ORIGINAL REPORT

Stage 2 Archaeological Assessment

Almonte Quarry Expansion, Part Lot 15, Concession 11, Huntley Township, Carleton County, Ontario

PIF Number: P350-0043-2019
Licensee: Ibrahim Noureddine (P350)

Submitted to:

Phil White
Thomas Cavanagh Construction Limited
9094 Cavanagh Road.
Ashton, Ontario, K0A 1B0

Submitted by:

Golder Associates Ltd.
1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7

+1 613 542 0029

1899975

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Distribution List

1 e-copy - Thomas Cavanagh Construction Limited

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Executive Summary

The Executive Summary highlights key points from the report only, for complete information and findings as well as limitations the reader should examine the complete report.

Golder Associates Ltd. was retained by Thomas Cavanagh Construction Limited to undertake a Stage 2 archaeological assessment for a proposed expansion to the existing Almonte Quarry located on Part of Lot 15, Concession 11, Geographic Township of Huntley, City of Ottawa, Ontario.

The objectives of this assessment were to determine whether the property contains archaeological resources requiring further assessment and to document these resources according to the requirements of the Ontario Ministry of Tourism, Culture and Sport (MTCS) *Standards and Guidelines for Consultant Archaeologists* (2011). The assessment was triggered by the *Aggregate Resource Act* which requires archaeological concerns to be address in connection with any licenses to open or expand an aggregate operation.

Based upon the existing data, the study area first became available for human occupation in the late Paleo-Indian Period or early in the Archaic Period (approximately 7,000 Before Present). Early Euro-Canadian settlement arrived in the area surrounding the Carp River Valley in 1819. The eastern part of the township was quickly settled but most of the lots in the Huntley Township remained largely rural through the nineteenth and most of the twentieth century. The 1863 Walling map does not list an owner for Lot 15, Concession 11 in Huntley Township. The 1879 Belden map lists C. Mahoney Sr. as the owner of the western half of Lot 15 but land registry records show the study property was not granted by the Crown until around 1886 to Bridget Mahoney. The western half of Lot 15 remained in the Mahoney family during the remainder of the 19th century. The documentary evidence, including the historic maps and census records, do not indicate any settlement, structures or activity within study area during the nineteenth century. Attributes identifying archaeological potential within the study area according to the Stage 1 assessment were the proximity of the seasonal wetland and historic transportation route (present day March Road).

Stage 2 fieldwork was conducted on the subject property between July 15-17, 2019. The study area was comprised primarily of undisturbed woodlots, some permanently wet conditions, shallow areas of exposed bedrock, and disturbance from activities related to the adjacent quarry including grading and rock piles. The property consisted of three distinct areas which were separated by extensive disturbance and identified as operations which were investigated by shovel test survey.

No archaeological resources were identified during the Stage 2 assessment and therefore this investigation has provided the basis for the following recommendations (Map 7):

1) No further archaeological investigation is required within the Stage 2 assessment property as depicted on Maps 2 and 7, and as a consequence that the MTCS issue a letter concurring that no additional archaeological investigations are required for this area.

This report is submitted to the MTCS 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 the licensed consultant archaeologist has met the terms and conditions of their archaeological license, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

The MTCS is requested to review, and provide a letter indicating their satisfaction with the results and recommendations presented herein, with regard to the 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences, and to enter this report into the Ontario Public Register of Archaeological Reports.

Project Personnel

Client Contact	Phil White, Thomas Cavanagh Construction Limited
Project Director	Kris Marentette (M.Sc., P.Geo.)
Senior Review	Bradley Drouin, M.A. (P311)
Project Manager	Jaime Oxtobee (M.Sc., P.Geo.)
Licensed Archaeologist	Ibrahim Noureddine, PhD (P350)
Field Crew	Ibrahim Noureddine
	JoAnne Bisson
	Sarah News
	Aaron Andringa
	Shawn Bayes
	Megan Kirkham
Report Preparation	Erin Rangecroft, M.A. (P366)
Geographic Imaging	Bojan Radojevic, B.A.
Administrative Support	Courtney Adey

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1.0 PROJECT CONTEXT

1.1 Development Context

Golder Associates Ltd. (Golder) was retained by Thomas Cavanagh Construction Limited (Cavanagh) to undertake a Stage 2 archaeological assessment for a proposed expansion to the Almonte Quarry, measuring 48 acres (19.5 hectares) in size, on Part of Lot 15, Concession 11, Geographic Township of Huntley, Carleton County, Ontario. The proposed license boundary for the expansion area (same as Stage 1 study area) is shown on Maps 1 and 2. The study area is located at 4078 March Road, near the intersection of March Road and Upper Dwyer Hill Road, City of Ottawa, Ontario.

The assessment was triggered by the *Aggregate Resource Act* which requires archaeological concerns to be address in connection with any licenses to open or expand an aggregate operation. Aggregate Resource Policy 2.01.08 (March 15, 2006) requires archaeological assessments to be completed for the whole property, not just the areas of extraction if the property has archaeological potential

This study included the review of available archaeological and environmental literature relevant to the property, consultation with the Ministry of Tourism, Culture and Sport's (MTCS) database of registered archaeological sites, as well as a review of primary historic documentation including land abstract records, census documentation, aerial photographs and historic maps.

1.2 Objectives

The objectives of a Stage 2 investigation are based on principles outlined in the *Ontario Heritage Act* (consolidated 2007) and the Ontario MTCS *Standards and Guidelines for Consultant Archaeologists* (2011). More specifically, this Stage 2 Archaeological Assessment was completed with the following objectives:

- to document all archaeological resources on the property;
- to determine whether the property contains archaeological resources requiring further assessment; and,
- to recommend appropriate strategies for Stage 3 strategies for archaeological sites identified (if any).

1.3 Historic Context

1.3.1 Pre-Contact Indigenous History

Human occupation of southern Ontario dates back approximately 12,000 years before present (BP). These first peoples, known as Paleo-Indians (Paleo), moved into Ontario as the last of the glaciers retreated northward. The former shores of vast glacial lakes such as Lake Algonquin, in the area that is now southern Georgian Bay, and along the north shore of present-day Lake Ontario, have provided evidence of their presence. Isolated finds of the distinctive, parallel-flaked Paleo spear points have been recorded in the Rideau Lakes and north of Kingston (Watson 1982; Heritage Quest Inc. 2000). Although there is limited information on the lifestyle of the Paleo Peoples, what little evidence that is available suggests that they were highly mobile hunters and gatherers relying on caribou, small game, fish and wild plants found in the sub-arctic environment.

The Ottawa Valley remained very much on the fringe of occupation at this time. The ridges and old shorelines of the Champlain Sea and early Ottawa River channels are the areas most likely to contain evidence of Paleo occupation in this region. Isolated finds of fluted points (laurel leaf shaped points with a channel flake scar extending from the base of the point) have been recorded in the Rideau Lakes area (Watson 1982) and Kingston (Heritage Quest Inc. 2000). Kinickinick Heritage Consulting has found what they believe to be Paleo material near Greenbank Road (Kinickinick Heritage 2003) and possibly at Albion Road and Rideau Road (Kinickinick Heritage 2004).

It was not until the succeeding Archaic Period (ca. 9,000 to 3,000 BP), that the environment of southern Ontario approached modern conditions. While more land became available for occupation as the glacial lakes drained, Archaic populations continued as hunter-gatherers; however, they appear to have focused more on local food resources, abandoning the highly mobile lifestyle of their predecessors. Although the capable Paleo peoples workmanship of stone tools was lost, the Archaic Period tool kit became more diversified, reflecting the change to a temperate forest environment. Ground stone tools such as adzes and gouges first appeared and may indicate the construction of dug-out canoes or other heavy wood working activities. Extensive trade networks had developed by the middle to late Archaic Period. Items such as copper from the north shore of Lake Superior were exchanged during this time.

The first significant evidence for occupation in the Ottawa Valley appears at this time. An Early Archaic Dovetail Point was recovered 100 years ago in Ottawa south (Pilon & Fox 2015). Archaic sites have been identified on Allumettes and Morrison Islands on the Ottawa River near Pembroke, and within the boundaries of Leamy Lake Park within the City of Gatineau (Pilon 1999: 43-53, 64). Late Archaic sites have also been identified to the west in the Rideau Lakes, and the east at Jessup Falls and Pendleton along the South Nation River (Daechsel 1980). A few other poorly documented finds of Archaic artifacts have been made within the City limits (Jamieson 1989). Sites at Honey Gables and at Albion Road and Rideau Road have been documented and appear to contain Early Archaic material (Kinickinick Heritage 2004).

The Woodland Period (ca. 3,000 to 400 BP) is distinguished by the introduction of ceramics. Early Woodland groups continued to live as hunters, gatherers and fishers in much the same way as earlier populations had done. They also shared an elaborate burial ceremonialism evidenced by the inclusion of exotic artifacts within graves (Spence et al. 1990: 129). Extensive trade networks continued through the early part of this period and Early Woodland populations in Ontario appear to have been heavily influenced by groups to the south, particularly the Adena people of the Ohio Valley. By 1,700 BP, the trade networks had reached their peak and covered much of North America.

Through the Middle Woodland Period (ca. 2,400 to 1,100 BP) there was an increase in the decorative styles found on ceramic pots and changes in the shapes and types of tools used. For the first time, it is possible to identify regional cultural traditions within the province, with “Point Peninsula” being the distinctive variant found in eastern and south-central Ontario. A greater number of known sites from this period have allowed archaeologists to develop a better picture of the seasonal round followed in order to exploit a variety of resources within a home territory. Through the late-fall and winter, small groups would occupy an inland “family” hunting area. In the spring, these dispersed families would congregate at specific lakeshore sites to fish, hunt in the surrounding forest, and socialize. This gathering would last through to the late-summer when large quantities of food would be stored for the approaching winter. The proliferation of sites suggests an increase in the population of eastern Ontario, although the Ottawa area has yet to yield as many sites as other parts of south-eastern Ontario. Middle Woodland sites have been noted in the South Nation Drainage Basin and along the Ottawa River including the northwest end of Ottawa at Marshall’s and Sawdust Bay (Daechsel 1980; Daechsel 1981), as well as at Leamy Lake and along the Rideau River.

Another significant development of the Woodland Period was the appearance of domesticated plants ca. 1,450 BP. Initially only a minor addition to the diet, the cultivation of corn, beans, squash, sunflowers and tobacco gained economic importance for Late Woodland peoples. Along with this shift in subsistence, settlements located adjacent to the corn fields began to take on greater permanency as sites with easily tillable farmland became more important. Eventually, semi-permanent and permanent villages were built, many of which were surrounded by palisades, evidence of growing hostilities between neighbouring groups. By the end of the Late Woodland Period, distinct regional populations occupied specific areas of southern Ontario separated by vast stretches of largely unoccupied land, including the Huron along the north shore of Lake Ontario, and the St. Lawrence Iroquois along the St. Lawrence River.

While there is clear evidence of these latter developments in much of southern Ontario, the Ottawa Valley remained a sparsely occupied region utilized by mobile hunter-gatherers. In part, this was because the terrain was less than suitable for early agriculture. It was also a reflection of the increased pressure on hunting territories and conflict over trade routes at the end of the Woodland Period. Facing persistent hostilities with Iroquoian populations based in what is now New York State, the Huron moved from their traditional lands on the north shore of Lake Ontario to the Lake Simcoe and Georgian Bay region. Algonquin groups, who had occupied the lands north of the Huron, also appear to have retreated further northward in order to place greater distance between themselves and the Iroquois.

