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ORIGINAL REPORT

Stage 1 Archaeological Assessment

Legault Lands Development - Trim Road
Part Lot 2, Concession 9
Geographic Township of Cumberland
Carleton, County
Ottawa, Ontario

Prepared For

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1.0 Executive Summary

Paterson Group was contracted by Novatech Engineering Consultants (Novatech) on behalf of the Regional Group of Companies (Regional), to undertake a Stage 1 archaeological assessment of the study area located on Part Lot 2, Concession 9 in the geographic Township of Cumberland, Carleton County (Map 1). The objectives of the investigation were to assess the archaeological potential of the property and determine whether further archaeological study was required on the study area prior to development activities in accordance with the Planning Act. Regional is planning to develop the property for residential subdivision (Map 2).

The Stage 1 assessment included a review of updated Ontario Ministry of Tourism, Culture and Sport (MTC) archaeological site databases, a review of relevant environmental, historical and archaeological literature, and primary historical research.

Based on the results of this investigation it is recommended:

1. A Stage 2 archaeological assessment be conducted by a licensed consultant archaeologist using the pedestrian survey method in areas that have been recently ploughed and are in appropriate conditions at the time of survey undergo pedestrian survey at 5 m intervals as per Section 2.1.1 of the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism Culture and Sport 2011).
2. A Stage 2 archaeological assessment be conducted by a licensed consultant archaeologist using the test pit survey method at 5m intervals in all areas which have not been recently ploughed or do not have appropriate conditions for pedestrian survey at the time of the Stage 2 assessment as per Section 2.1.2 of the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism Culture and Sport 2011).
3. The Stage 2 archaeological assessment follow the requirements set out in the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTC 2011).

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3.0 Project Personnel

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Report Review	Ben Mortimer, MA (P369)

4.0 Project Context

4.1 Development Context

Paterson Group was contracted by Novatech Engineering Consultants (Novatech) on behalf of the Regional Group of Companies (Regional), to undertake a Stage 1 archaeological assessment of the study area located on Part Lot 2, Concession 9 in the geographic Township of Cumberland, Carleton County (Map 1). The objectives of the investigation were to assess the archaeological potential of the property and determine whether further archaeological study was required on the study area prior to development activities in accordance with the Planning Act. Regional is planning to develop the property for a residential subdivision (Map 2).

The City of Ottawa has an archaeological management plan which was developed in 1999, *The Archaeological Resource Potential Mapping Study of the Regional Municipality of Ottawa-Carleton*. The management plan covers the Township of Gloucester (Archaeological Services Inc. and Geomatics International Inc. 1999a, 1999b). According to the City of Ottawa archaeological resource management plan, the only portion of the study area that exhibits archaeological potential is a narrow band along Trim Road (Map 3).

At the time of the archaeological assessment, the study area was owned by 1351219 Ontario Inc. Permission to access the study property was granted by the current land owner via Novatech prior to the commencement of any field work; no limits were placed on this access.

4.2 Historical Context

4.2.1 Historic Documentation

There are a few published resources on the history of Cumberland Township. The township is briefly referred to in *Ottawa Country* (Bond 1968), but most notably in *Historical Research for Cumberland Township* (Heinz 1936), and *Memories of Cumberland Township* (Cumberland Township Historical Society 2006). Another useful resource is the *Prescott and Russell Supplement to the Illustrated Atlas of the Dominion of Canada* (1881).

4.2.2 Pre-Contact Period

The Ottawa Valley was not hospitable to human occupation until the retreat of glaciers and the draining of the Champlain Sea, some 10,000 years ago. The Laurentide Ice Sheet of the Wisconsinian glacier blanketed the Ottawa area until about 11,000 B.P. At this time the receding glacial terminus was north of the Ottawa Valley, and water from the Atlantic Ocean flooded the region to create the Champlain Sea. The Champlain Sea encompassed the lowlands of Quebec on the north shore of the Ottawa River and most of Ontario east of Petawawa, including the Ottawa Valley and Rideau Lakes. However, by 10,000 B.P. the Champlain Sea was receding and within 1,000 years was gone from Eastern Ontario (Watson 1990:9).

By circa 11,000 B.P., when the Ottawa area was emerging from glaciations and being flooded by the Champlain Sea, northeastern North America was home to what are commonly referred to as the Paleo-Indian people. For Ontario the Paleo-Indian period is divided into the Early Paleo-Indian period (11,000 - 10,400 B.P.) and the Late Paleo-Indian period (10,500-9,400 B.P.), based on changes in tool technology (Ellis and Deller 1990). The Paleo people, who had moved into hospitable areas of southwest Ontario (Ellis and Deller 1990), likely consisted of

small groups of exogamous hunter-gatherers relying on a variety of plants and animals who ranged over large territories (Jamieson 1999). The few possible Paleo-Indian period artifacts found, as surface finds or poorly documented finds, in the broader region are from the Rideau Lakes area (Watson 1990) and Thompson's Island near Cornwall (Ritchie 1969:18). In comparison, little evidence exists for Paleo-Indian occupations in the immediate Ottawa Valley, as can be expected given the environmental changes the region underwent, and the recent exposure of the area from glaciations and sea. However, as Watson (1999:38) suggests, it is possible Paleo-Indian people followed the changing shoreline of the Champlain Sea, moving into the Ottawa Valley in the late Paleo-Indian Period, although archaeological evidence is absent.

As the climate continued to warm, the ice sheet receded further allowing areas of the Ottawa Valley to be travelled and occupied in what is known as the Archaic Period (9,500 – 2,900 B.P.). This period is generally characterized by increasing populations, developments in lithic technology (e.g., ground stone tools), and emerging trade networks. Archaic populations remained hunter-gatherers with an increasing emphasis on fishing. Sites from this period in the region include Morrison's Island-2 (BkGg-10), Morrison's Island-6 (BkGg-12) and Allumette Island-1 (BkGg-11) near Pembroke, and the Lamoureux site (BiFs-2) in the floodplain of the South Nation River (Clermont 1999).

The Woodland Period is characterized by the introduction of ceramics. Populations continued to participate in extensive trade networks that extended across much of North America. Social structure appears to have become increasingly complex with some status differentiation recognized in burials. Towards the end of this period domesticated plants were gradually introduced to the region. This coincided with other changes including the development of semi-permanent villages. The Woodland period is commonly divided into the Early Woodland (1000 – 300 B.C.), Middle Woodland (400 B.C. to A.D. 1000), and the Late Woodland (A.D. 900 – European Contact) periods.

The Early Woodland is typically noted via lithic point styles (i.e., Meadowood bifaces) and pottery types (i.e., Vinette I). Early Woodland sites in the Ottawa Valley region include Deep River (CaGi-1) (Mitchell 1963), Constance Bay I (BiGa-2) (Watson 1972), and Wyght (BfGa-11) (Watson 1980). The Middle Woodland period is identified primarily via changes in pottery style (e.g., the addition of decoration). Some of the best documented Middle Woodland Period sites from the region are from Leamy Lake Park (BiFw-6, BiFw-16) (Laliberté 1999).

