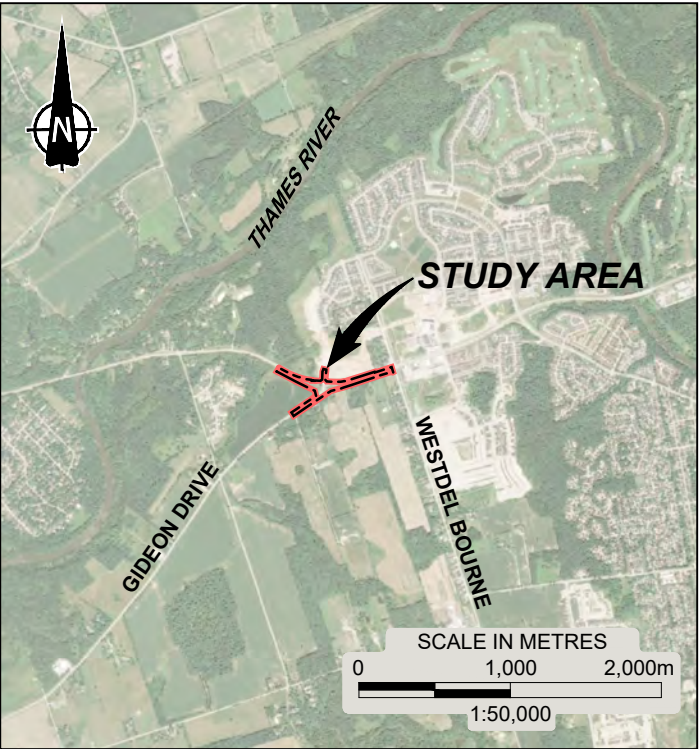
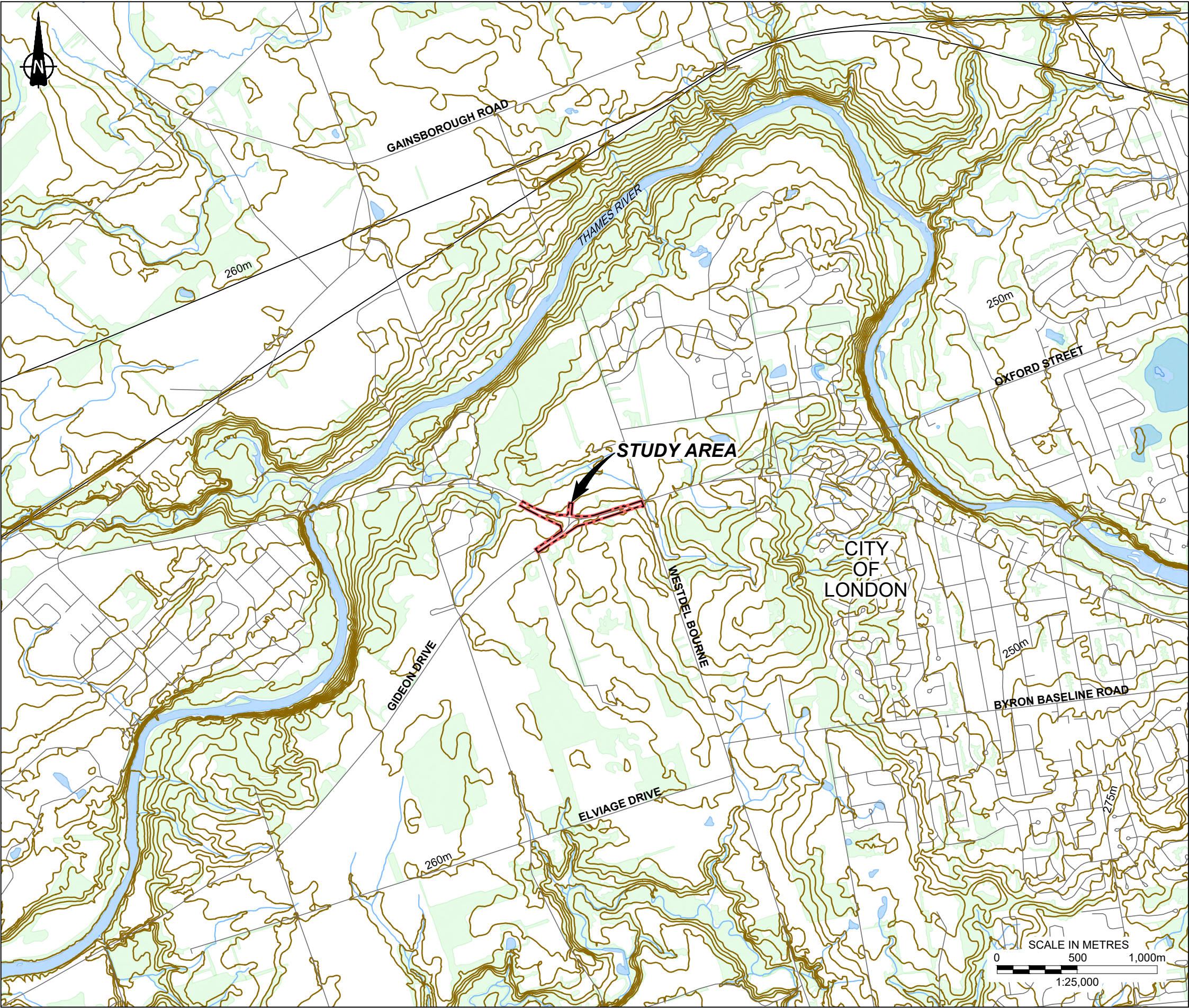


Image 19: A representative example of a test pit in Test Pit Area 2; facing east, September 27, 2021.