Woodland sites have been recorded throughout the Ottawa Valley. A site with artifacts ranging from the Late Archaic to the Late Woodland was documented on the shores of the Rideau River (Fisher Archaeological Consulting 2010). Two small Late Woodland sites were also identified on a property near the Village of Cumberland (Ferris 2002). A significant Woodland occupation has been identified at the Leamy Lake site (Pilon 1999: 76-80). Finally, an ossuary burial identified near the Chaudière Falls in the 1840s, dates to this period.

Although ossuaries are a burial practice normally associated with Iroquoian speaking populations, especially the Huron, this internment may have been Algonquin. Once again, a number of poorly documented Woodland find spots are known for the general project area (Jamieson 1989).

1.3.2 Post-Contact Historic Euro-Canadian

Samuel de Champlain was the first European to document his explorations of the Ottawa Valley, initially in 1613 and again in 1615. He was preceded; however, by two of his emissaries, Etienne Brule around 1610 and Nicholas de Vigneau in 1611. It is likely that all three travelled at least the lower reaches of the Rideau River.

In the wake of Champlain's voyages, the Ottawa River became the principal route for explorers, missionaries and fur traders travelling from the St. Lawrence to the interior, and throughout the seventeenth and eighteenth centuries this route remained an important link in the French fur trade.

At the time of initial contact, the French documented three Algonquin groups residing in the vicinity of the project area (Heidenreich & Wright 1987: Plate 18). These included the Matouweskarini along the Madawaska River to the west, the Onontchataronon in the Gananoque River basin to the southwest, and the Weskarini, the largest of the three, situated in the Petite Nation River basin. While prolonged occupation of the region may have been avoided as a result of hostilities with Iroquoian speaking populations to the south, at least the northern reaches of the South Nation River basin were undoubtedly used as hunting territories by the Algonquin at this time.

The recovery of European trade goods (i.e., iron axes, copper kettle pieces and glass beads) from aboriginal sites throughout the Ottawa River drainage basin has provided evidence of the extent of contact between aboriginals and the fur traders during this period. The English, upon assuming possession of New France, continued to use the Ottawa River as an important transportation corridor.

Significant European settlement of the region did not occur until United Empire Loyalists and other immigrants began to move to lands along the Ottawa River in the late eighteenth and early nineteenth centuries. The need for land on which to settle the Loyalists led the British government into hasty negotiations with their indigenous military allies, the Mississauga, who were assumed, erroneously, to be the only Aboriginal peoples inhabiting eastern Ontario. Captain William Redford Crawford, who enjoyed the trust of the Mississauga chiefs living in the Bay of Quinte region, negotiated on behalf of the British government. In the so-called “Crawford Purchase,” the Mississauga were persuaded into giving up Aboriginal title to most of eastern Ontario, including what would become the counties of Stormont, Dundas, Glengarry, Prescott, Russell, Leeds, Grenville and Prince Edward, as well as the front Townships of Frontenac, Lennox, Addington and Hastings and much of what is now the City of Ottawa (including the Geographic Townships of Gloucester, Nepean, Osgoode, Marlborough and North Gower) (Lockwood 1996: 24). In 1793, after the Province of Quebec was divided into Upper and Lower Canada (in 1791), John Stegmann, the Deputy Surveyor for the Province of Upper Canada, undertook an initial survey of four Townships (Nepean, Gloucester, North Gower and Osgoode) on both sides of the Rideau River near its junction with the Ottawa River.

Commonly acknowledged as the first permanent European resident in the Ottawa area, Philemon Wright settled in Hull Township with five families and 33 men in 1800 (Bond 1984: 24). The community along the north shore of the Ottawa River grew over the next few years and by 1805 Wright had begun significant lumbering activity in the region.

The scarcity of roads and poor state of transportation beyond the Ottawa River shoreline slowed settlement in many parts of the Ottawa Valley (Belden 1879); although with the construction of the Rideau Canal (1827 - 1832) the new settlement of Bytown experienced its first major growth in population. This resulted in the development of two areas: Lower Bytown east of the Canal, primarily populated by French Canadian and Irish labourers and merchants, and Upper Bytown to the west with a predominantly white Anglo-Saxon Protestant population. Bytown was incorporated as the City of Ottawa on January 1, 1855, with a population of 10,000. The selection of Ottawa as the capital of Canada in 1857 was the major catalyst in the subsequent development of the city.

1.3.2.1 Huntley Township History

There are several accounts on the early settlement of Huntley Township, including Belden’s *Illustrated Historical Atlas of Carleton County* (Belden 1879), *Beginnings, A Brief History of Huntley Township: 1819-1930* (Huntley Township Historical Society 2001), *Carleton Saga* (Walker and Walker 1968) and *The Origins and Early History of Carp Village* (Elliott 2003).

In 1818, Huntley Township was surveyed, and the first settlers arrived to settle the area surrounding the Carp River Valley in 1819. The first road in Huntley Township, the Third Line, was laid out in 1820 by Henry McBride and Denis Cavanaugh, Township Road Commissioners and was the main road from Pakenham via Carp and Stitt’s Corner south to Richmond and on to Kemptville by mid-century (Elliott 2003: 5).

In the early 1820s, the first major influx of Protestant Irish settlers arrived in the township from the counties of Tipperary, Cavan, Fermanagh and Tyrone. They settled along the Third Line, forming the nucleus of the hamlet of Huntley (HTHS 2018). In the later 1820s, Irish Catholic families, mainly from County Cork, settled around the Old Almonte Road and Corkery Road (Ninth Line Huntley) where the hamlets of Manion Corners, Powell and Clandeboye developed (HTHS 2018).

The eastern part of Huntley was settled quickly with the main business centre located along the Third Line at a junction that was sometimes called Huntley Corners. At Huntley Corners, Arthur Hopper opened a store in 1836 in which the Huntley Post Office began operating in 1837 (Walker & Walker 1968: 441). In 1838, Christ Church (Anglican) was built diagonally across the road from Hopper’s store and a school was erected beside it at some point (Elliott 2003: 5-6). In 1842 the Presbyterians built a log church on the northeast corner of the junction.

By 1851, Huntley Corners also boasted a tavern, two blacksmiths, a shoemaker and tannery (Elliott 2003: 7). Much of the western part of Huntley was supplied by the Village of Almonte, with the closest post office (Powell) located three miles east of the village. The Powell post office was also marked as the site of a hotel and store (Belden 1879: 42; Walling 1863). By 1841, roads had been extended east from Almonte through Huntley Township to March Township (LAC NMC 17853).

By the 1861 census, Carp had grown to include three inns, three blacksmiths, four merchants, a shoemaker, a harness maker, a wagon maker and a tailor. All of the buildings were log – except for a frame store and the blacksmith's frame house (Walker & Walker 1968: 453). By 1879, Carp had two telegraph offices, two hotels, four general stores, a steam grist and flouring mill, a cabinet shop, a carriage shop, two blacksmith shops, two harness shops, a tin and stove store, two shoe shops, a tailor shop, three milliner shops, two butcher shops, a bakery, a cheese factory, brick town hall, Orange Hall, and a school (Belden 1879: xlii).

J.R. Booth's Ottawa, Arnprior, and Parry Sound Railway (O.A. & P.S.) was the first railway constructed through the township. In 1892, land to the southwest of Carp was purchased for tracks and the first passenger train arrived in 1893. The O.A. & P.S. was merged into Booth's Canada Atlantic Railway in 1895 and then into the Grand Trunk Railway in 1905 (Elliott 2003: 43).

In 1974, Huntley Township was amalgamated with Torbolton and Fitzroy Townships to form West Carleton Township and later became part of the expanded City of Ottawa in 2001 (HTHS 2018).

1.3.2.2 Property History

Historic maps (Map 3) and aerial photographs (Map 4) provide property specific information for the study area. Most of the lots in the Huntley Township remained largely rural through the nineteenth and most of the twentieth century.

The 1863 Walling map illustrates a road from Almonte to Carp running along the northwest side of Lot 15, Concession 11, in Huntley Township. No occupants are listed, or structures are shown on Lot 15 in the 1863 Walling map. The 1879 Belden map lists a C. Mahoney Sr. as the owner of Lot 15, Concession 11 but no structures are shown indicating that no one was living on Lot 15. Mr. Mahoney Sr. was listed as an Irish farmer/post master and may have lived on the southwestern 50 acres of Lot 18, Concession 11 in a structure labeled as Post Office/Hotel. There is a discrepancy with the 1879 Belden map and the land registry records which lists the Crown patent for the west half (100 acres) to a Bridget Mahoney in 1884 or 1886 (I-3939). Neither C. Mahoney and Bridget Mahoney are listed in the 1871, 1881 or 1891 census returns, indicating that they may have been absentee owners. In 1902, Bridget Mahoney sold the western half of Lot 15 to Lawrence McGrath.

The lot was subsequently purchased by several different owners over the 20th century. In 1971, Cavanagh purchased the western half of Lot 15 (I-145351).

1.4 Archaeological Context

1.4.1 Study Area Environment

The study area is situated near the western edge of the Smith Falls Limestone Plain physiographic region which consists of a level plain with generally shallow soils over limestone bedrock belonging to the Ottawa Formation. Some relief is provided by low ledges and shallow valleys in the rock with more faulting and clay deposits associated with the portion of the plain north of Carleton Place (Chapman & Putnam 1984: 196-197). The surficial geology is flat lying limestone plain consisting of dolomite, sandstone and shale with outcrops (Chapman & Putnam 1984). The rock is composed predominantly of grey, fossiliferous, bioclastic, fine to medium grained limestone with dark grey and black shaly partings. This limestone was used as a building stone in the past but presently is quarried only for crushed stone (Hill et al.1974).

The study area lies within the Ottawa Valley Clay Plains (Chapman & Putnam 1984: 205-208), a physiographic region spanning from Pembroke to Hawkesbury. The clay plains are interrupted by ridges of sand or rock and east of the City of Ottawa, the clay is finer textured than the plains to the west. The study area contains Farmington Loam soils which consists of thin soils over limestone bedrock, with large areas of bare rock. These soils have been identified as gently undulating, with stoniness ranging from moderately stony to exceedingly stony. The irregularity of the exposed bedrock and the shallowness of the loam (less than 30.5 centimetres (cm) thick) make the thin soils problematic for most farming practices. Farmington Loam has moderate to excessive drainage and is best suited for periodical pasture or forestry use (Hoffman, Miller & Wicklund 1967: 25).

The study area lies between the Middle Ottawa and Upper St. Lawrence sub-regions of the Great Lakes-St. Lawrence Forest Region, characterized by mixed coniferous and deciduous tree species. The upland forest of the Middle Ottawa is comprised of sugar maple, beech, yellow birch, red maple and eastern hemlock, almost always accompanied by eastern white and red pine. There are smaller amounts of white spruce, balsam fir, trembling aspen, white birch, red oak, and basswood present throughout the sub-region. Hardwood are common and mixed wood swamps with eastern white cedar, tamarack, black spruce, black ash, red maple and elm thrive. Much less common are butternut, bitternut hickory, burr oak, white ash and black cherry (Rowe 1972: 100-105).