The identification of pottery traditions or complexes (Laurel, Point Peninsula, Saugeen) within the Northeast Middle Woodland, the identifiers for the temporal and social organizational changes signifying the Late Woodland Period, subsequent phases within in the Late Woodland, and the overall 'simple' culture history model assumed for Ontario at this time (e.g., Ritchie 1969; Wright 1966, 2004) are much debated in light of newer evidence and improved interpretive models (Engelbrecht 1999; Ferris 1999; Hart 2012; Hart and Brumbach 2003, 2005, 2009; Hart and Englebrecht 2012; Martin 2008; Mortimer 2012). Thus, the shift into the period held as the Late Woodland is extremely fuzzy. There are general trends for increasingly sedentary populations, the gradual introduction of agriculture, and changing pottery and lithic styles. However, nearing the time of contact, Ontario was populated with somewhat distinct regional populations that broadly shared many traits. In the southwest, in good cropland areas, groups were practicing corn-bean-squash agriculture in semi-permanent, often palisaded villages which are commonly assigned to Iroquoian peoples (Wright 2004:1297-1304). On the shield and in other non-arable environments, including portions of the Ottawa Valley, there seems to remain a less sedentary lifestyle often associated with the Algonquian groups noted in the region at contact (Wright 2004:1485-1486).

4.2.3 Contact period

Initial contact between the Ottawa Valley Algonquian groups and European explorers occurred during Champlain's travels in 1613. At this time the Algonquian people along the Ottawa River Valley, an important and long-standing trade route to the interior, were middle-men in the rapidly expanding fur-trade industry and alliances were formed or reinforced with the French. Early historical accounts note many different Algonquian speaking groups in the region at the time. Of note for the lower Ottawa Valley area were the Kichesipirini (focused around Morrison Island); Matouweskariini (upstream from Ottawa, along the Madawaska River); Weskarini (around the Petite Nation, Lièvre, and Rouge rivers west of Montreal), Kinouchepirini (in the Bonnechere River drainage); and the Onontchataronon, (along the South Nation River) (Joan Holmes & Associates 1993; Morrison 2005; Pilon 2005). However, little archaeological work has been undertaken of contact period Algonquins (Pilon 2005).

Starting in the 1630s and continuing into the 1700s, European disease spread among the Algonquian groups along the Ottawa River, bringing widespread death (Trigger 1986:230). Additionally, up to 1650 warfare and raiding into the lower Ottawa Valley by the Five Nation Iroquois forced the various Algonquin groups from the area (Morrison 2005:26). By 1701 the Iroquois had been driven from most of southern Ontario and the Ottawa Valley was occupied by the Algonquin Nation (Morrison 2005:27-28).

A traditional lifeway was continued by many of the Algonquian groups in the lower Ottawa Valley above Montreal through to the influx of European settlement in the late 1700s and early 1800s. This included bands noted to be living along the Gatineau River and other rivers flowing into the Ottawa. These traditional bands maintained a seasonal round focused on harvesting activities into the 1800s when development pressures and assimilation policies implemented by the colonial government saw Algonquian lands taken up, albeit under increasing protest and without consideration for native claims, for settlement and industry.

4.2.4 Post-Contact Period

The first survey of 47,000 acres that would become Cumberland Township took place in 1791. A second survey in 1798 stated that counties should be made up of townships within eight judicial districts: Eastern, Johnston, Midland, Home, Niagara, London, Western and Newcastle. This was executed in 1802, when the area became part of the Eastern District which consisted of the counties of Glengarry, Dundas, Leeds, and Stormont (Cumberland Township Historical Society 2005).

In the summer of 1799, Cumberland Township was named to honour Prince Ernest Augustus I, one of the numerous children of George III, who became Duke of Cumberland on 24 April 1799. By October 1799, Cumberland Township was listed as existing partly in Stormont and Dundas Counties. On January 1, 1800, Cumberland Township was included with the townships of Clarence, Gloucester, Osgoode, Russell, and Cambridge in the County of Russell, which was now included in the Eastern District (Cumberland Township Historical Society 2005).

In Russell County, the first settlements occurred along the Ottawa River. The village of Cumberland was established on the south shore of the Ottawa River in 1801. Its strategic location at the confluence of the Lièvre and Ottawa Rivers made it a popular early fur trading post. Settlement is not recorded in the interior of the township prior to 1820. By 1828, there

were only twelve landowners in the township (Assessment Rolls for Cumberland Township 1834-1848).

By the mid-1800s the village of Cumberland was a major seasonal forwarding centre. A wharf allowed for mail carriers to transport communications, and the village had two telegraph offices. Cumberland also had a small ship building industry (Cumberland Township Historical Society 2005). In 1851, the population of Cumberland township was 1,659 and by 1861 had almost doubled to 2,609 (Bond 1968:22). In 1851, the township consisted of one stone house, 54 frame houses, 46 log houses, and 115 shanties. By 1861, the township had 6 stone houses, 16 frame houses, 315 log houses, and zero shanties (Bond 1968:24).

4.2.5 Study Area Specific History

The study area is located on Part Lot 2, Concession 9 in the geographic township of Cumberland. The 1825 Coffin map indicates that Captain Angus McDonell owned the property and this was one of nine lots (approximately 1000 acres) he held in Cumberland Township (Map 4). Angus McDonell was born in Scotland and began his military career as an ensign in the 60th (Royal American) Regiment of Foot in 1760, becoming a Lieutenant of that same regiment in 1770 (McIntyre n.d.). Originally known as the King's Royal Rifle Corps, an infantry rifle regiment of the British Army that was raised in British North America in the Seven Years' War, this regiment was renumbered the 60th (Royal American) Regiment in February 1757 when the 50th (Shirley's) and 51st (Pepperrell's) foot regiments were removed from the British Army roll after their surrender at Fort Oswego.

On 22 May 1775, McDonell sold his commission on account of bad health. Having served in North America, it seems that McDonell did not return to Scotland once selling his commission. It is likely that he settled in what was then Tryon county, about thirty miles from Albany, New York, then called Kingsborough. It was here that three MacDonell (sic) gentlemen (possibly relatives), their families and a group of 400 Catholic Highlanders had settled in 1773 on land provided by Sir William Johnson. Records compiled following the American Revolution indicate that McDonell did not own land prior to the war, further indicating he was possibly living with relatives in the area (McIntyre n.d.).

Angus McDonell later joined the Loyalist Regiment raised by Sir John Johnson, William Johnson's son, in 1776 as a Captain of the Royal Regiment of New York, which was better known as the "Royal Greens." During the first major campaign of Sir John Johnson's Royal Regiment, the failed St. Leger Expedition of 1777 to join Lieutenant General John Burgoyne in the siege of Albany, Captain McDonell was captured by the Americans. He was transferred further south for security and held as a prisoner until 1778 but was unable to return to the regiment until July of 1779 (MacLean 2008:217; Watt n.d.). In the fall of 1780, a 26-man detachment of Angus McDonell's Company participated in the Schoharie and Mohawk Valley Raids (Watt n.d.).

With the Treaty of Paris which ended the war, all the areas which the Royal Yorkers and others had fought for were lost. In accordance with instructions from the British Administration, the 1st Battalion of the Royal Regiment of New York was disbanded on 24 Dec 1783. The troops were allowed to remain in barracks in Montreal over the winter while preparations were made to settle them and their families west of Quebec. In 1784, the first five Royal townships laid out on the Upper St. Lawrence were settled by Sir John Johnson and his First Battalion of King's Royal Regiment of New York. Captain McDonell and his company were settled in Royal Township No. 1, Charlottenburgh. As per his rank McDonell would have been granted 700 acres (Watt n.d.).

Angus McDonell is later enumerated in the 1851 census for Charlottenburgh Township in Glengarry County (Statistics Canada 1851). He likely purchased the nine lots in Cumberland township from a Loyalist or several Loyalists, but never lived there himself, as indicated by the lack of a land owner listed on the property on the 1840, 1862, and 1881 township maps (Map 4).

