



June 16, 2017

REVISED REPORT

Stage 1 Archaeological Assessment Minto Communities Subdivision, 6111 & 6141 Hazeldean Rd Stittsville Part Lots 23 & 24 Concession 12 Geographic Township of Goulbourn Former County of Carleton City of Ottawa, Ontario

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REPORT





Executive Summary

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

Golder Associates Ltd. (Golder) was contracted by Minto Communities (Minto) to conduct a Stage 1 archaeological assessment of the proposed Minto subdivision at 6111 & 6141 Hazeldean Road, Part Lots 23 and 24, Concession 12, Goulbourn Township, Stittsville, City of Ottawa. The total size of the study area is approximately 25 ha.

The objective of this assessment was to determine the presence of archaeological resources in the area that may be affected by the proposed development, and; if encountered recommend appropriate strategies for further assessment.

This archaeological assessment is being conducted to comply with the Planning Act and section 2.6 of the Provincial Policy Statement (2005). This assessment forms part of the conditions of draft plan approval for the development application and is to be completed as part of the pre-submission phase of the application process.

The study area encompassed two parcels identified for development (6111 Hazeldean Road to the east and 6141 Hazeldean Road to the west), with Feedmill Creek oriented west-east through the central portion of the study area and extending north to the future Maple Grove Road extension. A property inspection was conducted on November 13, 2013. Over half of the study area was treed and low-lying. The remaining portions of the property featured saturated lands, a small wetland and grassed areas. The entire grassed areas was identified as fill and consisted of large stone and gravel. Air photo, geotechnical survey and soil mapping confirmed that the area was once low-lying and in-filled to the level of the Hazeldean Road corridor.

The investigation included consultation with the Ministry of Tourism, Culture and Sport's updated archaeological site database, review of relevant historical, archaeological and environmental literature, examination of primary historical documentation including land registry records, assessment roles, census records and aerial photographs and review of geotechnical investigation of the study area (Paterson 2012).

Although no archaeological sites are registered in the study area it is considered to have moderate aboriginal archaeological potential based on the City of Ottawa's Archaeological Master Plan and the MTCS' Standards and Guidelines for Consultant Archaeologists (2011). Feedmill Creek, a tributary of Carp River, is located within the center of the property which is considered a potential transportation corridor for aboriginal navigation as well as settlement. Historical site potential is associated with the location of known nineteenth century buildings and early transportation corridors. However, the study area is not within any significant range to possess potential for historical resources.

Based on the site assessment and features of archaeological interest within the study area, a Stage 2 test pit assessment is required for the undisturbed treed areas of the property. The Stage 2 investigation is to consist of a test pit survey at 5 m intervals. The central portion of the study area, situated on both sides of Feedmill Creek, was observed to consist of permanently wet and saturated soils, although further documentation will be required during the Stage 2 field investigation to delineate the boundaries of the wet area. Evidence of fill layers that range in depth from 0.89 m to 3.12 m above a Muck soil complex were determined from borehole logs, air photos and soil survey maps in the grassed areas (Paterson 2012) and as a result, do not require any further archaeological assessment.



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This report and MTCS consultation has formed the basis for the following recommendations:

- 1) That a Stage 2 archaeological assessment be conducted by a licensed archaeologist for the treed areas of 6111 & 6141 Hazeldean Road Minto property, prior to construction (Map 9, p.44). The Stage 2 archaeological assessment should consist of shovel testing at 5 m intervals;
- 2) That the central portion of the study area on both sides of Feedmill Creek, which was observed to consist of permanently wet and saturated lands, will be confirmed and delineated during the Stage 2 field investigation (Maps 8 and 9, pp.43 and 44); and,
- 3) That no further Stage 2 archaeological assessment for the remaining portions of the property covered by fill is required (Map 9, p.44).



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Project Personnel

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Abbreviations

| | |
|--------|--|
| Minto | Minto Communities |
| Golder | Golder Associates Ltd. |
| LAC | Library and Archives Canada |
| m | Metre(s) |
| MTCS | Ministry of Tourism, Culture and Sport |
| City | City of Ottawa |
| NAPL | National Air Photo Library |



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1.0 PROJECT CONTEXT

1.1 Development Context

Golder Associates Ltd. (Golder) was contracted by Minto Communities (Minto) to undertake a Stage 1 archaeological assessment of a subdivision located at 6111 and 6141 Hazeldean Road, Stittsville, Part Lots 23 & 24, Concession 12, Goulbourn Township, City of Ottawa (Maps 1 and 2, pp.36 and 37). This archaeological assessment is being conducted to comply with the *Planning Act* and section 2.6 of the Provincial Policy Statement (2005). This assessment forms part of the permitting requirements for the development application and is to be completed prior to any construction activities.