10.0 MAPS

All maps follow on the succeeding pages.

Drawing file: 20391051-2000-R01001.dwg Dec 07, 2021 -- 12:33pm 25mm Original Format is Tabloid 279mm x 432mm Client: RV Anderson and Associates Limited



REFERENCE

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NOTES

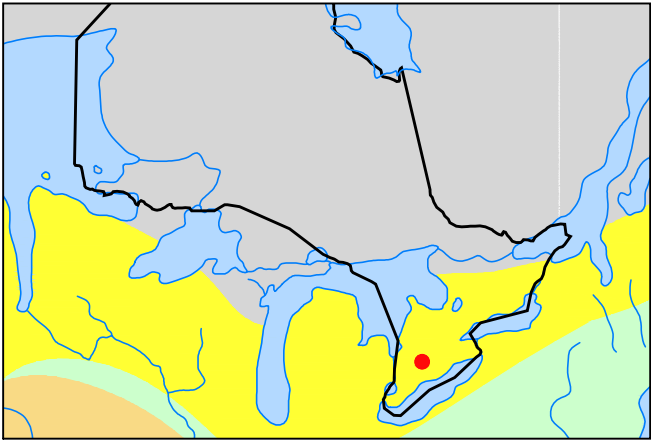
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BING IMAGERY USED FOR ILLUSTRATION PURPOSES ONLY AND NOT TO BE USED FOR MEASUREMENTS.

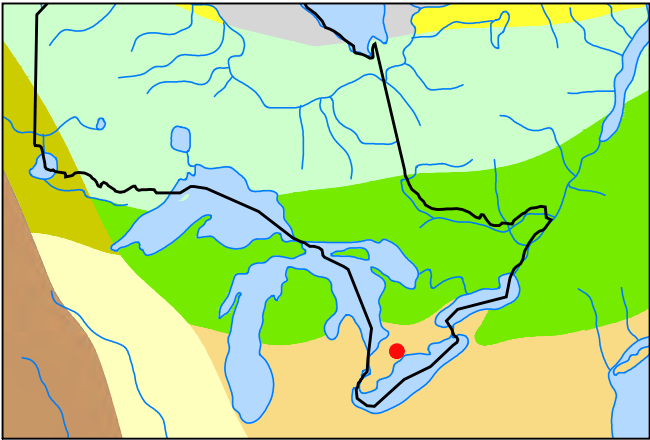
ALL LOCATIONS ARE APPROXIMATE.

PROJECT				STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OXFORD AND GIDEON INTERSECTION IMPROVEMENTS LONDON, ONTARIO			
TITLE				LOCATION OF STUDY AREA			
		PROJECT No.		20391051		FILE No. 20391051-2000-R01001	
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		CHECK	LCM	Jan 7/22	MAP 1		

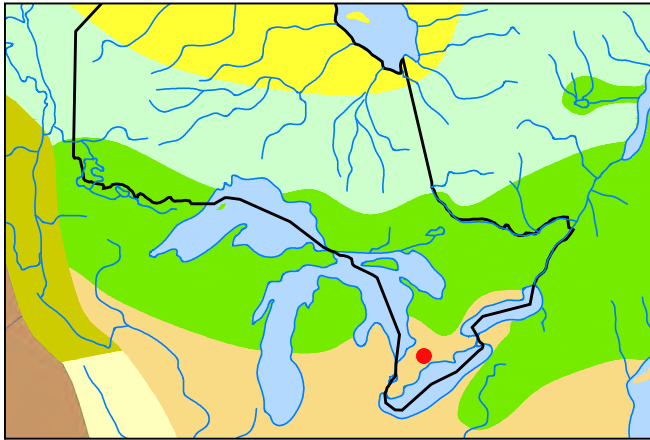
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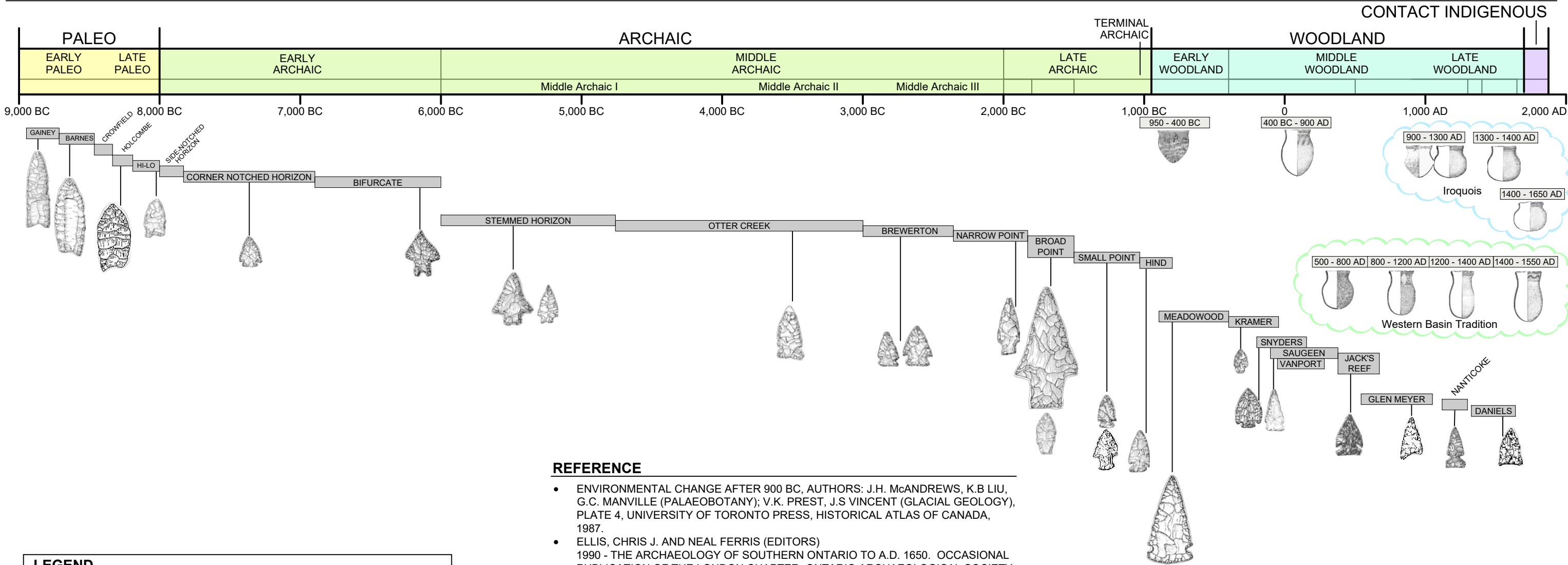
9,000 BC