4.3 Archaeological Context

4.3.1 Current Conditions

The study area consists of 43 hectares that mostly consists of a ploughed field with a small portion of wooded area to the south (Map 5). Provence Avenue passes through the middle of the property. Two residential buildings are currently located in the northeast corner and the northwest corner covers a portion of a French Catholic elementary school. The property is flat, with no notable landscape features.

The property is located west of Trim Road extending past Portobello Boulevard. Immediately to the north, south, and west of the property is a residential subdivision, and to the east are athletic fields.

4.3.2 Physiography

The study area lies within the Ottawa Valley Clay Plains (Map 6). The region is characterized by poorly drained topography of clay plains interrupted by ridges of rock or sand that offer moderately better drainage. This topography was influenced by the post glacial sequence Champlain Sea (ca. 10,500 to 8,000 B.C.) that deposited these clay soils and were subsequently covered by sand deposits from the emerging fresh water drainage. Some of these sands were eroded to the underlying clay deposits by later channels of the developing Ottawa River. The sections to the north and south of the Ottawa River are characteristically different. On the Ontario side there is a gradual slope, although there are also some steep scarps. (Chapman and Putnam 2007:205-208).

The soils of the study area predominantly of Bearbrook series soils and some Farmington soil (Map 6). Bearbrook soil is reddish brown, heavy marine clay with grey banding and often poorly drained (Schut and Wilson 1987:32). Farmington soils are moderately coarse to coarse textured and contain a considerable amount of calcareous material with a wide range of drainage conditions (Schut and Wilson 1987:38).

4.3.3 Previous Archaeological Assessments

Archaeological work in the region has primarily consisted of cultural resource management studies related to specific properties or development projects. Projects located within the vicinity of the study property include a Stage 1 and 2 assessments for a proposed subdivision located on part of Lots A, B & C, Concession. 8 & 9, Cumberland Township (Swayze 2001); a Stage 1 assessment of Part Lots D and E, Concession 7 and Part Lot 21, Concession 7 in Cumberland Township (Adams 2009); and a Stage 1 assessment for a hydro corridor to Quebec that passed through Cumberland Township (Kennett 1999). Paterson Group has conducted a series of archaeological assessments and a mitigation of impact for a proposed subdivision to the northeast along Old Montreal Road, including the Stage 4 mitigation of the BiFu-7 historic homestead site (Paterson Group 2012a, 2013a, 2013b, 2013d).

A Stage 1 Assessment and follow-up Stage 2 Assessments of the Trim Road corridor and realignment were undertaken (Archaeological Services Inc. 1998; Golder Associates 2011a, 2011b). Trim Road, near Old Montreal Road underwent a Stage 2 assessment that found no archaeological resources (Golder Associates 2011a). Paterson Group has conducted a Stage 1 and 2 assessment of 955 Dairy Road (Paterson Group 2013c) and a Stage 1 assessment of the Mondavi Court Development located at 1765 Trim Road, which found no need for further investigation (Paterson Group 2012b).

4.3.4 Registered Archaeological Sites and Commemorative Plaques

A search of the Ontario Archaeological Sites Database indicated four registered archaeological sites located within a 1 km radius of the study area. All four sites were located to the north of Innes Road, two of which Ken Swayze believes to be precontract campsites: BiFu-2 and BiFu-4. Ken Swayze also locate a Euro-Canadian farmstead site (BiFu-3) in which no artifacts were collected and the Cardinal Creek Homestead Site (BiFu-5) which consists of a ruined shed, several building foundations, two wells, a small hill-side midden, cultivation implements spread over 30 m x 40 m area, but no artifacts were collected (Swayze 2001). The sites are listed in Table 1.

Borden Number	Site Name	Time Period	Affinity	Site Type	Current Development Review Status
BiFu-2		Pre-Contact	Aboriginal	camp / campsite	No Further CHVI
BiFu-3		Post-Contact	Euro-Canadian	farmstead	No Further CHVI
BiFu-4		Pre-Contact	Aboriginal	camp / campsite	No Further CHVI
BiFu-5	Cardinal Creek Homestead	Post-Contact	Euro-Canadian	homestead	CHVI not listed

Table 1: Registered Archaeological Sites within 1km radius.

No commemorative plaques or monuments are located near the subject property.

4.3.5 Archaeological Potential

Based on the Archaeological Resource Potential Map, the only the portion of the property along Trim Road has archaeological potential (Archaeological Services Inc. and Geomatics International Inc. 1999) (Map 3).

Potential for pre-contact sites is based on physiographic variables that include distance from the nearest source of water, the nature of the nearest source/body of water, distinguishing features in the landscape (e.g., ridges, knolls, eskers, wetlands), the types of soils found within the area of assessment and resource availability. The study area consists of poorly drained clay soils; and is located over 1 km from a tributary Cardinal Creek. The study area property exhibits some potential for pre-contact archaeological potential as two pre-contact archaeological sites have been registered within 1km.

Historic records show that this area was mainly rural, and it is not likely that the property was occupied until after 1900, since Captain Angus McDonell lived in Glengarry County and no structures or owners are listed in the historic mapping. Two other known historic period archaeological sites are located within a 1 km radius of the study property. The main factor

providing archaeological potential along the eastern edge of the property is the proximity to Trim Road, a historic transportation route.

According to the City of Ottawa archaeological resource management plan, the only portion of the study area that exhibits archaeological potential is a narrow band along Trim Road (Map 3) (Archaeological Services Inc. and Geomatics International Inc. 1999a, 1999b). The reminder of the study area demonstrates low potential for pre-contact and historic period archaeological sites.

5.0 Analysis and Conclusions

Based on these findings, the study area demonstrates some archaeological potential. According to the City of Ottawa archaeological resource management plan, the only portion of the study area that has archaeological potential is a narrow band along Trim Road. However, based on Section 1.4.2 Standard 1 of the *Standards and Guidelines for Consultant Archaeologists*, without a property inspection (subject to proper field conditions and methodology) to confirm that archaeological potential has been removed by extensive and deep ground disturbance, the entire property requires a Stage 2 archaeological assessment (Ministry of Tourism Culture and Sport 2011).

6.0 Recommendations

Paterson Group was contracted by Novatech Engineering Consultants (Novatech) on behalf of the Regional Group of Companies (Regional), to undertake a Stage 1 archaeological assessment of the study area located on Part Lot 2, Concession 9 in the geographic Township of Cumberland, Carleton County (Map 1). The objectives of the investigation were to assess the archaeological potential of the property and determine whether further archaeological study was required on the study area prior to development activities in accordance with the Planning Act. Regional is planning to develop the property for a residential subdivision (Map 2).

The Stage 1 assessment included a review of updated Ontario Ministry of Tourism, Culture and Sport (MTCS) archaeological site databases, a review of relevant environmental, historical and archaeological literature, and primary historical research.

Based on the results of this investigation it is recommended:

1. A Stage 2 archaeological assessment be conducted by a licensed consultant archaeologist using the pedestrian survey method in areas that have been recently ploughed and are in appropriate conditions at the time of survey undergo pedestrian survey at 5 m intervals as per Section 2.1.1 of the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism Culture and Sport 2011).
2. A Stage 2 archaeological assessment be conducted by a licensed consultant archaeologist using the test pit survey method at 5m intervals in all areas which have not been recently ploughed or do not have appropriate conditions for pedestrian survey at the time of the Stage 2 assessment as per Section 2.1.2 of the Standards and Guidelines for Consultant Archaeologists (Ministry of Tourism Culture and Sport 2011).
3. The Stage 2 archaeological assessment follow the requirements set out in the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTC 2011).