The Ottawa River is located approximately 23 kilometres (km) to the northeast and the Mississippi River which runs through Almonte, Ontario is approximately 6 km to the southwest of the study area. There are several small creeks located more than 300 metres (m) to the north and south of the study area.

1.4.2 Previous Archaeology

Archaeological Assessments from the MTCS's Archaeological Sites Database (ASDB) were retrieved on August 2, 2019. Past Recovery Archaeological Services (Earl, 2014) conducted a Stage 1 archaeological assessment of the Burnt Lands Provincial Park. The southern portion of the Burnt Lands Provincial Park study area was located to the west, on Part Lot 15, Concession 12, Huntley Township, less than 100 m from the current study area. A Stage 2 investigation was recommended prior to any proposed development. The current study area does not contain the same characteristics that indicate archaeological potential in the Burnt Lands Provincial Park report. The Burnt Lands Provincial Park recommendations were based on the presence of glaciofluvial deposits relating to a past shoreline of the Champlain Sea, proximity to several watercourses, elevated topography and documentation of Euro-Canadian settlement.

A Stage 1 assessment of the subject property was conducted by Golder in 2018 (Golder 2018). The assessment determined Indigenous Precontact potential based on the existence of a wetland which cut across the property as well as historic archaeological potential due to the proximity of the historic corridor March Road. The following includes the list of recommendations:

1) *All undisturbed land in the study property, approximately 29 acres (11.8 hectares), should be archaeologically investigated with hand excavated test pits in five metre intervals to the depth of at least 5 centimetres into natural in situ subsoil.*

2) *No further archaeological investigation is required within the remaining disturbed land in the study area approximately 19 acres (7.7 hectares), as depicted on (Map 7) and as a consequence that the Ministry of Tourism, Culture, and Sport issue a letter concurring that no additional archaeological investigations are required for this area.*

A selection of archaeological assessments in Huntley Township are listed in Table 1.

Table 1: Selection of Previous Archaeological Assessment Studies in Huntley Township.

PIF#	Date	Title	Consultant
P328-021-2018	2018	Stage 1 Archaeological Assessment Almonte Quarry Expansion, Part Lot 15, Concession 11, Huntley Township, Carleton County, Ontario	Golder Associates
P111-0055-2017	2017	Stage 1 Archaeological Assessment 2113 – 2125 Carp Road Part Lot 2, Concession 3, Geographic Township of Huntley, Carleton County, Now City of Ottawa, Ontario	Past Recovery Archaeological Services
P369-0029-2014 P369-0027-2014	2015	Stage 1 - 2 Archaeological Assessment: 3019 Carp Road, Concession 3, Part Lot 11 Geographic Township of Huntley, City of Ottawa, Ontario	Paterson Group
P336-0034-2014	2014	Stage 1 Archaeological Assessment of Burnt Lands Provincial Park, Lots 14, 15, 16 & 17, Part Lots 19 & 20, Con 12, Geographic Township of Huntley, Carleton County, City of Ottawa & Lot 19 and Part Lots 20 & 21, Con 12, Geo Township of Ramsay, Town of Mississippi Mills, Lanark County, ON	Past Recovery Archaeological Services
P334-140-2011	2012	Stage 2 Archaeological Assessment (AA): West Carleton Environmental Centre within Parts of Lots 4 & 5, Con 3, Former Township of Huntley, Carleton County, City of Ottawa, ON	Archeoworks Inc.
P003-318-2011	2011	An Archaeological Assessment (Stage 1), Proposed Commercial Subdivisions, 3155 Carp Road (5R-8897), Parts 1, 2, & 3 RP, 5R-4255; Part 3, 4, & 5 RP 5R-11999' Parts 2-5, 11, 12), Part Lot 3, Con 12, Former Township of Huntley, City of Ottawa, On	Adams Heritage
P031-021-2011 P031-034-2011	2011	Stage 1, 2 and 3 Archaeological Assessments of the Proposed Badger Daylighting Services Carp Road Property, Part Lot 7, Con 2, Geographic Township of Huntley, City of Ottawa, ON	Past Recovery Archaeological Services
P003-282-2010	2010	Stage 1 AA, Karson Holdings, Part Lot 18, Con 3, Village of Carp, Geographic Township of Huntley, City of Ottawa	Adams Heritage
P003-209-2008	2008	Stage 1 & 2 Archaeological Assessment "Honeywell Estates" Subdivision Part Lot 18, Concession 2, Village of Carp. Geographic Township of Huntley, City of Ottawa	Adams Heritage
P039-069	2006	Stage 1-2 AA of Salisbury Street Subd. In Carp, Part of Lot 17, Con 2, Huntley Twp., City of Ottawa	Kinickinick Heritage Consultants
P039-01	2004	A Stage 1 & 2 Archaeological Assessment of a Proposed Residential Subdivision on Part Lots 7 & 8, Conc. 3, Huntley Township (Geo), City of Ottawa	Kinickinick Heritage Consultants
2002-046-017	2002	Stage 1 & 2 A.A. of a Proposed Subdiv. on Part of Lot 18, Con. 2, Huntley Twp. (Geo.), City of Ottawa	Kinickinick Heritage Consultants
2000-019-010, 2000-019-001	2000	A Stage 2 A.A. of a Proposed Aggregate Pit on the East Half of Lot 12, Con. 4, West Carleton (Huntley) Twp., RMOC	Kinickinick Heritage Consultants

1.4.3 Known Archaeological Sites

The primary source of information regarding known archaeological sites in the vicinity of the study area was the MTCS' archaeological site database. This database contains archaeological sites registered according to the Borden system. Under the Borden system, Canada is divided into grid blocks based on latitude and longitude. A Borden Block is approximately 13 km east to west and approximately 18.5 km north to south. Each Borden Block is referenced by a four-letter designator and sites within a block are numbered sequentially as they are found. The study area under review is located within the vicinity of Borden Block BhFx.

The database was consulted on August 2, 2019 for the assessment and it was determined that there were no registered archaeological sites within a 1 km range of the current study area.

2.0 METHODOLOGY

2.1 Field Methods

A previous Stage 1 archaeological assessment for this property recommended that a Stage 2 investigation be conducted for all areas retaining archaeological potential on the property outlined in Maps 5 and 6 (Golder Associates 2018). Given the study areas vegetation coverage, all areas were subsurface surveyed (test pitted) according to the MTCS *Standards and Guidelines* (2011) (Map 7). Fieldwork was lead by the licence holder Ibrahim Noureddine (PIF P350-048-2019) and conducted under appropriate weather and lighting conditions, see Table 2 below.

Subsurface survey involved the hand excavation of shovel test pits at 5 m intervals (Image 1, p.20). Test pits measured approximately 30 cm in diameter and were excavated 5 cm into the subsoil. Dirt from the test pits was screened through a 6 millimetre mesh to look for artifacts and backfilled upon completion. Photographs were taken, and notes were recorded in a field notebook which included details regarding land features and characteristics.

Field data collection incorporated the ArcGIS Collector application loaded on an Apple iPad connected to a Garmin GPS booster which provided average positional accuracy of approximately 5 m, to record spatial data of archaeological interest and photographic locations. The study area boundaries for were uploaded to the iPad to ensure the entire Stage 2 study area was tested. All surveyed locations and features of archaeological or topographic interest recorded with the ArcGIS Collector application were collected and reference the UTM coordinate system (Zone 18) and the NAD83 datum as six digit easting and seven digit northing coordinates.

The property was separated into 3 sections identified as Operations based on location and land characteristics prior to the fieldwork commencing. Operation 1 was located north along the historic March Road corridor and bound by a small dirt road to the south. It measured approximately 350 m east-west by 130 m north-south totalling 4 hectares (ha). This operation contained a large 1 ha permanently wet area, specifically in the northwestern section, which could not be tested (Images 2 and 3, pp.20 and 21). The remaining areas consisted of thick woods and brush (Image 4, p.21).

Operation 2 was another wooded area found centrally within the property (Image 5, p.22). The area totalled 3.4 ha with some portions consisting of shallow and exposed bedrock (Image 6, p.22). The limits of Operation 2 were bound by disturbed areas related to the local quarrying activities such as access roads, soil stripping, gravel piles and berms.

Operation 3 was located in the southeasterly corner of the property and totalled 2 ha. Similar to Operation 2, the area was bound by significant quarrying activities. The operation consisted of a thick woodlot and some deadfall (Images 7 and 8, p.23).

Table 2: Stage 2 Fieldwork Dates and Weather Conditions

Date	Operations	Weather
July 15, 2019	3	Sunny, 23°C
July 16, 2019	2, 3	Sunny, 26°C
July 17, 2019	1	Sunny, 30°C

The following documents were created in the field:

- Field notes (4 pages);
- Site photographs (63 total); and,
- ArcGIS Collector digital file.

3.0 RECORD OF FINDS

A total of three Operations or locations were shovel tested within the study area and are discussed below (Map 7). No artifacts or archaeological resources were identified during the Stage 2 investigation.

Operation 1

Operation 1 was the largest of the operations within the property and was shovel tested at 5-m intervals. This area consisted mostly of thick tree cover (Image 4, p.21) along with a significant amount of poison ivy across the forest floor. Soils consisted of a 15-20 cm thick medium brown sandy loam topsoil over light orange-brown silty sand subsoil (Image 9, p.24).

The environment differed in the southwestern corner of the operation, where permanently wet conditions were encountered. This area featured open areas with cattails, dead trees and permanently wet soils (Image 2, p.20). Test pitting was not successful in this area which was deemed a permanent wetland feature (Image 3, p.21).

Operation 2

Operation 2 was shovel tested at 5-m intervals beginning in the eastern end of the operation heading west. The area featured small open areas with shallow bedrock and otherwise thick tree cover (Images 5 and 6, p.22). Soils consisted of 5-15 cm thick medium brown sandy loam above light brown sandy subsoil or sometimes directly above bedrock (Images 10 and 11, pp.24 and 25).

Operation 3

Operation 3 was located in the southeast corner of the property and test pitted at 5-m intervals. Similar to most areas on the site, Operation 3 was entirely wooded with areas of deadfall that did not impact the Stage 2 methodology (Images 7 and 8, p.23). Soils consisted of approximately 15-20 cm thick medium brown sandy loam topsoil above light orange-brown subsoil (Image 12, p.25).

4.0 ANALYSIS AND CONCLUSIONS

Golder was retained by Cavanagh to conduct a Stage 2 assessment on portions of the proposed quarry expansion study area based on the Stage 1 recommendations for areas of archaeological potential (Maps 5 and 6). The Stage 2 assessment was conducted over a three-day period from July 15-17, 2019 following MTCS *Standards and Guidelines for Consultant Archaeologists* (2011).

Three separate Operations were shovel tested at 5-m intervals with similar results. All areas were wooded with dark brown sandy loam topsoil above an orange-brown silty sand subsoil with evidence of shallow bedrock in Operation 2. Operation 1 contained an area of permanently wet conditions in the southwest corner and was not excavated due to wetland conditions.

No archaeological resources were identified during the Stage 2 investigation and therefore the site does not contain cultural heritage value or interest as outlined in Section 2.2 of the Standards and Guidelines (2011).