5,000 BC



1,000 AD



REFERENCE

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LEGEND

- PROJECT AREA
- VEGETATION COVERAGE:
- | | |
|---------------------------------|---------------------|
| Tundra | Deciduous Woodlands |
| Boreal Forest | Grassland |
| Great Lakes-St. Lawrence Forest | Lichen Woodland |
| Deciduous Forest | Parkland |

PROJECT			
STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OXFORD AND GIDEON INTERSECTION IMPROVEMENTS LONDON, ONTARIO			
TITLE			
PRE-CONTACT INDIGENOUS CULTURE HISTORY OF MIDDLESEX COUNTY			
PROJECT No. 20391051		FILE No. 20391051-2000-R01002	
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GOLDER MEMBER OF WSP		MAP 2	



LEGEND

— APPROXIMATE STUDY AREA

REFERENCE

DRAWING BASED ON

Delaware Township Patent Plan
n.d. Delaware Township Patent Plan.

NOTES

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PROJECT

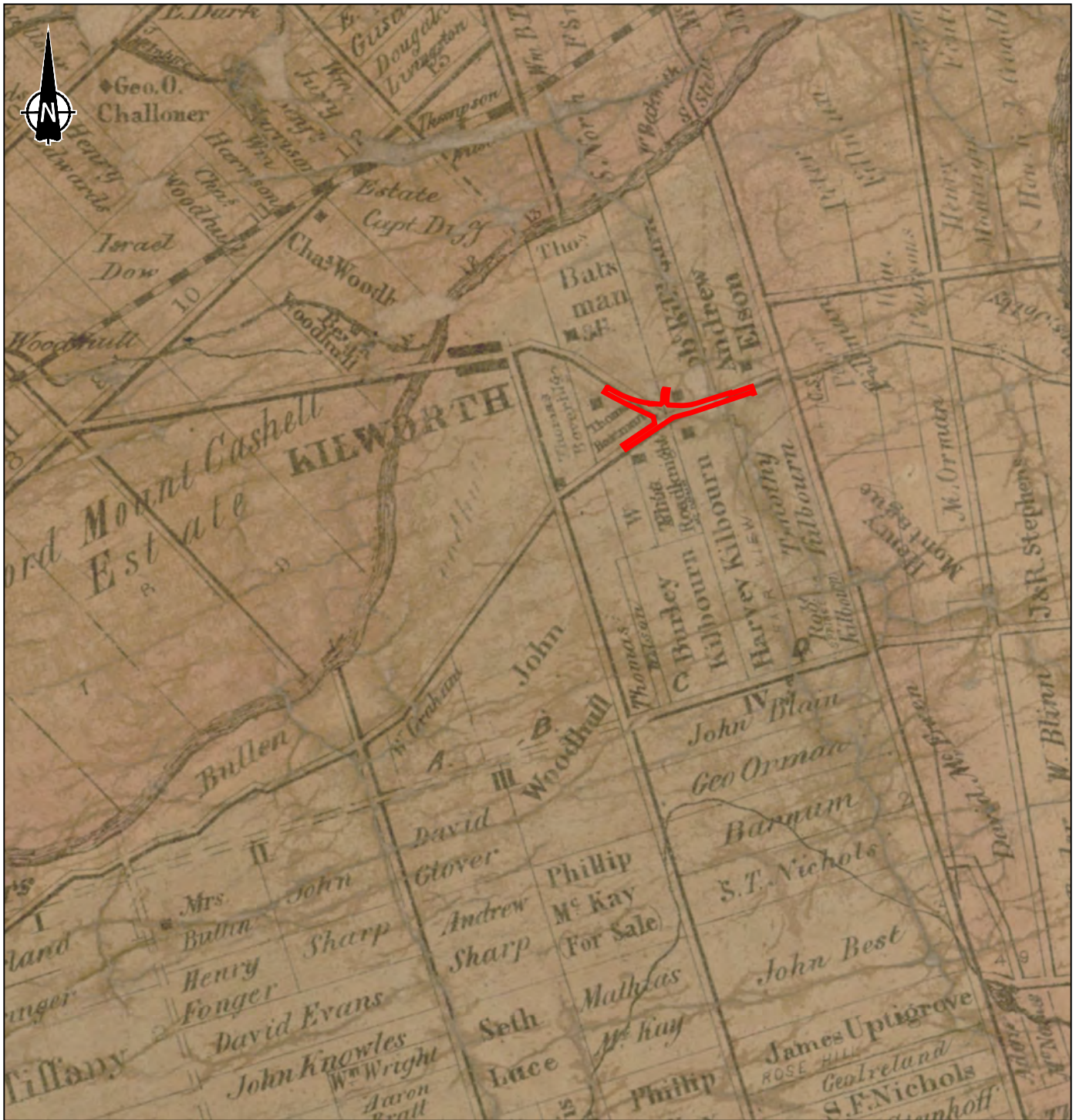
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OXFORD AND GIDEON INTERSECTION IMPROVEMENTS
LONDON, ONTARIO