7.0 Advice on Compliance with Legislation

- a. This report is submitted to the *Minister of Tourism and Culture* as a condition of licencing 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 Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
- b. It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licenced 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*.
- c. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licenced consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.
- d. The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the *Ontario Heritage Act* and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

8.0 Closure

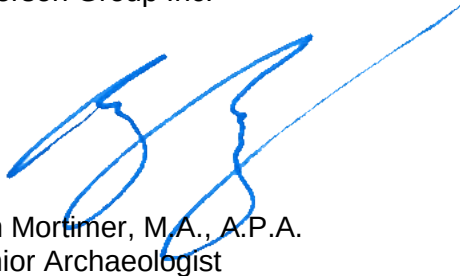
Paterson has prepared this report in a manner consistent with the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made. The sampling strategies incorporated in this study comply with those identified in the Ministry of Tourism, Culture and Sport's Standards and Guidelines for Consultant Archaeologists (2011) however; archaeological assessments may fail to identify all archaeological resources.

The present report applies only to the project described in the document. Use of this report for purposes other than those described herein or by person(s) other Novatech or their agent(s) is not authorized without review by this firm for the applicability of our recommendations to the altered use of the report.

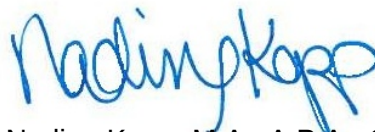
This report is pending Ministry approval.

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

Paterson Group Inc.



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10.0**Maps**

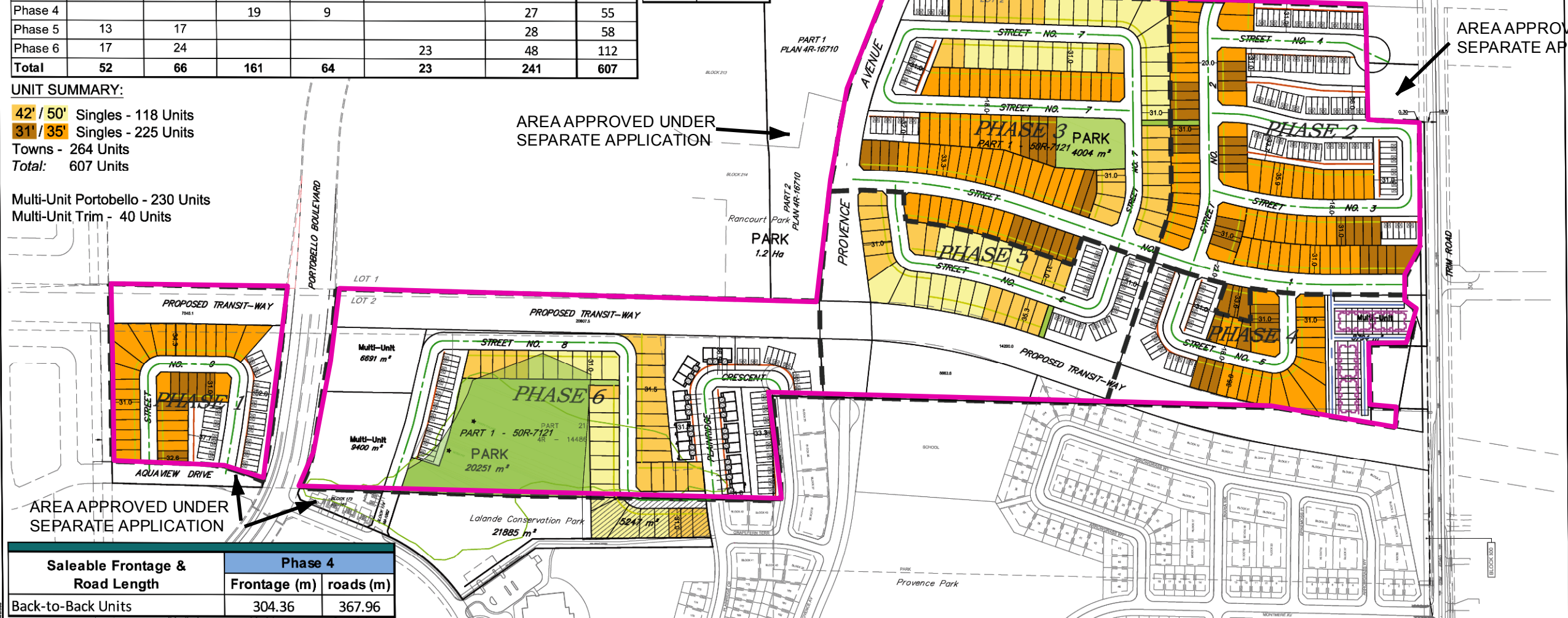
Unit Breakdown / Phase						
Phase #	50' Singles	42' Singles	35' Singles	31' Singles	Bungalow Towns	Street Towns
Phase 1			27	7		28
Phase 2			58	30		88
Phase 3	22	25	57	18		22
Phase 4			19	9		27
Phase 5	13	17				28
Phase 6	17	24			23	48
Total	52	66	161	64	23	241

UNIT SUMMARY:

42' / 50' Singles - 118 Units
31' / 35' Singles - 225 Units
Towns - 264 Units
Total: 607 Units

Multi-Unit Portobello - 230 Units
Multi-Unit Trim - 40 Units

Multi-Unit Breakdown / Phase	
Phase #	Multi-Unit
Phase 4	40
Phase 6	230
Total	270



Saleable Frontage & Road Length	Phase 4	
	Frontage (m)	roads (m)
Back-to-Back Units	304.36	367.96

Concept 7													
Saleable Frontage & Road Length	Phase 1		Phase 2		Phase 3		Phase 4		Phase 5		Phase 6		TOTAL
	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m)	roads (m)	Frontage (m) roads (m)
Residential	359.05	316.53	946.15	1245.58	1453.84	1125.64	291.88	279.73	417.61	364.63	583.93	834.13	4052.46 4166.24
Medium Density	186.94		602.17		152.61		179.31		186.37		580.86		1888.26
Total	545.99	316.53	1548.32	1245.58	1606.45	1125.64	471.19	279.73	603.98	364.63	1164.79	834.13	5940.72 4166.24

NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMANS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

Park Dedication = 0.4 Ha
Rock Knoll Dedication = 2.0 Ha
Rock Knoll Recovery = 0.52 Ha

REVISION			
No.	REVISION	DATE	BY
3.	UNIT COUNTS UPDATED	JAN 09/18	MER
2.	PATHWAYS ADDED	JAN 03/18	JGR
1.	PARK ADJUSTED	DEC 11/17	JGR

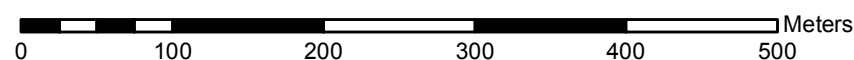
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FOR REVIEW ONLY	
CHECKED	XXX
DRAWN	XXX
CHECKED	WIS
APPROVED	XXX