5.0 RECOMMENDATIONS

No archaeological resources were identified during the Stage 2 assessment and therefore this investigation has provided the basis for the following recommendations (Map 7):

1) No further archaeological investigation is required within the Stage 2 assessment property as depicted on Maps 2 and 7 and as a consequence that the MTCS issue a letter concurring that no additional archaeological investigations are required for this area.

This report is submitted to the MTCS 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 the licensed consultant archaeologist has met the terms and conditions of their archaeological license, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

The MTCS is requested to review, and provide a letter indicating their satisfaction with the results and recommendations presented herein, with regard to the 2011 *Standards and Guidelines for Consultant Archaeologists* and the terms and conditions for archaeological licences, and to enter this report into the Ontario Public Register of Archaeological Reports.

6.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the MTCS, 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 Ontario 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*.

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. It is recommended that the Registrar of Cemeteries at the Ontario Ministry of Consumer Services is also immediately notified.

Reports recommending further archaeological fieldwork or protection for one or more archaeological sites must include the following standard statement: “Archaeological sites recommended for further archaeological fieldwork or protection remains 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”.

7.0 IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Golder has prepared this report in a manner consistent with that level of care and skill ordinarily 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 Cavanagh (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 all 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 the 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 Ontario Ministry of Tourism, Culture and Sports' *Standards and Guidelines for Consultant Archaeologists (2011).*

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9.0 IMAGES

Image 1: Crew shovel testing at 5-metre intervals in a clearing located centrally within the property, view northwest.

Image 2: Operation 1 contained a large 1 ha permanently wet area in the northwestern portion of the property noted by the large number of cattails and deadfall present, view south.

Image 3: Test pits within the northwestern portion of Operation 1 were saturated due to the wetland environment.

Image 4: Crew excavating the limits of the thick woods and brush that defined the majority of Operation 1, view south.

Image 5: Operation 2 consisted mostly of a wooded area found centrally within the property, view west.

Image 6: Some soil layers within Operation 2 were shallow due to exposed bedrock, view west.

Image 7: Operation 3 featured thick tree cover, view northwest.

Image 8: Areas of deadfall were encountered in Operation 3, view south.

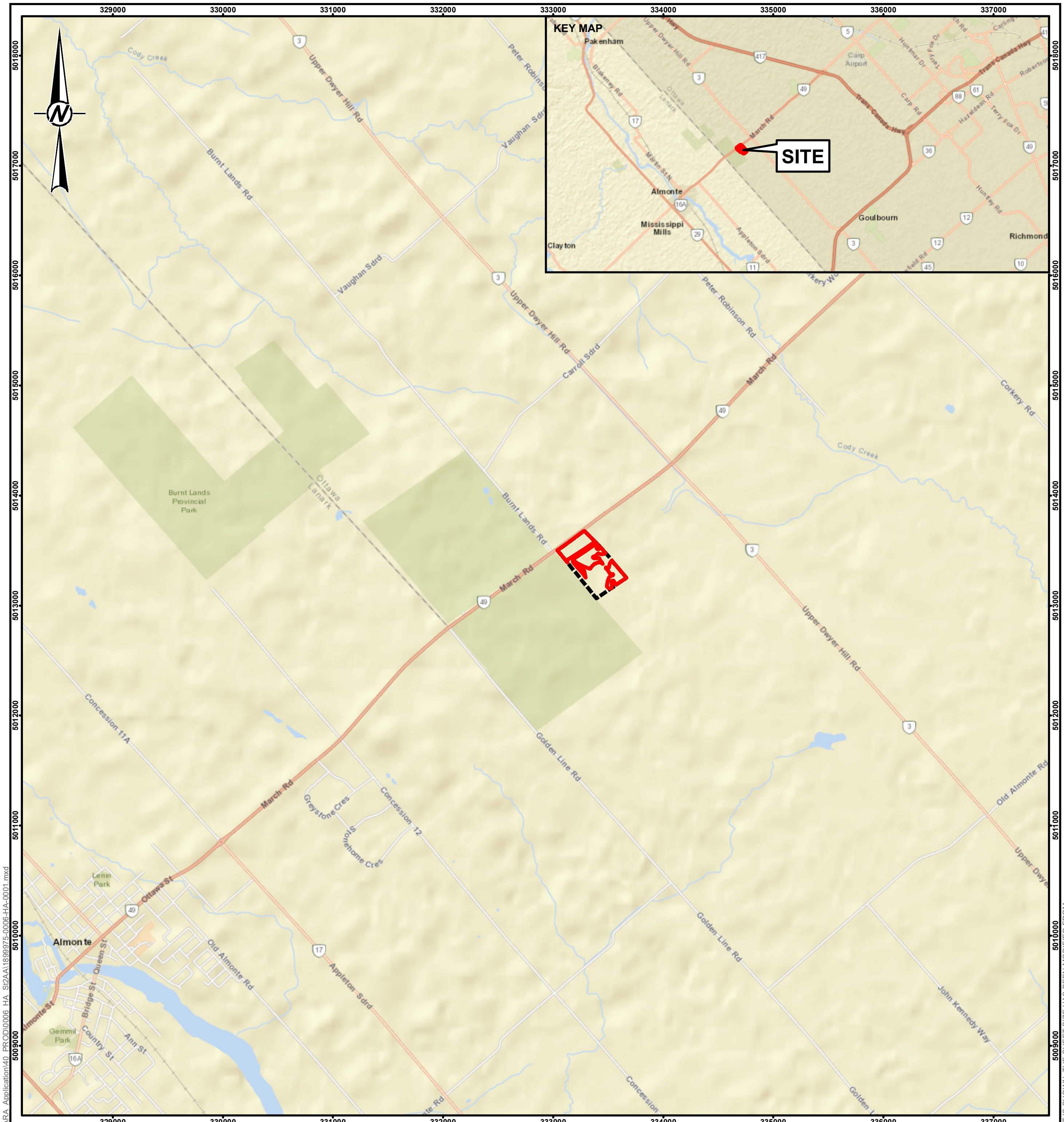
Image 9: Soils within Operation 1 consisted of 15-20 cm thick medium brown sandy loam topsoil over light orange-brown silty sand subsoil.

Image 10: Operation 2 featured a 5-15 cm thick medium brown sandy loam above light brown sandy subsoil.

Image 11: Some areas within Operation 2 also featured the medium brown sandy loam topsoil directly above shallow bedrock.

Image 12: Soils in Operation 3 consisted of medium brown sandy loam topsoil above light orange-brown subsoil.

10.0 MAPS



LEGEND

STAGE 2 STUDY AREA

PROPOSED LICENSE BOUNDARY AND STAGE 1 STUDY AREA

0 500 1,000 2,000

1:50,000 METRES

NOTE(S)
1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)
1. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

CLIENT
THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT
STAGE 2 ARCHAEOLOGICAL ASSESSMENT
ALMONTE QUARRY EXPANSION

TITLE
KEY PLAN

CONSULTANT

GOLDER

YYYY-MM-DD	2019-08-22
DESIGNED	----
PREPARED	BR
REVIEWED	ER
APPROVED	BD

PROJECT NO.	CONTROL	REV.	MAP
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KEY MAP

SCALE 1:145,000

LEGEND

- STAGE 2 STUDY AREA
- PROPOSED LICENSE BOUNDARY AND STAGE 1 STUDY
- ROADWAY
- TRAIL
- TOPOGRAPHIC CONTOUR, metres
- LOT AND CONCESSION

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2016
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3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

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1:2,500 METRES

CLIENT
THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT
STAGE 2 ARCHAEOLOGICAL ASSESSMENT
ALMONTE QUARRY EXPANSION

TITLE
SITE PLAN

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-22
DESIGNED	----
PREPARED	BR
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APPROVED	BD

PROJECT NO.	CONTROL	REV.	MAP
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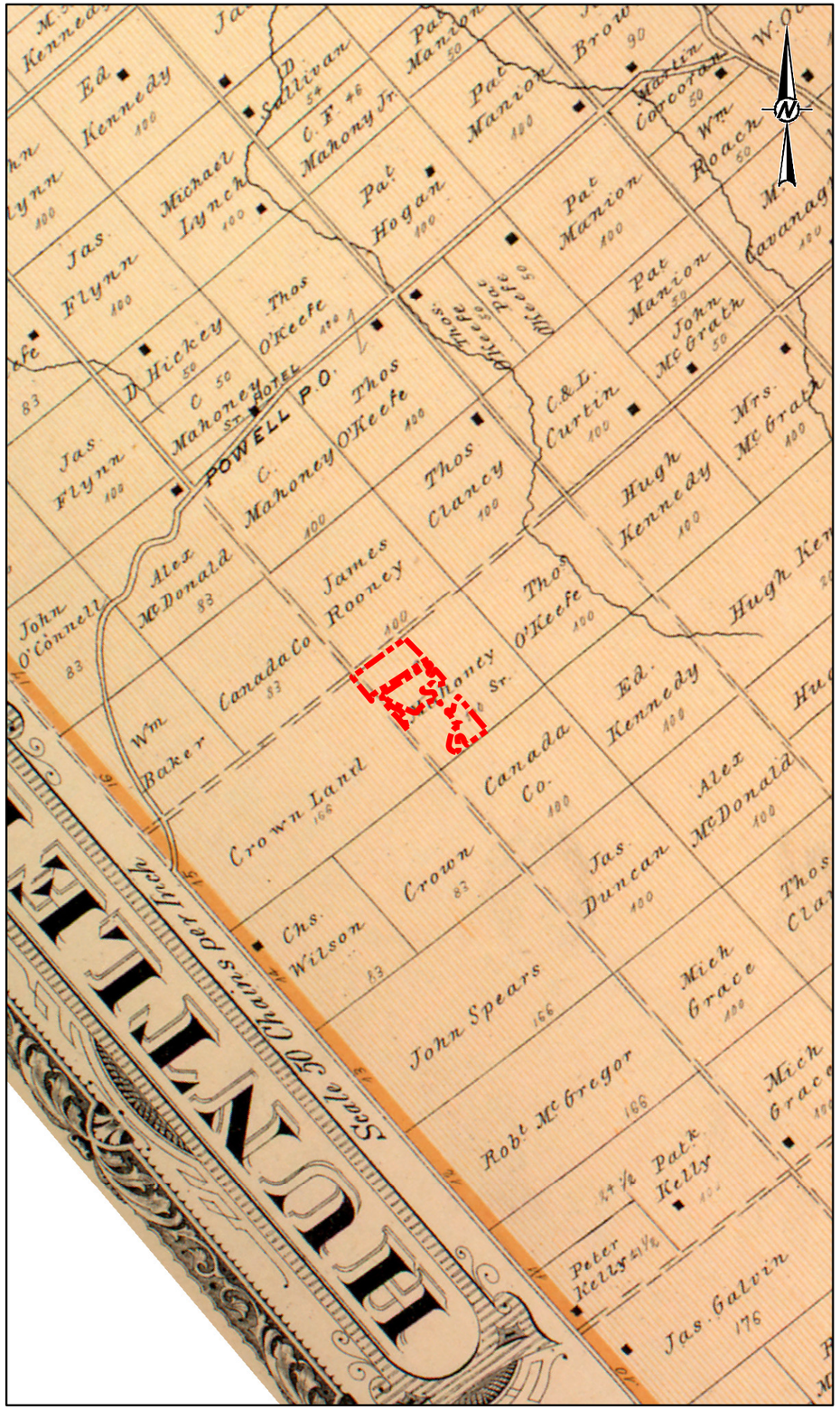