TITLE

**A PORTION OF THE PATENT PLAN OF
DELAWARE TOWNSHIP**



PROJECT No.		20391051	FILE N:20391051-2000-R01003	
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LEGEND

— APPROXIMATE STUDY AREA

REFERENCE

DRAWING BASED ON

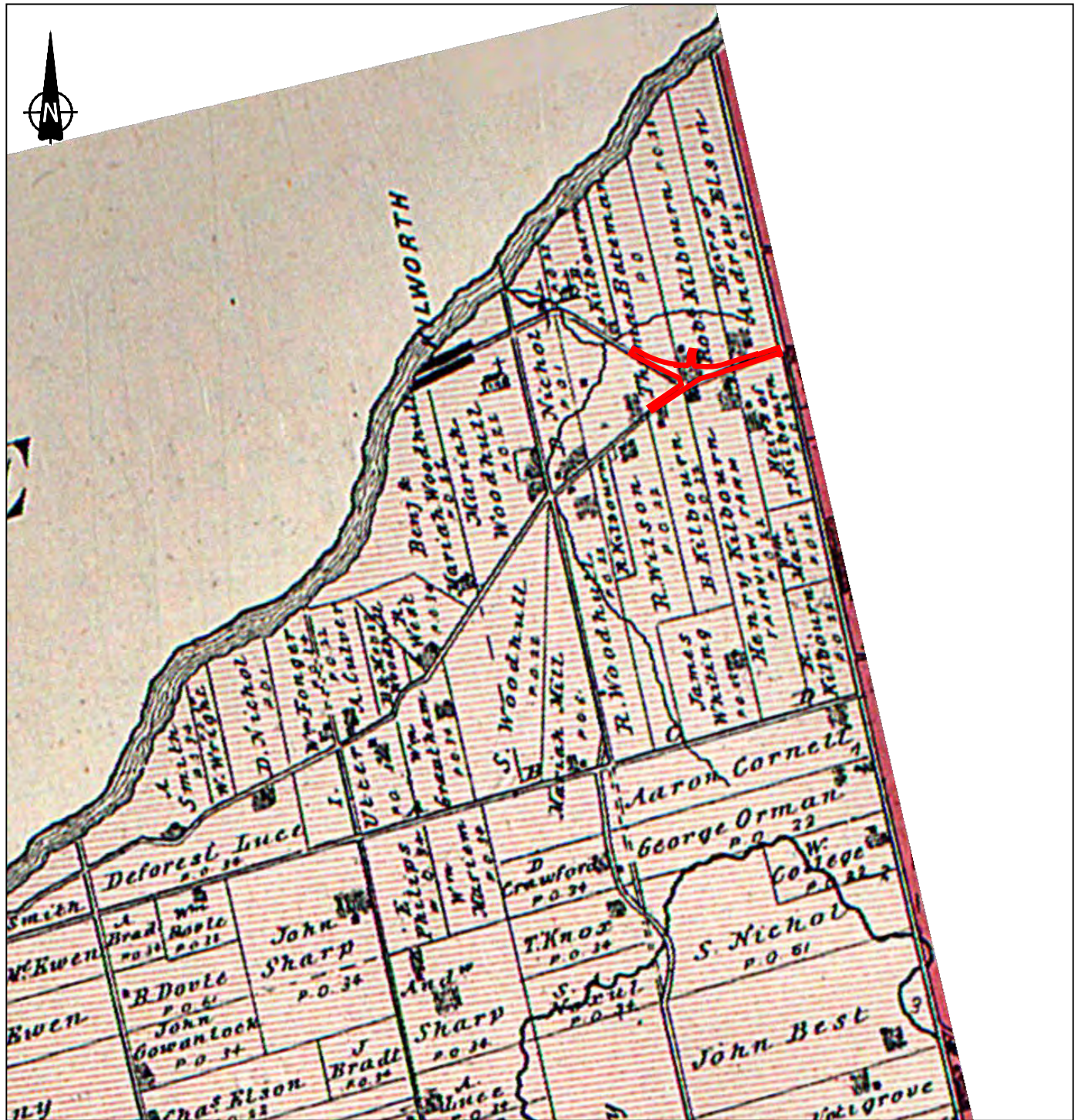
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1862 Tremaine's Map of the County of Middlesex, Canada
West. Geo. R and G.M. Tremaine, Toronto.