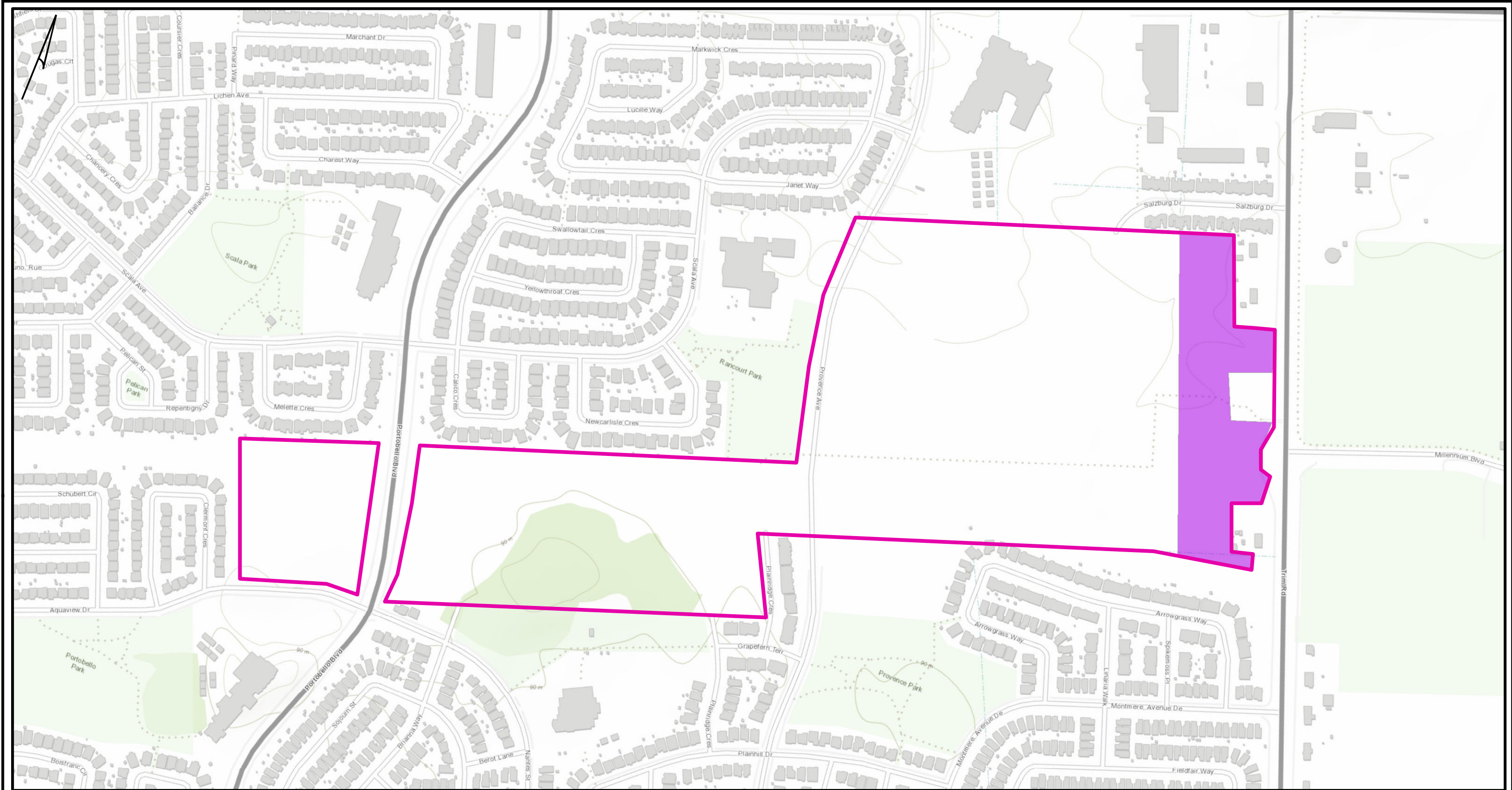
Engineers, Planners & Landscape Architects
Suite 200, 240 McNeil Courtland Drive
Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-9867
Website www.novatech-eng.com

LOCATION CITY OF OTTAWA LEGAULT LANDS	
DRAWING NAME	CONCEPT PLAN 13
PROJECT No.	117155-00
REV	REV # X
DRAWING No.	117155-CP13

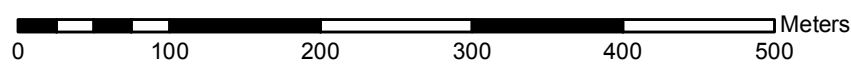
DEVELOPEMENT AREA



References:
Projection: Transverse Mercator Datum NAD 83, UTM Zone 18
SERVICE LAYER CREDITS: PLAN PROVIDED BY NOVATECH ENGINEERING MARCH 15, 2018



- DEVELOPMENT AREA
- CITY OF OTTAWA ARCHAEOLOGICAL POTENTIAL (1999)