KEY MAP

SCALE 1:145,000

LEGEND

STAGE 2 STUDY AREA

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. MAP OF THE COUNTY OF CARLETON, CANADA WEST : FROM SURVEYS UNDER THE DIRECTION OF H.F. WALLING, 1863.
2. HUNTLEY TOWNSHIP, NORTH BOWER VILLAGE, MANOTICK, NEW EDINBURGH VILLAGE, MECHANICSVILLE, CARLETON COUNTY 1879.
3. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
4. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 250 500 1,000

1:25,000 METRES

CLIENT

THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT

STAGE 2 ARCHAEOLOGICAL ASSESSMENT
ALMONTE QUARRY EXPANSION

TITLE

HISTORIC MAPS - PART OF LOT 15 (WEST), CONCESSION 11, HUNTLEY TOWNSHIP

CONSULTANT

GOLDER

YYYY-MM-DD	2019-08-22
DESIGNED	----
PREPARED	BR
REVIEWED	ER
APPROVED	BD

PROJECT NO.	CONTROL	REV.	MAP
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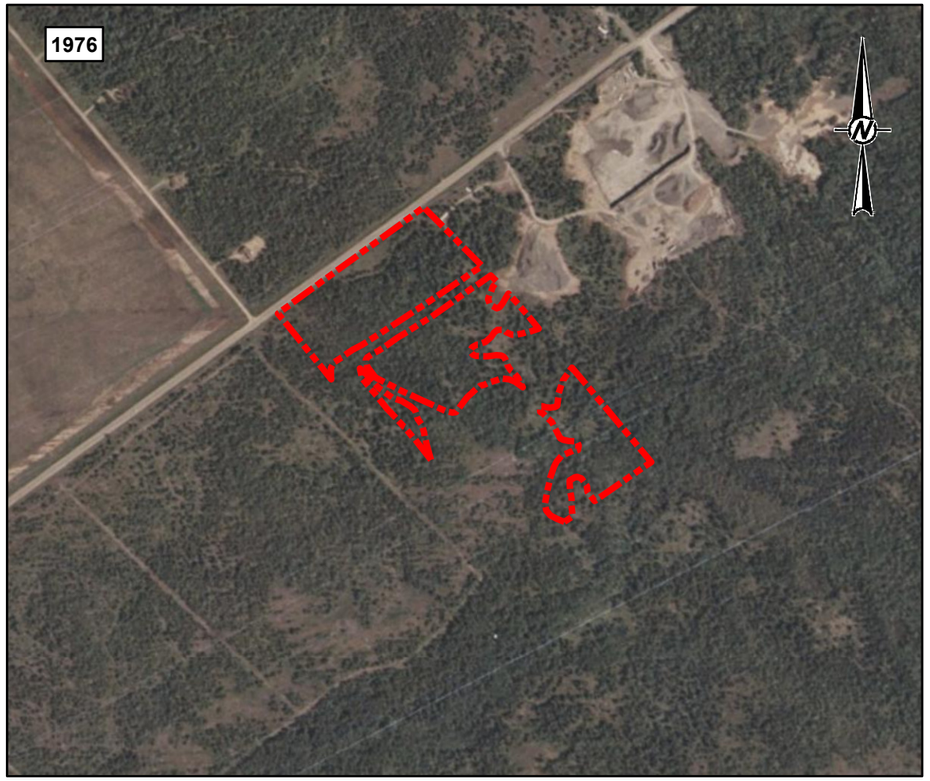

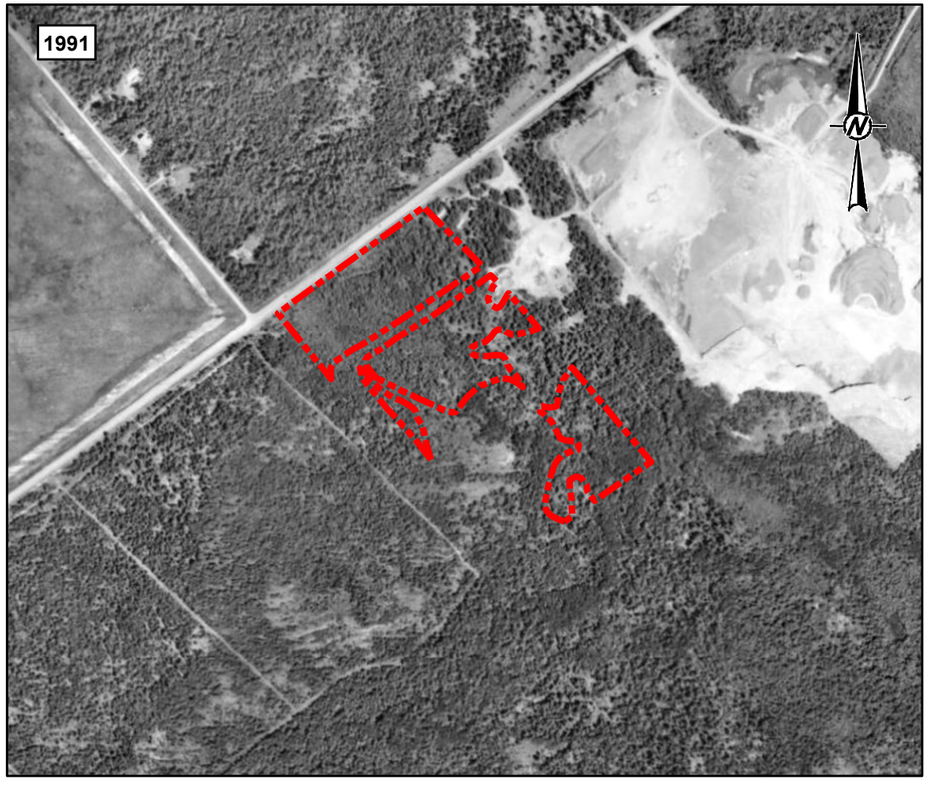

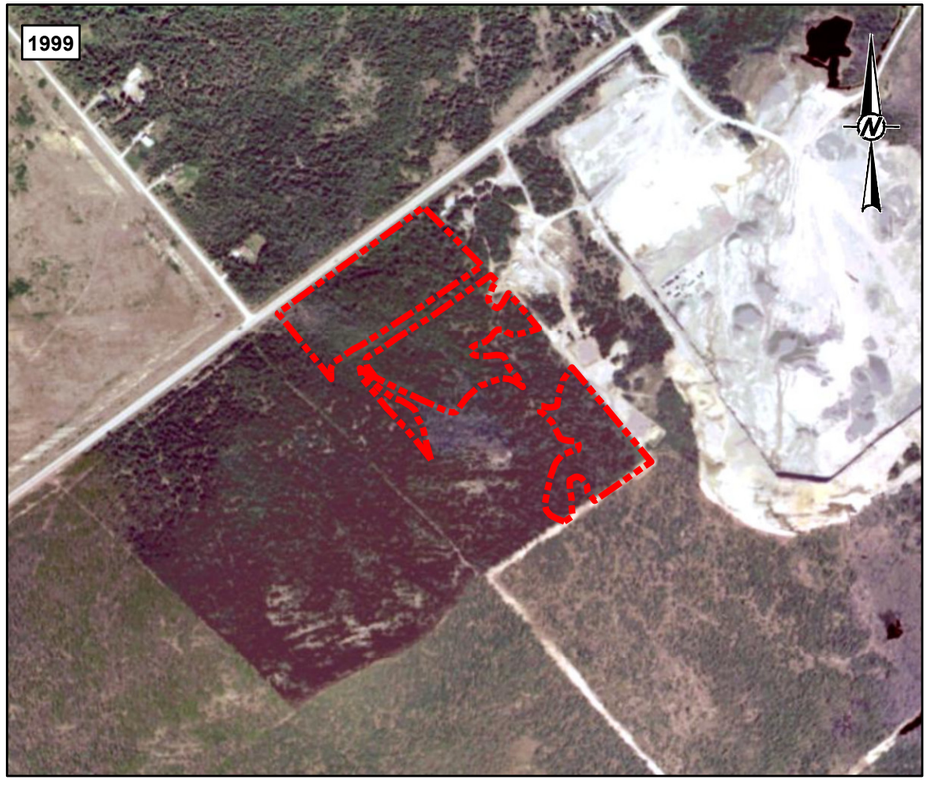

KEY MAP

SCALE 1:145,000

LEGEND

STAGE 2 STUDY AREA

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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2. 1976, 1991 AND 1999 AIR PHOTO, CITY OF OTTAWA, GEOOTTAWA.
3. SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, (C) OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY
4. COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

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CLIENT
THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT
STAGE 2 ARCHAEOLOGICAL ASSESSMENT
ALMONTE QUARRY EXPANSION

TITLE
AIR PHOTOS

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-22
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APPROVED	BD

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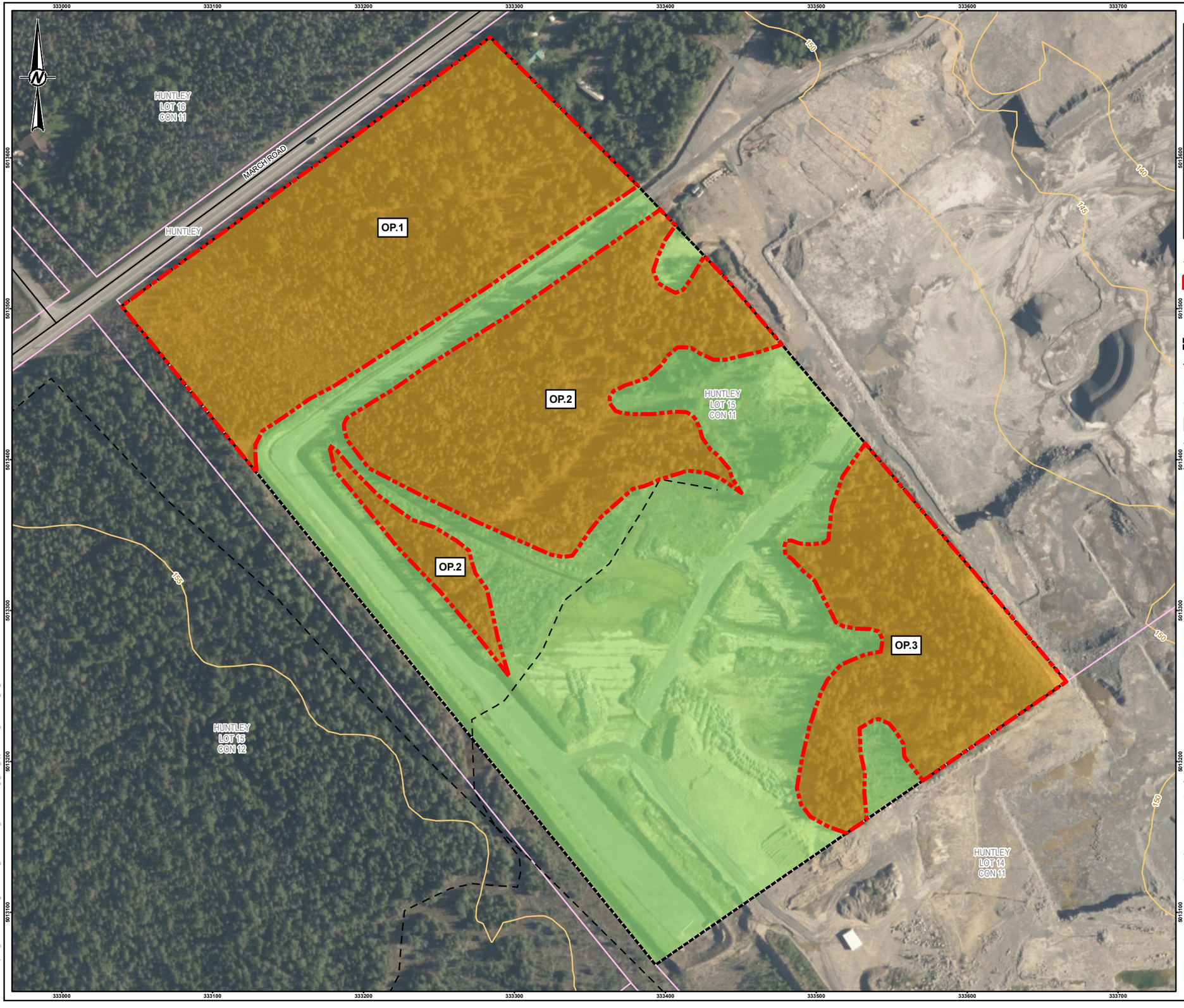