NOTES

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IN CONJUNCTION WITH ACCOMPANYING TEXT.
ALL LOCATIONS ARE APPROXIMATE.

PROJECT				STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OXFORD AND GIDEON INTERSECTION IMPROVEMENTS LONDON, ONTARIO			
TITLE				A PORTION OF TREMAINE'S 1862 MAP OF MIDDLESEX COUNTY			
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						REV.	
						MAP 4	





LEGEND

— APPROXIMATE STUDY AREA

REFERENCE

DRAWING BASED ON

Page, H. R. and Co.
1878 Illustrated Historical Atlas of the County of Middlesex,
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1972, Edward Phelps Publishing, Sarnia.]

NOTES

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IN CONJUNCTION WITH ACCOMPANYING TEXT.

ALL LOCATIONS ARE APPROXIMATE.

PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
OXFORD AND GIDEON INTERSECTION IMPROVEMENTS
LONDON, ONTARIO

TITLE

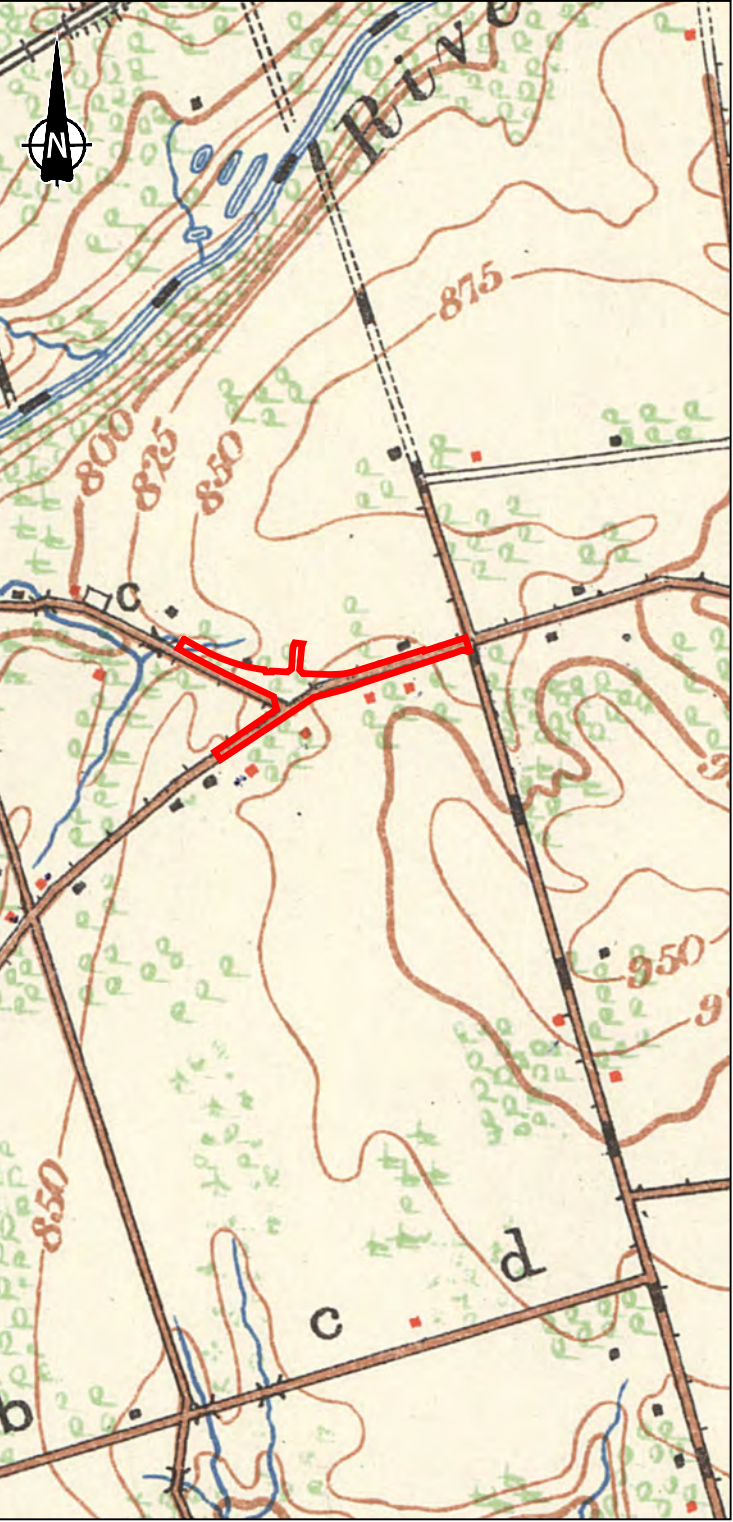
**A PORTION OF THE 1878 ILLUSTRATED
HISTORICAL ATLAS OF MIDDLESEX COUNTY**



PROJECT No.		20391051	FILE: N20391051-2000-R01005	
CADD	AM	Dec 7/21	SCALE	NTS
CHECK	LCM	Jan 7/22	REV.	
MAP 5				

Client: RV Anderson and Associates Limited
Original Format is Tabloid 279mm x 432mm
25mm
0
Dec 07, 2021 - 12:29pm
Drawing file: 20391051-2000-R01006.dwg