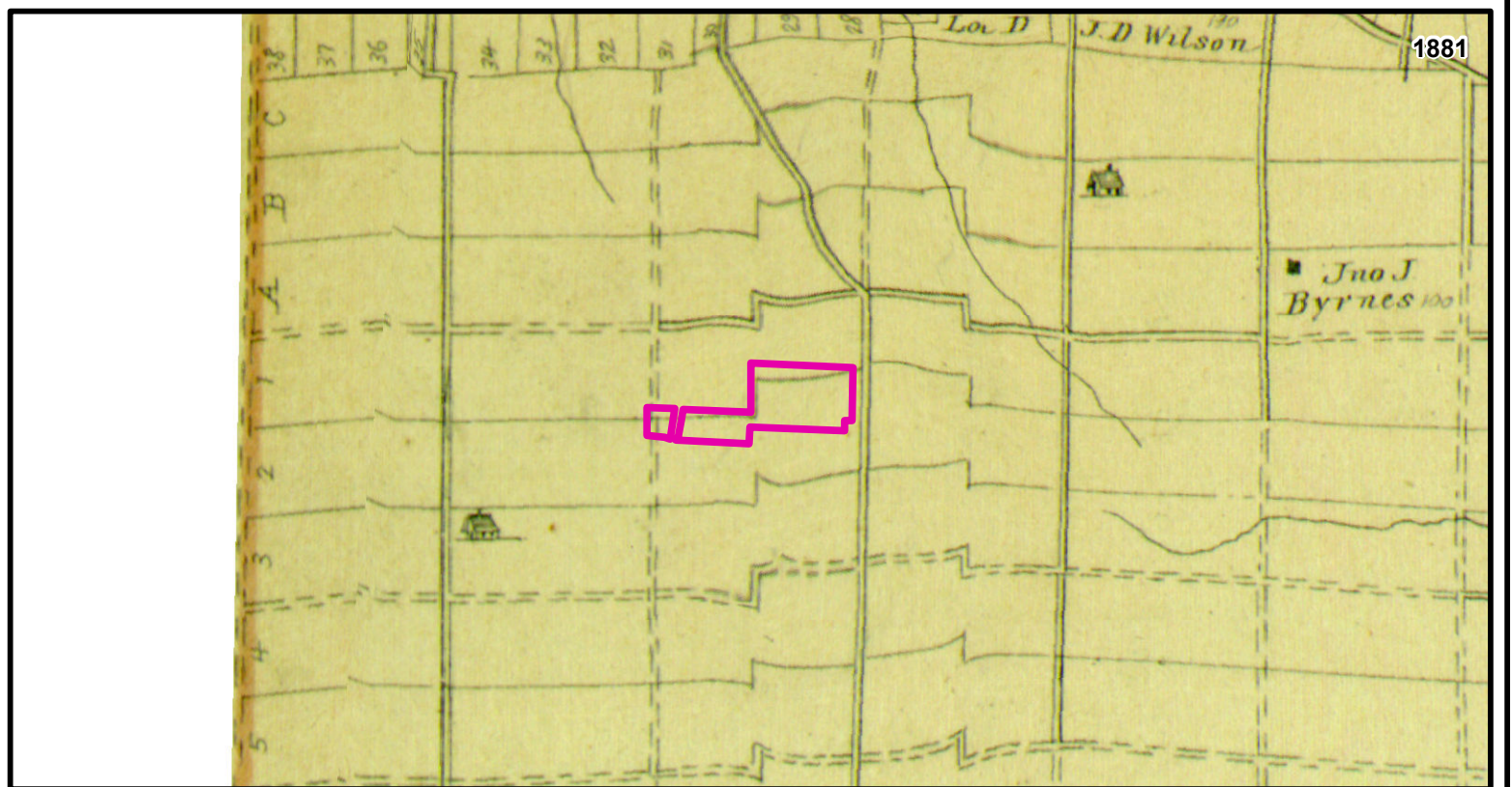
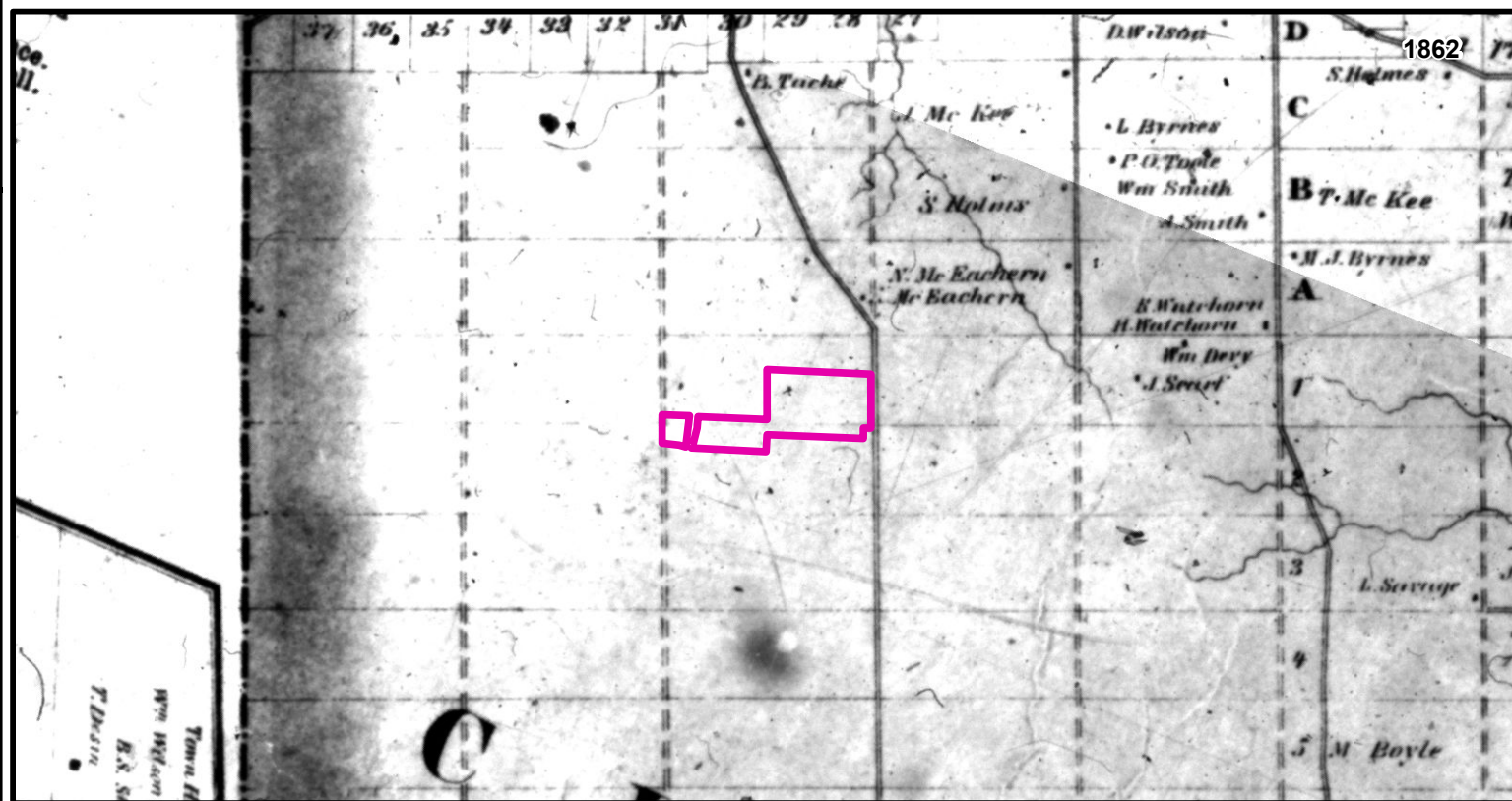