KEY MAP

SCALE 1:145,000

LEGEND

- STAGE 2 STUDY AREA
- ARCH POTENTIAL
- NO ARCH POTENTIAL
- PROPOSED LICENSE BOUNDARY AND STAGE 1 STUDY AREA
- ROADWAY
- TRAIL
- TOPOGRAPHIC CONTOUR, metres
- LOT AND CONCESSION

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 25 50 100
1:2,500 METRES

CLIENT
THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT
STAGE 2 ARCHAEOLOGICAL ASSESSMENT
ALMONTE QUARRY EXPANSION

TITLE
ARCHAEOLOGICAL POTENTIAL

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-22
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APPROVED	BD

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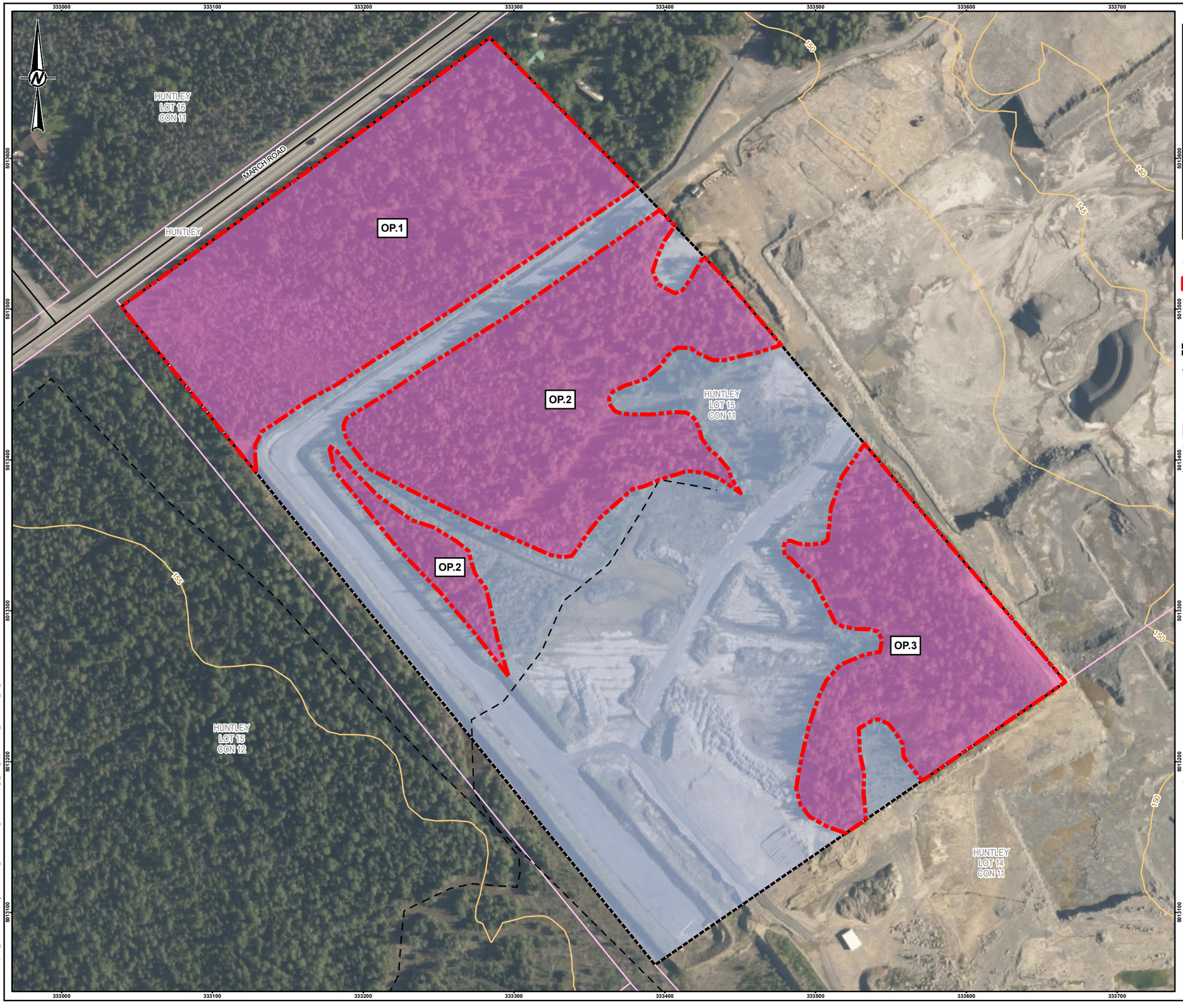

KEY MAP

SCALE 1:145,000

LEGEND

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- RECOMMENDED TO BE ARCHAEOLOGICALLY TESTED BY HAND EXCAVATED TEST PITS AT 5 METRE INTERVALS
- NO ADDITIONAL INVESTIGATION
- PROPOSED LICENSE BOUNDARY AND STAGE 1 STUDY
- ROADWAY
- TRAIL
- TOPOGRAPHIC CONTOUR, metres
- LOT AND CONCESSION

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

0 25 50 100
1:2,500 METRES

CLIENT
THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT
STAGE 2 ARCHAEOLOGICAL ASSESSMENT
ALMONTE QUARRY EXPANSION

TITLE
STAGE 1 RECOMMENDATIONS

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-22
DESIGNED	----
PREPARED	BR
REVIEWED	ER
APPROVED	BD

PROJECT NO.	CONTROL	REV.	MAP
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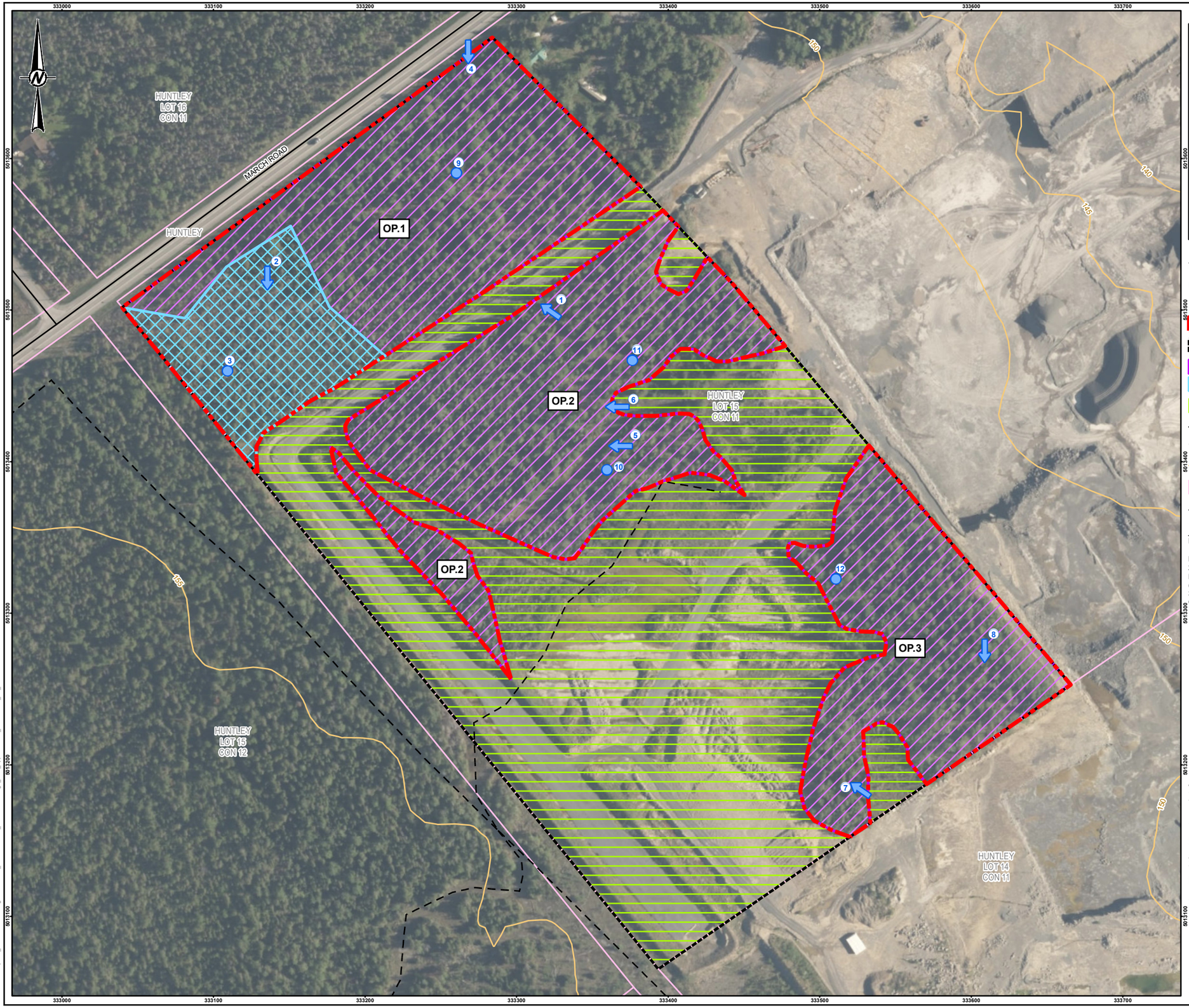

KEY MAP

SCALE 1:145,000

LEGEND

- PHOTO LOCATION AND DIRECTION
- PHOTO LOCATION POINTING DOWN
- STAGE 2 STUDY AREA
- PROPOSED LICENSE BOUNDARY AND STAGE 1 STUDY
- TEST PITTED
- PERMANENTLY WET - DOES NOT REQUIRE STAGE 2 TESTING
- AREA NOT PART OF STAGE 2 ASSESSMENT
- ROADWAY
- TRAIL
- TOPOGRAPHIC CONTOUR, metres
- LOT AND CONCESSION

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

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3. PROJECTION: TRANSVERSE MERCATOR, DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9, VERTICAL DATUM: CGVD28

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1:2,500 METRES

CLIENT
THOMAS CAVANAGH CONSTRUCTION LIMITED

PROJECT
STAGE 2 ARCHAEOLOGICAL ASSESSMENT
ALMONTE QUARRY EXPANSION

TITLE
STAGE 2 RESULTS AND PHOTO LOCATIONS

CONSULTANT
GOLDER

YYYY-MM-DD	2019-08-22
DESIGNED	----
PREPARED	BR
REVIEWED	ER
APPROVED	BD

PROJECT NO.	CONTROL	REV.	MAP
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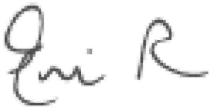
Signature Page

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.