1913



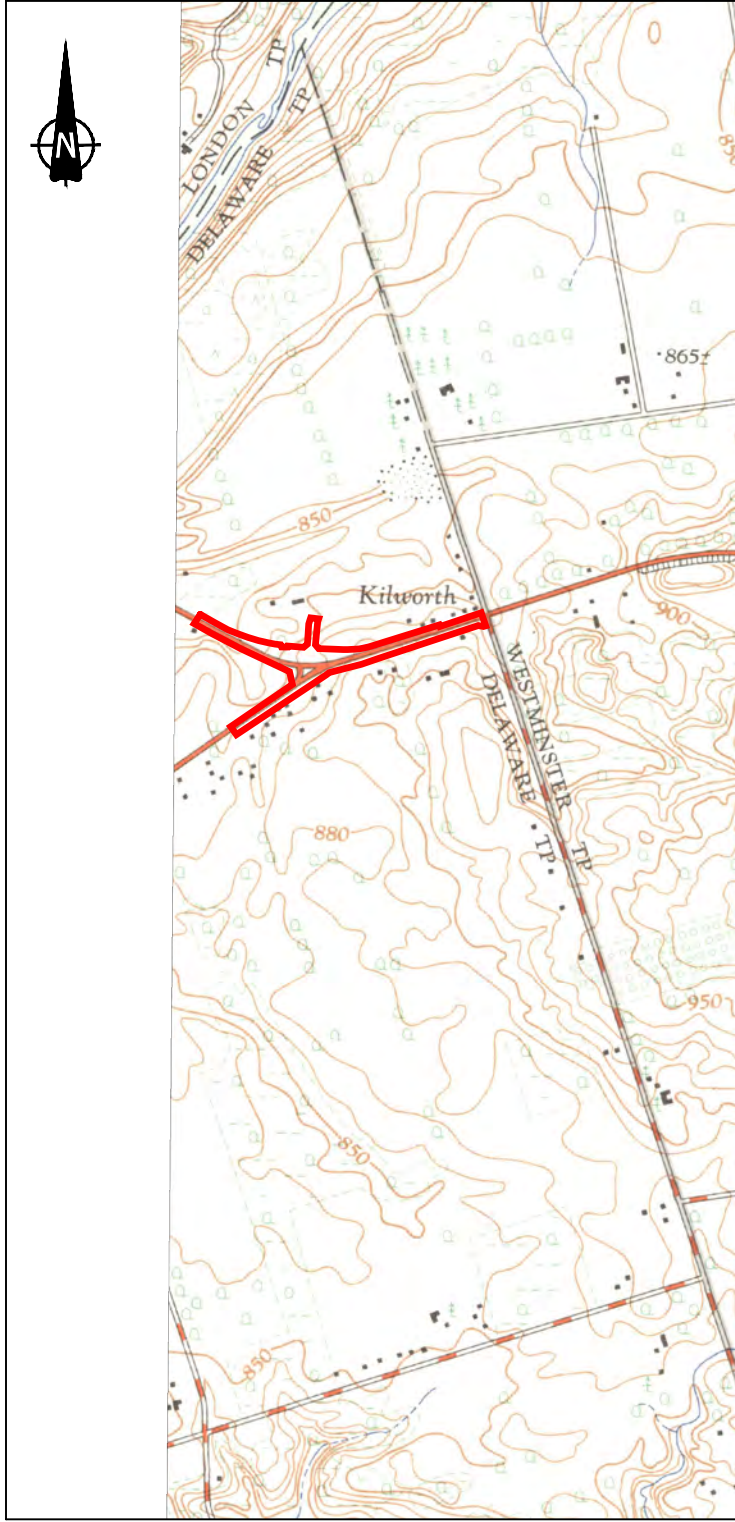
1946



1955



1962



LEGEND

— APPROXIMATE STUDY AREA

REFERENCE

DRAWING BASED ON

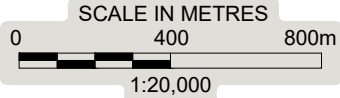
Department of Militia and Defense
1913 Ontario, St. Thomas Sheet No. 37.

Department of Mines and Technical Surveys
1962 Lambeth, Middlesex County, Ontario, Sheet 40I/14f. Ottawa

Aerial photos (1946, 1955) from Western University's online library:
<https://www.lib.uwo.ca/madgic/airphotos.html#urban>
<https://westernu.maps.arcgis.com/apps/webappviewer/index.html?id=4efcf860833a4bd09263d7505c4386c1>

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ
IN CONJUNCTION WITH ACCOMPANYING TEXT.
ALL LOCATIONS ARE APPROXIMATE.



PROJECT
STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
OXFORD AND GIDEON INTERSECTION IMPROVEMENTS
LONDON, ONTARIO

TITLE
**20th CENTURY HISTORICAL MAPS
AND AERIAL PHOTOGRAPHS**

 GOLDER MEMBER OF WSP	PROJECT No. 20391051		FILE No. 20391051-2000-R01006
			SCALE AS SHOWN REV. 0
	CADD	AM Dec 7/21	MAP 6
	CHECK	LCM Jan 7/22	

Drawing file: 20391051-2000-R01007.dwg Dec 08, 2021 - 9:54am 25mm Original Format is Tabloid 279mm x 432mm Client: RV Anderson and Associates Limited



LEGEND

- STUDY AREA
- RECOMMENDED FOR STAGE 2 TEST PIT SURVEY
- PREVIOUSLY DISTURBED; NO FURTHER ASSESSMENT REQUIRED
- 1 PHOTOGRAPH LOCATION, VIEWING DIRECTION, AND PLATE NUMBER

REFERENCE

DRAWING BASED ON MNR LIO, OBTAINED 2021 PRODUCED BY GOLDER ASSOCIATES LTD UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2021; CITY OF LONDON OPEN DATA SET, 2019; AND CANMAP STREETFILES V2008.4.