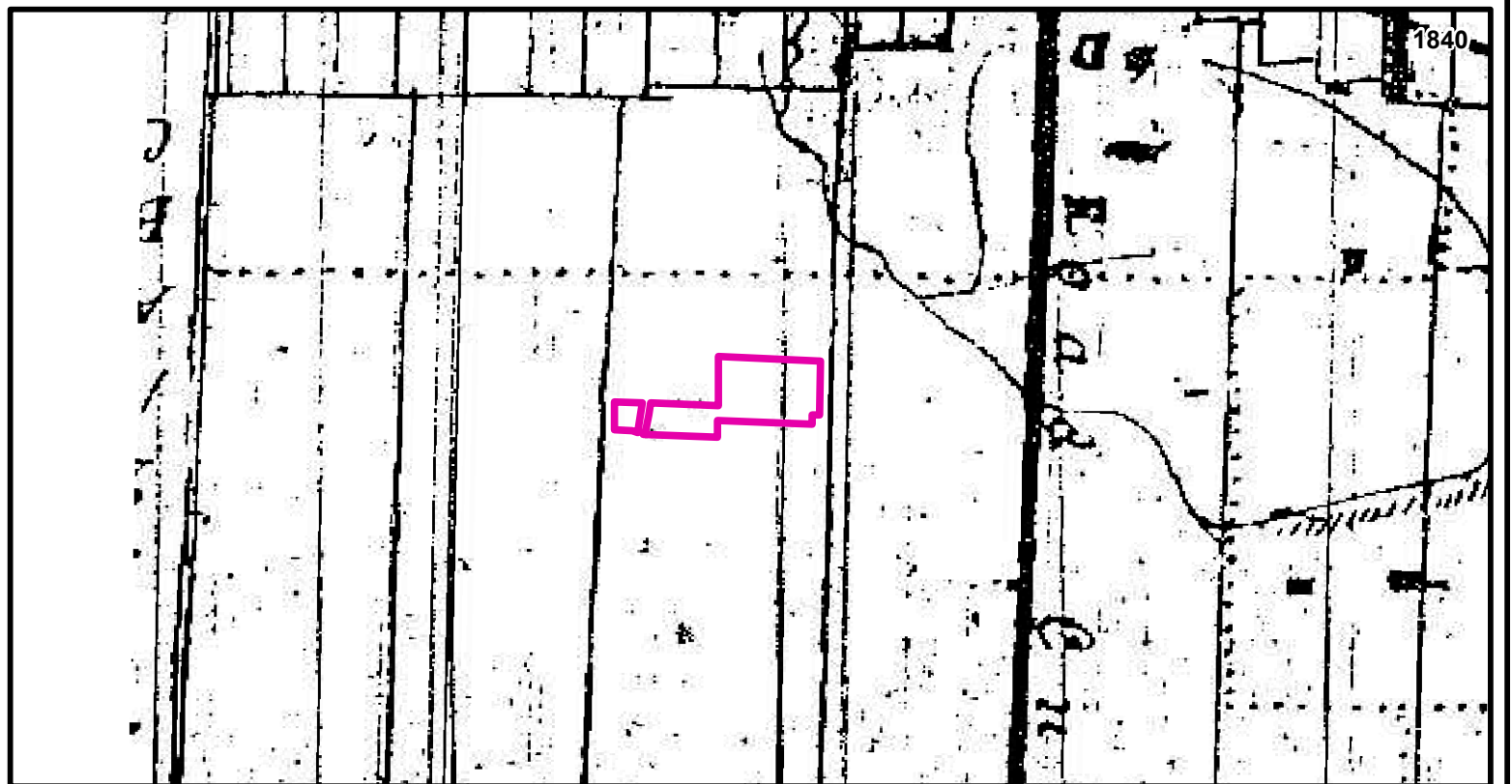
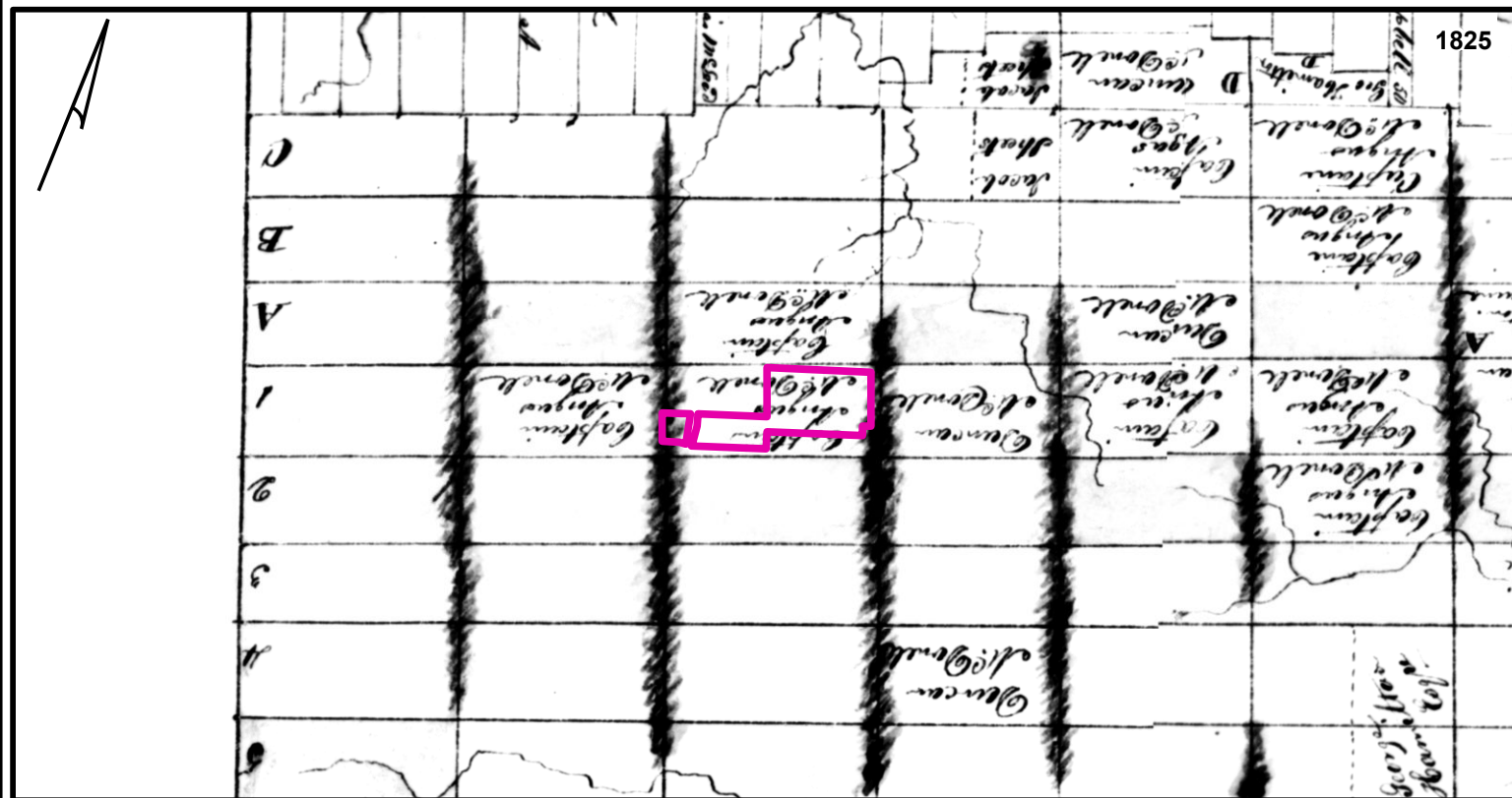