Erin Rangecroft, M.A.
Staff Archaeologist

Bradley Drouin, M.A.
Associate, Senior Archaeologist

ER/BD/ca

https://golderassociates.sharepoint.com/sites/25725g/deliverables/archaeology stage 2/p350-0043-2019_26aug2019_re.docx

golder.com

Golder Associates Ltd. – Ottawa

Education

M.A. Mortuary Archaeology, University of Alberta, Edmonton, Alberta, 2004

B.A. Anthropology and Archaeology, Memorial University of Newfoundland, St. John's, Newfoundland, 2001

Certifications

Professionally Licensed Archaeologist, Ontario

Professional Affiliations

Ontario Archaeological Society

Career Summary

Bradley Drouin is an Associate and Senior Archaeologist with over 21 years of archaeological consulting experience currently working out of Golder's Victoria, BC, Office. Brad has been with Golder with 15 and has worked out of the Ottawa, Edmonton, London and Victoria offices; and Melbourne, Australia Office. During this time, Mr. Drouin has acted as Permit holding and Professionally Licensed Archaeologist on over 500 assignments in Alberta and Ontario as well as Project Archaeologist in Australia. Over the last 10 years, Brad has been managing the archaeology and cultural components for a number of large scale power projects throughout Ontario, where engagement and participation of Indigenous community members has been key to the success of the project.

In addition, Bradley is the Group Leader for the BC Heritage and Business Operations Support Team, and sits on Golder's National Indigenous Relations Steering Committee as the Subject Matter Expert for Ontario. In 2019, Brad took on the role of Operations Manager for Golder's longest running Indigenous joint venture: IMG-Golder corporation located in Inuvik, Northwest Territories.

Employment History

Golder Associates Ltd. – Victoria, British Columbia
Archaeologist (2021 to Present)

Group Leader for the Heritage and Business Operations Support Team. Operations Manager for IMG-Golder Corporation

Golder Associates Ltd. – Ottawa, Ontario
Archaeologist (2010 to 2020)

Project Manager for large and complex archaeological and cultural heritage projects throughout Ontario. Professionally licensed archaeologist in good standing carrying out Stage 1, 2, 3 and 4 archaeological assessments in Ontario. Operations Manager for IMG-Golder Corporation.

Golder Associates – Melbourne, Australia
Archaeologist (2009 to 2010)

Project archaeologist and Cultural Heritage Advisor carrying out Desk Top, Standard and Complex Assessments as well as Cultural Heritage Management Plans within the State of Victoria. Consulted with Registered Aboriginal Parties and Traditional Owner Groups around Melbourne with respect to project goals and outcomes.

Golder Associates Ltd – Edmonton, Alberta then Ottawa, Ontario
Archaeologist (2006 to 2009)

Professionally licensed archaeologist carrying out Stage 1, 2 and 3 archaeological assessments in Ontario. Permit holding archaeologist in Alberta, with experience in the Northwest Territories and Nunavut.

Various Consultancies – Various
Archaeologist (2000 to 2006)

Completed archaeological assessments through Ontario for a number of different consulting firms specializing in Archaeological Assessments. Primarily served as field technician.

SELECT PROJECT EXPERIENCE: POWER

Wataynikaneyap Pikangikum Distribution Line Project Stage 1 to 4
Red Lake to Pikangikum

Task Manager for the Stage 1 and 2 archaeological assessment for the Pikangikum Distribution Line Project, as well as two Stage 3 archaeological assessments. The Stage 2 was passed with minimal revisions, while the Stage 2 and 3 for the Berens Lake Portage Site and the Kirkness Site were granted an expedited review and passed without revisions. The Stage 2 and Stage 3s involved the active participation of at minimum 3 First Nation community members during the various field programs. Additionally, a Stage 4 was completed in advance of the transmission corridor construction. This work involved incredibly tight timelines and working closely with the MHSTCI, the proponent and Indiegnous Community Members to ensure adequate mitigation of the site but also to allow construction to proceed prior to freeze-up.

Wataynikaneyap Phase 1 Stage 1 and Stage 2 Archaeological Assessments, and Cultural Heritage
Wabigoon to Pickle Lake

Archaeology Task Manager and Licensee for the Stage 1 and Stage 2 archaeological assessments for Phase 1, and Task Manager for the Cultural Heritage Assessment. The Stage 1 was reviewed and approved by the MHSTCI without revisions. Facilitated a two-day training course for Indigenous Field Technicians for the Stage 2 field program. The Cultural Heritage Assessment report was recently reviewed by the MHSCTI without revisions.

Wataynikaneyap Phase 2 Project Stage 1 to 3 and Cultural Heritage
North of Pickle Lake and north of Pikangikum, Ontario

Task Manager and Licensed archaeologist for the Stage 1 to 3 archaeological assessment for the Phase 2 Wataynikaneyap Power Project. Stage 1 and 2 assessment reports were completed and reviewed by the MHSCTI and entered into the public registry. Completed large scale Stage 3 assessment at the Berens site, as well as three small Stage 3 assessments at various locations along the alignment. All work involved close collaboration and involvement from the local Indigenous Communities. This work involved incredibly tight timelines and working closely with the MHSTCI, the proponent and Indegenous Community Members to ensure adequate mitigation of the site but also to allow construction to proceed prior to freeze-up.

Stage 1 Archaeological Assessment, Bell Alliant,
Northern Ontario

Archaeology Lead for the completion of four Stage 1 archaeological assessments as part of an Environmental Assessment for a northern Ontario broad band project. The work involved the completion of the four Stage 1 assessments to MHSCTI *Standards and Guidelines for Consultant Archaeologists.* All four reports have been approved by MHSTCI and entered into the public registry.

Stage 1 and 2 Archaeological Assessment, CLIFFS Mine Site, Northern Ontario	Archaeology Discipline Lead for the completion of Stage 1 and 2 archaeological assessment as part of the CLIFFS Mine Site EA project. The project involved a detailed Stage 1 assessment as well as a Stage 2 of the development footprint. MTCS has reviewed and approved both Stage 1 and 2 reports and have been entered into the public registry.
Stage 1 and 2 Archaeological Assessment, CLIFFS FPF, Sudbury, Ontario	Project Archaeologist and Licensee for the completion of Stage 1 and 2 archaeological assessment as part of the CLIFFS Ferrochrome Production Facility EA project. The project involved a detailed Stage 1 assessment as well as a Stage 2 of the development footprint. MTCS has reviewed and approved both Stage 1 and 2 reports and have been entered into the public registry.
Stage 1 Archaeological Assessment, CLIFFS Aggregate Pit Locations, Northern Ontario	Licensed Archaeologist for the completion of 81 Stage 1 assessments as part of the CLIFFS aggregate pit EA project. The project involved a detailed Stage 1 assessment for over 81 potential pit locations throughout Northern Ontario. MTCS has reviewed and approved all Stage 1 reports for this projects with the reports having been entered into the public registry.
Stage 1 and 2, Highway 639 Culvert Replacement Elliot Lake, Ontario	Project Manager for a combined Stage 1 and 2 archaeological assessment for a proposed culvert replacement on along Highway 639, north of Elliot Lake. Project involved completion of Stage 2 field component on compressed schedule.
Stage 4 Archaeological Assessment, Enbridge Westover Line 10 Replacement Project Ancaster, Ontario	Archaeology Lead and Licensed Archaeologist for the Tract 73 of the Line 10 replacement project Stage 4 mitigation through hand excavation and mechanical topsoil removal. Work involved daily interactions and engagement with Indigenous Community representatives and on-site Monitors. Assisted in the coordination of fieldwork with staff of over 30 individuals over a three-year period. Once complete, this Contact Period Indigenous Site will be one of the largest Stage 4 hand excavations in Ontario's history.
Stage 4 Archaeological Assessment, Grand Renewable Energy Park Haldimand County, Ontario	Project Manager and Licensed Archaeologist for a 150MW 67 Turbine Wind Farm Project in Southwestern, Ontario. The Project involved the Stage 4 excavation of 44 Pre-Contact Indigenous archaeological sites and was completed between August 2012 and the Summer of 2015. The project required the coordination of over 120 office and field staff from nine separate Golder Offices across Ontario as well as coordination of Indigenous Field Monitors from three Nations. It represents one of the single largest Archaeology project completed by Golder to date.
Stage 1, 2, 3 and 4 Archaeological Assessment, Nation Rise Wind Farm Finch Township, Ontario, Canada	Project Manager and Licensed Archaeologist for a 100MW approximately 30 Turbine Wind Farm Project in Eastern Ontario. The Project involved management and execution of a Stage 1 and 2 Archaeological Assessment, Cultural Heritage Assessment, attendance at open houses and consultation with Indigenous communities. This project has also involved the completion of seven Stage 3 archaeological assessments and four Stage 4 mitigations through excavation and mechanical topsoil removal. From the onset of the project, three separate Indigenous Nations provided input and field technicians.

Stage 1, 2 and 3 Archaeological Assessments, Eastern Fields Wind Farm Project
Eastern Ontario
Eastern Ontario, Canada

Project Manager and Licensed Archaeologist for a 30MW approximately 9 Turbine Wind Farm Project in Eastern Ontario. The Project involved management and execution of a Stage 1 and 2 Archaeological Assessment, and consultation with Indigenous communities. This project has also involved the completion of two Stage 3 archaeological assessments. All reports and have been reviewed and approved by the MHSCTI

Stage 1-2 Archaeological Assessment, North Kent Wind Farm
Chatham-Kent, Ontario

Project Manager for a 100 MW Turbine Wind Farm Project north of Chatham, Ontario. The project involved the successful completion of a Stage 1 and 2 archaeological assessment and Cultural Heritage Impact Assessment. Through discussions with the client all culturally significant archaeological sites will be avoided.

Stage 1-2 Archaeological Assessment, Belle River Wind Farm
Belle River, Ontario

Project Manager for a 100 MW Turbine Wind Farm Project in Belle River, Ontario. The project involved the successful completion of a Stage 1 and 2 archaeological assessment and Cultural Heritage Impact Assessment. Through discussions with the client all culturally significant archaeological sites will be avoided.

Stage 4 Archaeological Assessment, Solar Farm
Haldimand County, Ontario

Project Manager and Licensed Archaeologist for a solar farm Project in South Western Ontario. The Project involved the Stage 4 excavation of six Pre-Contact Aboriginal sites and was completed between November 2012 and August 2013. The project involved close engagement with three interested First Nations groups and ongoing collaboration with the Ministry of Tourism Culture and Sport.

Stage 1 – 3 Archaeological Assessment
Haldimand County, Ontario

Project Manager and Licensed Archaeologist for a Stage 1 - 3 Point of Interconnect for a combined Wind and Solar farm in Haldimand County Ontario. The project involved the completion of field work and associated reporting under a condensed timeline due to construction schedules and required permitting. The project met the schedule timeline and was successfully cleared by the MTCS.