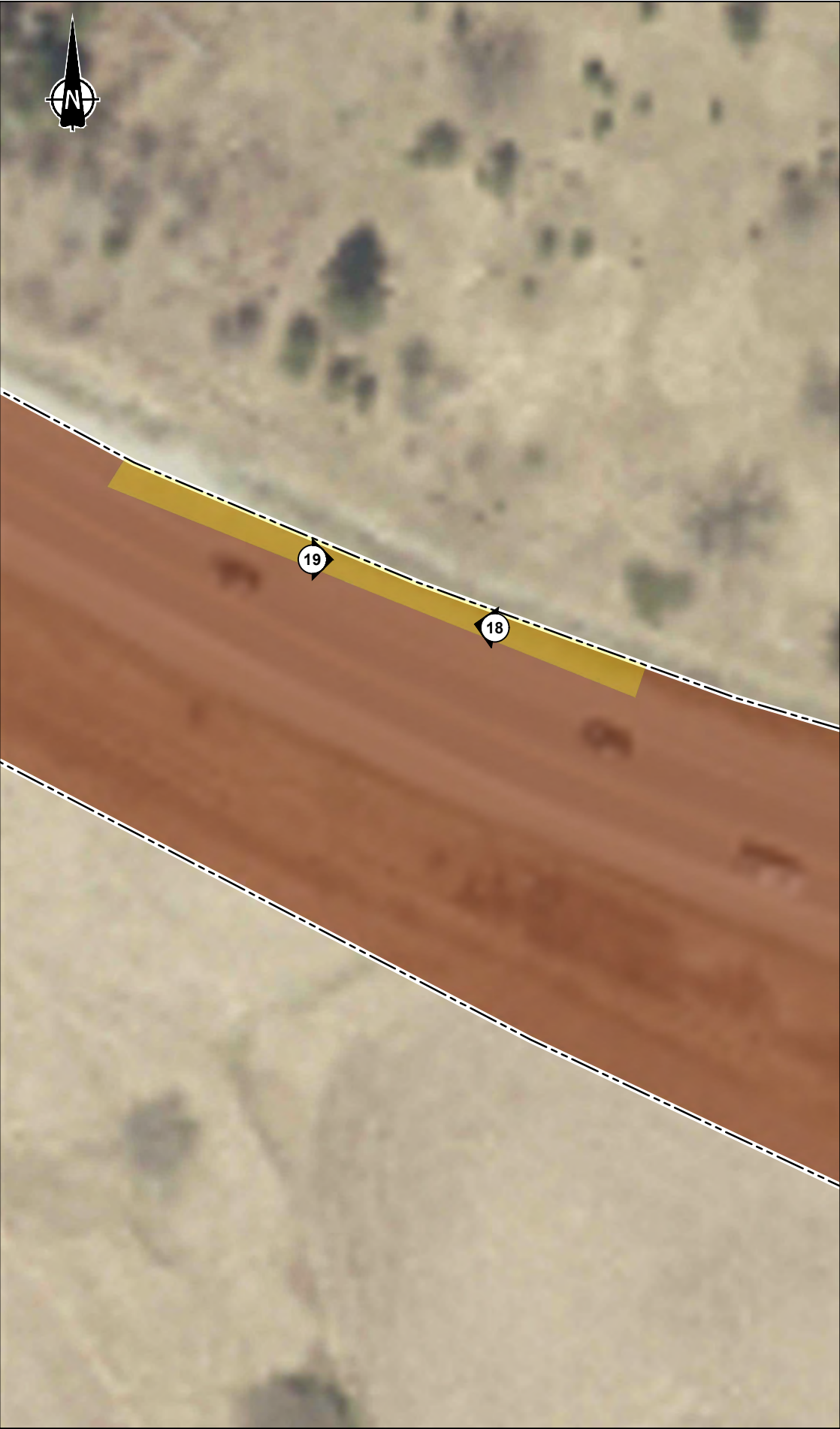
NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.
ALL LOCATIONS ARE APPROXIMATE.