References:

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ARCHAEOLOGICAL POTENTIAL FROM THE 1999 CITY OF OTTAWA ARCHAEOLOGICAL POTENTIAL

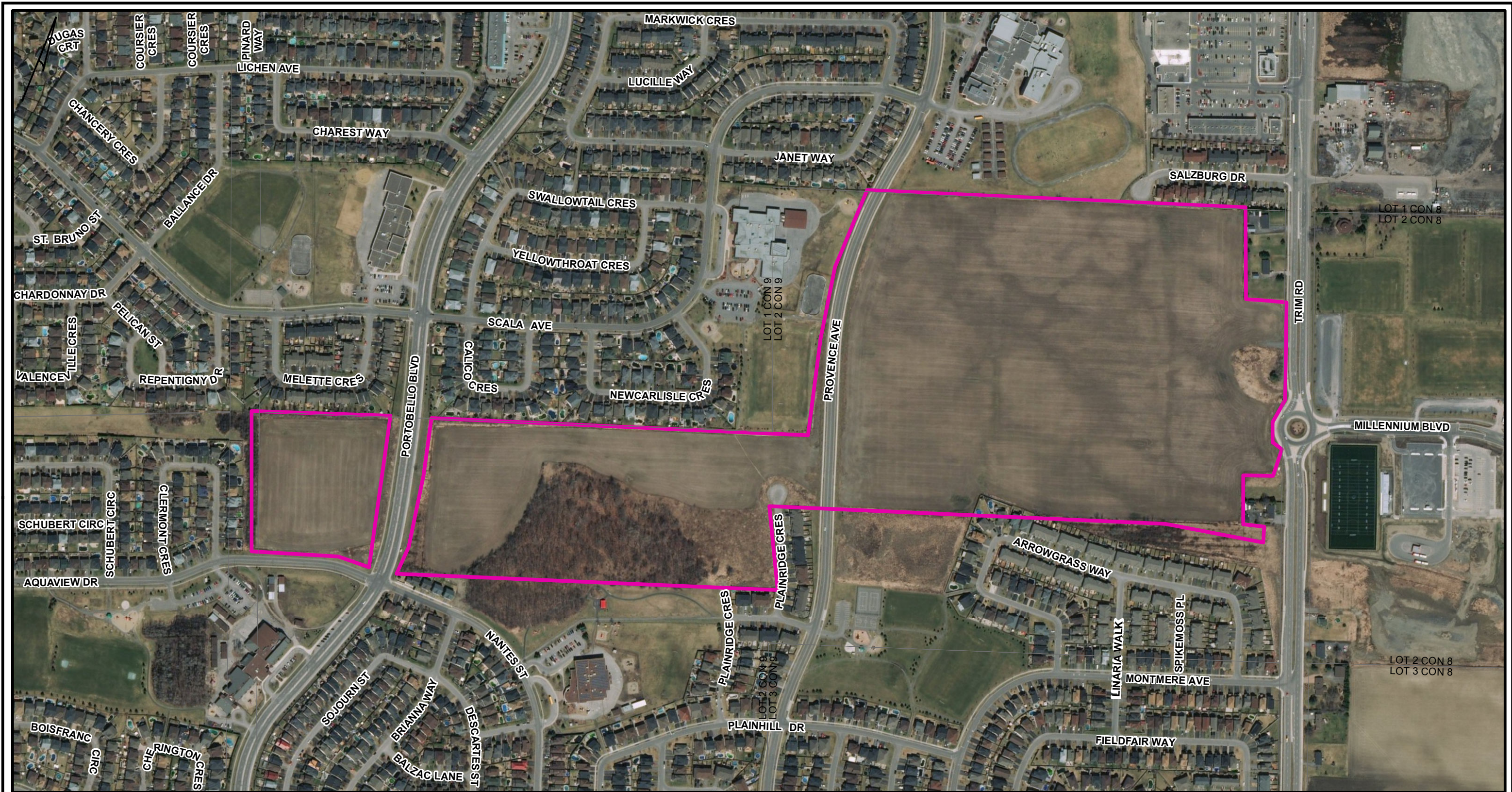


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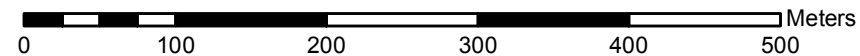
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 1840 SEGMENT OF ASSESSMENT MAP OF CUMBERLAND (NAC MS 116)
 1862 SEGMENT OF PLAN OF THE COUNTIES OF STORMONT, DUNDAS, GLENGARRY, PRESCOTT AND RUSSELL, WALLING (NMC 21998)
 1881 SEGMENT OF PRESCOTT AND RUSSELL SUPPLEMENT TO THE ILLUSTRATED ATLAS OF THE DOMINION OF CANADA, BELDEN AND CO.

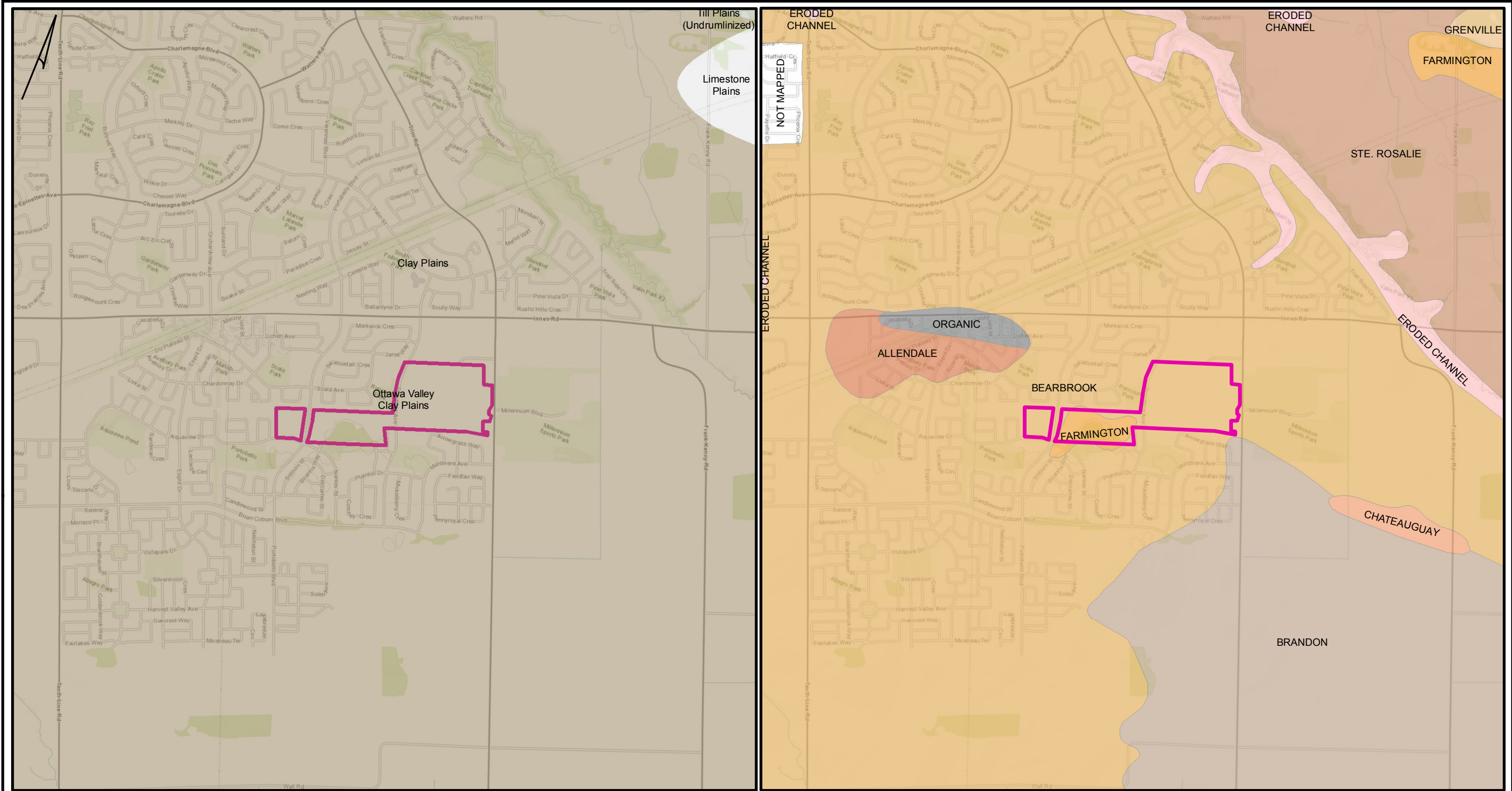


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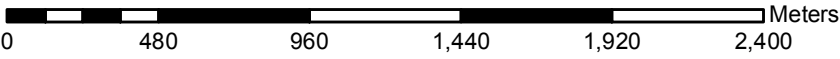


References:

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CHAPMAN AND PUTNAM 2007
SOILS OF OTTAWA, ONTARIO MINISTRY OF AGRICULTURE, FOOD AND RURAL AFFAIRS 2003

 consulting engineers 154 Colonnade Road South, Ottawa, Ontario K2E 7J5	Scale 1:24,000 Des BM Drawn BM Chkd BM	Project PA1099	STAGE 1 ARCHAEOLOGICAL ASSESSMENT: LEGAULT LANDS, TRIM ROAD OTTAWA, ON	SOILS AND PHYSIOGRAPHY	File:PA1099-MAP SOILS
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					Map: 6

Appendix B: Map Catalogue

Map Number	Description	Created By
1	Location	B. Mortimer
2	Concept Plan	B. Mortimer
3	Potential	B. Mortimer
4	Historic Overlay	B. Mortimer
5	Conditions	B. Mortimer
6	Soils and Physiography	B. Mortimer