Stage 4 Archaeological Assessment, Solar farm
Frontenac County, Ontario

Project Manager and Licensed Archaeologist for a solar farm project situated in Frontenac County, Ontario. The Project involved the Stage 4 excavation of 3 historic Euro-Canadian archaeological sites over a period of two months. The project required the timely production of the preliminary archaeological assessment reports in order to meet construction and permitting timelines. The project was completed successfully.

Stage 3 Archaeological Assessment, GREP Wind and Solar farm
Haldimand, County, Ontario

Project Manager for a Stage 3 archaeological assessment project in advance of a wind and solar farm project in Haldimand County Ontario. The project involved the excavation and analysis of 54 Stage 3 archaeological sites on the wind lands and 28 archaeological sites on the solar lands. The results of the work and regulatory consultation completed for the Stage 3 assessments was a re-writing of Ministry of Tourism, Culture and Sports guidelines as they specifically relate to wind and solar farm projects.

Stage 1 and 2 Archaeological Assessment, TCPL Eastern Mainline Project, Various Location, Ontario

Provided technical oversight for a large Stage 1 and Stage 2 archaeological assessment. Completed daily quality control and quality assurance reviews of field data and ensured compliance fieldwork and reporting was being completed to MTCS *Standards and Guidelines.*

Stage 1 and 2 Archaeological Assessment and Cultural Heritage Mega Bridges 2, Various Locations, Ontario

Project Manager and Field Archaeologist for Stage 1 and 2 and Cultural Heritage Evaluation Reports and Documentation reports. Archaeological component involved completion of Stage 1 and 2 assessments for 5 bridge and culvert replacements. Cultural Heritage Evaluation Reports for 7 Bridges and one Documentation report which included 3D scan of entire bridge.

Stage 1 Archaeological Assessment, Highway 174-17 Project, Ottawa, Ontario

Project Archaeologist and Licensee for a large Stage 1 archaeological assessment for the Highway 174-17 Environmental Assessment. Work involved detailed site visits and discussions with various landowners and stakeholder groups. The report has been reviewed by the MTCS and entered into the public registry.

Stage 3 Archaeological Assessment, Ste. Anne's School Mattawa, Ontario

Project Manager and Field Supervisor for the investigation of an early to late Nineteenth Century Roman Catholic Cemetery in Mattawa, ON. The project involved consultation with First Nations, Metis, Roman Catholic and various Government agencies. Field component involved investigation of a large area with back-hoe to located intact grave shafts. When shafts were identified, sections of were excavated in order to confirm the presence of human skeletal remains. Once confirmed, the exposed human skeletal elements were documented and photographed re-buried for their long term protection. Project deliverables included an MTCS compliant Stage 3 Archaeological Assessment report as well as documentation to the City of Ottawa Coroner

Stage 1 and 2 Archaeological Assessment, Hurdman Bridge Rehabilitation, Ottawa, Ontario

Project Manager and Field Supervisor for a combined Stage 1 and 2 archaeological assessment for the rehabilitation and extension of Hurdman Bridge, Ottawa. Project involved completion of Stage 2 field component on compressed schedule with MTCS clearance obtained on time.

The Guard House (Building R14), Royal Military College 2011 Kingston, Ontario

Conducted a Stage 3 archaeological assessment for for areas to be impacted by drainage upgrades in the vicinity of the Guard House. The investigation included the hand excavation of 1 x 1 m units in order to determine the extent of historic deposits. The area was recorded through drawings and photography.

Royal Military College (RMC) of Canada Kingston, Ontario

Stage 3 Archaeological Assessment of the Barriefield Hill Site at the Royal Military College. The investigation included the hand excavation of 1 x 1 m units to determine the nature of the underlying deposits and the cultural heritage value of any identified archaeological resources.

Royal Military College (RMC) of Canada Kingston, Ontario	Project Manager and Licensed Archaeologist for A Stage 1 and Stage 2 archaeological assessment of the proposed location of a 70 car parking lot located southeast of Hewett House, west of Verité Avenue, and of the proposed location of streetlights along four road corridors of the college campus
East Tunnels Replacement, Parliamentary Precinct, Stage 4 Archaeological Assessment Ottawa, Ontario	Mechanical excavations of 20th century fill deposits and hand excavation of early 19th century historic deposits correlating to the early settlement of Ottawa, Ontario.
Archaeological Monitoring Parliament Hill Ottawa, Ontario	Licensee and Project Archaeologists for the Victoria Lookout rehabilitation project. The project involved archaeological monitoring during demolition of the retaining wall for the lookout.
Archaeological Monitoring Parliament Hill Ottawa, Ontario	Licensee and Project Manager for the Perimeter wall rehabilitation project on Parliament Hill. Monitored the excavation of trenches along the eastern perimeter between piers 1 and 27.
Archaeological Monitoring Parliament Hill Ottawa, Ontario	Licensee and Project Manager for two projects for the West Block Courtyard rehabilitation project. Both projects involved monitoring heavy equipment during the removal of material from the West Block Courtyard.
Old Supreme Court of Canada, Parliamentary Precinct Ottawa, Ontario	Licensee and Project Manager during re-paving of the RCMP check point location to the west of the West Block. The project involved archaeological monitoring during removal of deposits in the location of the old Supreme Court.
Archaeological Monitoring Parliament Hill Ottawa, Ontario	Archaeologist during a Stage 3 investigation in advance of construction and maintenance on the tunnel system between the Confederation and Justice Building. The work involved monitoring of heavy equipment and focused excavations.

Golder Associates Ltd. – Ottawa

Career Summary

Erin Rangecroft, M.A. is a staff archaeologist for Golder Associates Ltd. in the Ottawa office with 14 years of experience working in archaeology. She is an archaeologist and physical anthropologist who holds a Professional Licence in Ontario (P366). Her experience is extensive as she has led and assisted with a wide variety of excavations and research as a project manager, field technician and human/faunal analyst in Eastern Ontario, Southern Quebec, England, Egypt and Cyprus. She has a strong methodological background in human and faunal analysis and mortuary field techniques. She also has extensive experience in Precontact and Historic archaeology in both urban and rural contexts from various archaeological projects.

Education

Master of Arts Osteoarchaeology, University of Southampton, Southampton, United Kingdom , 2007

Bachelor of Arts (Honours) Classical Studies: Ancient Art and Archaeology, Brock University, St. Catharines, Ontario, 2005

Certifications

Archaeological Professional Licence (P366)- Ontario

Standard First Aid and Level A CPR St. John's Ambulance, 2017-2020

Fall Protection

WHIMIS

Employment History

Golder Associates Ltd. – Ottawa, Ontario
Archaeologist (2008 to Present)

Professionally licenced archaeologist responsible for supervising and writing Stage 1, 2, 3 and 4 terrestrial archaeological assessments and reports in both urban and rural settings under provincial and federal jurisdictions.

University of Granada – Luxor, Egypt
Archaeologist/Physical Anthropologist (Fall 2009 to Fall 2012)

Archaeologist and physical anthropologist carrying out supervisory and analyses work at the Funerary Temple of Thutmosis III. Manages, analyses and interprets the human and faunal assemblages from the ten tombs so far discovered from the 18th Dynasty.

Canadian Museum of Civilization – Hull, Quebec
Physical Anthropologist Researcher (2009)

Reviewed returned loan of Nunavut faunal material for human remains.

Heritage Quest Inc. – Kingston, Ontario
Archaeologist (2005 to 2006)

Performed Stage 2, 3 and 4 archaeological assessments of 19th-century urban and rural sites in the Ottawa area.

Kinickinick Heritage Consultants – Petawawa, Ontario
Material Culture Specialist (2005)

Catalogued and analyzed prehistoric and historic artifacts.

PROJECT EXPERIENCE – ARCHAEOLOGY

Oblates Cemetery,
Ottawa, Ontario

Project Archaeologist during the investigation and exhumation of human skeletal remains associated with Oblates Cemetery in Ottawa. Work involved the coordination of multiple regulatory agencies and stakeholders and resulted in the examination and exhumation of all remaining historic burials within the known limits of the cemetery. Role: Field Archaeologist

Ottawa Arts Gallery/Arts Court Redevelopment Project
Ottawa, Ontario

Lead archaeologist for Stage 2 Archaeological Assessment for the City of Ottawa. Due to the urban nature of the project mechanical test trenches were excavated. Excavations uncovered 19th century domestic housing foundations with the potential for the recovery of human remains related to the associated jail yard. Role: Lead Archaeologist, Researcher, Report Author

West Block, Parliament Hill, Archaeological Monitoring
Ottawa, Ontario, Canada

Project manager for archaeological monitoring related to various stages of the West Block redevelopment project on Parliament Hill. Work involved completion of archaeological investigation to both Provincial and Federal standards and was coordinated with the various investigation and construction phases of different components of the redevelopment.
Role: Project Manager, Lead Archaeologist, Researcher, Report Author

Lansdowne Park Redevelopment
Ottawa, Ontario

Conducted a Stage 4 archaeological assessment for the City of Ottawa. A combination of hand and mechanical excavation was used to excavate a 19th century historic site in an urban environment. The area was recorded through drawings and photography.
Role: Field Archaeologist

Ecole Ste. Anne-Franco Nord, Stage 2 Archaeological Assessment
Mattawa, Ontario, Canada

Lead archaeologist for the Stage 2 archaeological assessment of the École Franco-Nord in Mattawa Ontario. Responsible for; monitoring mechanical excavation backfill piles; recording unit profiles and plan views; taking coordinates using the Trimble Nomad and consultation with First Nation representatives.

Deloro Mine, Stage 4 Archaeological Assessment
Deloro, Ontario, Canada

Archaeological field crew for Stage 4 investigation at Delero Mines. The Deloro Mine was a late 19th/early 20th century mining and processing site. Survey and recording included only above ground features due to soil contaminates. Recording included GPS readings, field notes, digital photography and measured drawings.

Fort Frederick, Royal Military College
Kingston, Ontario, Canada

Conducted an archaeological investigation for Defence Construction Canada of areas to be affected by the investigative openings in Fort Frederick, Royal Military College, Kingston. The archaeological investigation included the hand excavation of three test units within the fort. Role: Field Archaeologist

Ottawa Light Rail Transit Project, Stage 4 Archaeological Assessments
Ottawa, Ontario

Conducted full scale excavation of the 19th century West End Hotel, Western Methodist Church, and residential buildings on Albert Street, downtown Ottawa. Both hand and mechanical excavation techniques. The sites were recorded through drawings and photography, as well as GPS co-ordinates.
Role: Field Archaeologist

Westbrook Creek Stage 4 Archaeological Assessment Ontario, Canada	Conducted precontact artifact analysis of the Westbrook Creek Stage 4 collection. Westbrook Creek-2 site (BbGd-23) suggests that the Westbrook Creek site was a Late Archaic lithic reduction occupation.
LeBreton Flats, Stage 4 Archaeological Assessment Ottawa, Ontario	Conducted full scale excavation of the Ste. Famille Separate School and the Canadian Central Railway Station, downtown Ottawa. Both sites were excavated using hand and mechanical excavation. The sites were recorded through drawings and photography, as well as GPS co-ordinates. Role: Field Archaeologist

PROFESSIONAL AFFILIATIONS

Ontario Archaeological Society

Canadian Association for Physical Anthropology