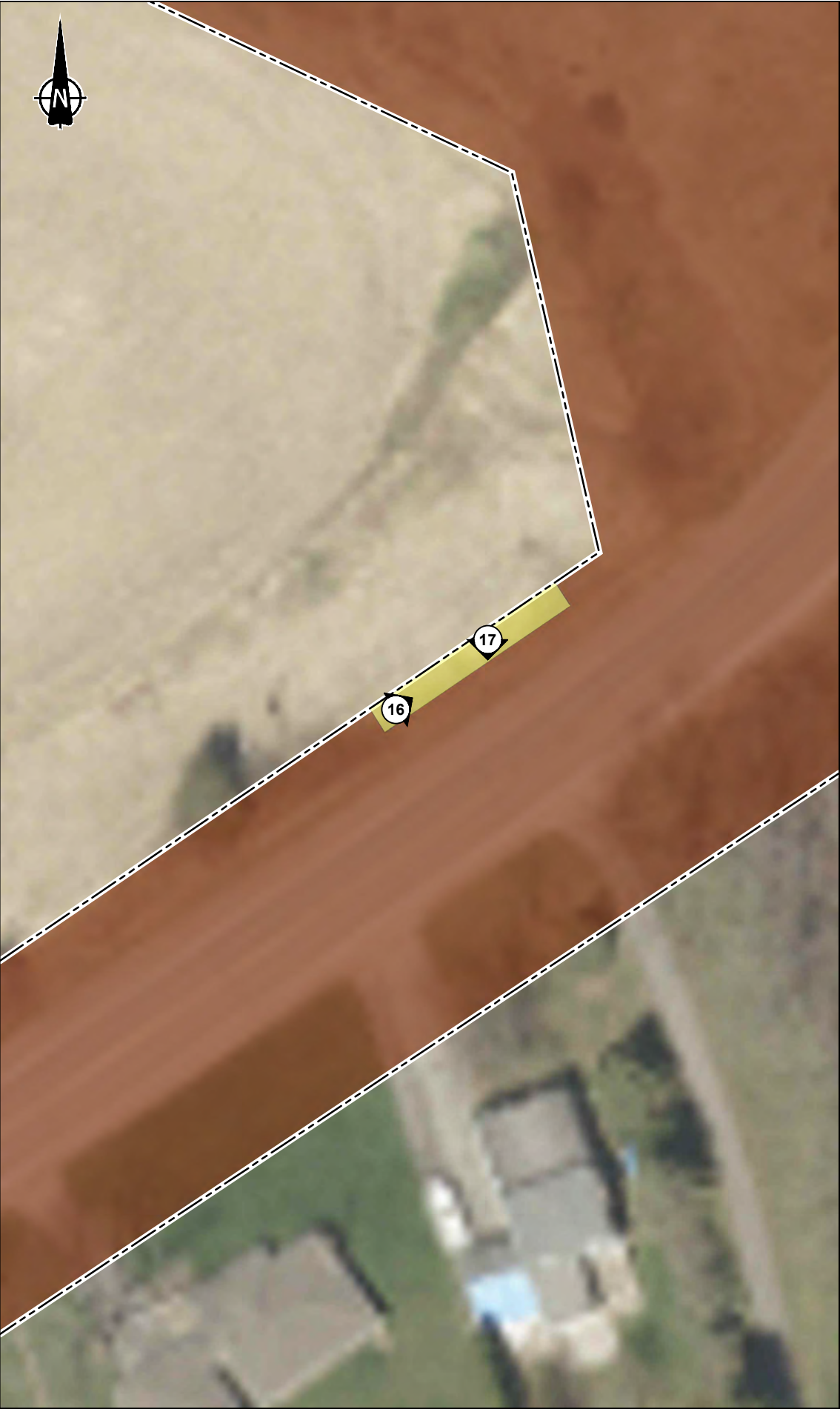
PROJECT										STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT OXFORD AND GIDEON INTERSECTION IMPROVEMENTS LONDON, ONTARIO																	
TITLE																											
STAGE 1 RESULTS																											
 GOLDER MEMBER OF WSP										PROJECT No.					20391051					FILE No 20391051-2000-R01007							
																						SCALE		AS SHOWN		REV.	
										CADD		AM				Dec 6/21											
										CHECK		LCM				Jan 7/22											
MAP 7																											

Drawing file: 20391051-2000-R01008.dwg Dec 08, 2021 - 9:52am 25mm Original Format is Tabloid 279mm x 432mm Client: RV Anderson and Associates Limited

TEST PIT AREA 1



TEST PIT AREA 2



LEGEND

- STUDY AREA
- TEST PIT SURVEY AT 5m INTERVALS;
NO FURTHER WORK RECOMMENDED
- PREVIOUSLY DISTURBED; NO FURTHER
ASSESSMENT REQUIRED
- 1 PHOTOGRAPH LOCATION, VIEWING DIRECTION,
AND PLATE NUMBER

REFERENCE

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ALL LOCATIONS ARE APPROXIMATE.

PROJECT

STAGE 1 AND 2 ARCHAEOLOGICAL ASSESSMENT
OXFORD AND GIDEON INTERSECTION IMPROVEMENTS
LONDON, ONTARIO

TITLE

STAGE 2 METHODS AND RESULTS

PROJECT No.		20391051	FILE No20391051-2000-R01008	
CADD	AM	Dec 8/21	SCALE	AS SHOWN
CHECK	LCM	Jan 7/22	REV.	

MAP 8

11.0 CLOSURE

We trust that this report meets your current needs. If you have any questions, or if we may be of further assistance, please contact the undersigned.

Golder Associates Ltd.



Lafe Meichenheimer, M.A.
Staff Archaeologist



Michael Teal, M.A.
Associate, Senior Archaeologist

LCM/MT/ca

[https://golderassociates.sharepoint.com/sites/135599/project files/6 deliverables/ph 2000-arch/p1013-0008-2021_re_07jan2022.docx](https://golderassociates.sharepoint.com/sites/135599/project%20files/6%20deliverables/ph%202000-arch/p1013-0008-2021_re_07jan2022.docx)

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