The subject property totals approximately 25 ha. The eastern parcel (6111 Hazeldean Road) extends from Hazeldean Road north to the future Maple Grove Road extension. The western parcel (6141 Hazeldean Road) is located north of a commercial property and extends to the future Maple Grove Road (Map 3, p.38).

The areas identified for development are sub-divided by Feedmill Creek which runs in an east-west direction through the central portion of the study area. The lands including and immediately adjacent to the watercourse, belonging to the City of Ottawa are formally prohibited from alteration and are part of the restrictive regulatory floodplain setback. This is regulated by the City of Ottawa's Environmental Protection Plan as part of the Official Plan under Section 4.7.3, Policy 2.c. which states "the minimum set-back...(is) 30 metres from the normal high water mark of rivers, lakes and streams".

Permission to access the study area for the purpose of conducting an archaeological site assessment required was provided by Erin O'Connor of Minto.

The subject property is included in *The Archaeological Resource Potential Mapping Study of the Regional Municipality of Ottawa-Carleton* (1999a, 1999b), herein referred to as the City of Ottawa archaeological master plan. According to this plan the majority of the study area has archaeological potential. Where development is proposed on land where archaeological potential exists, as identified on the City of Ottawa map "Areas of Archaeological Potential", the City will require an archaeological resource assessment to be conducted by an archaeologist licensed under the *Ontario Heritage Act*, as a condition of the development approval (City of Ottawa, 2011, n.p.).

1.1.1 Objectives

This Stage 1 Archaeological Assessment was completed to identify known archaeological resources on and in the vicinity of the study area as well as assess the archaeological potential of the subject property. The assessment will determine if any additional archaeological investigations are required. The objectives of a Stage 1 assessment are based on principles outlined in the *Ontario Heritage Act* (Consolidated 2007), and comply with the Ministry of Tourism, Culture and Sport's *Standards and Guidelines for Consulting Archaeologists* (2011). More specifically, studies were completed with the following objectives:

- To provide information about the property's geography, history, previous archaeological fieldwork and current land condition; and,
- To evaluate in detail the property's archaeological potential, which will support recommendations for Stage 2 survey for all or parts of the property.



1.2 Historical Context

Literature concerning the precontact history of Goulbourn Township is almost non-existent. Apart from passing references in works such as those noted below, there are a few general articles by Sowter (1900, 1901, 1909 and 1917), Kennedy's "Champlain Sea and Early Ottawa River Shoreline Studies, 1975" (Kennedy 1976) and Bruce Jamieson's An Inventory of the Prehistoric Archaeological Sites of Ottawa-Carleton (Jamieson 1989).

Our understanding of the local sequence of human activity in the study area following the recession of the last ice sheet and the Champlain Sea is incomplete. It is possible, however, to provide a general outline of prehistoric occupation in the Ottawa region based on the archaeological investigations conducted throughout eastern Ontario.

Published accounts of the history of Goulbourn Township include sections of Carleton Saga (Walker & Walker 1968), Goulbourn Memories (Goulbourn Township Historical Society 1996) and The Heritage of Goulbourn: A Driving Tour (Riedel 1990). Passing references are made in numerous histories of the National Capital area, for example Where Rivers Meet: an Illustrated History of Ottawa (Bond 1984) and History of the Ottawa Valley (Gourlay 1896). A description of the development of the township to 1879 can be found in Belden's Illustrated Historical Atlas of Carleton County (1879). The history of the village of Stittsville has been documented in Stittsville: A Sense of Place (Bottrill 1998), and that of the village of Richmond in Richmond on the Jock (Curry 1993), An Account of the Founding of Three Military Settlements in Eastern Ontario: Perth, Lanark and Richmond (Playter, n.d.) and Richmond 150: Yesterday and Today 1818-1968 (Richmond Town Council 1968). County Tales (Stittsville Women's Institute, Tweedsmuir History Committee 1973) contains accounts of the development of all the villages in Goulbourn Township, and its companion volume Farms and Families – Reflections from the Changing Countryside (Stittsville Women's Institute, Tweedsmuir History Committee c. 1969) documents many of the historic farmsteads in the rural areas of the township.

1.2.1 Regional Pre-European Aboriginal History

Human occupation of southern Ontario dates back approximately 10,000 years before present (BP). These first peoples, known as Palaeo-Indians to archaeologists, moved into Ontario as the last of the glaciers retreated northward. The former shores of the 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, contain remnants of some of their sites. Isolated finds of the distinctive, parallel-flaked Palaeo-Indian spear points have been recorded in the Rideau Lakes and north of Kingston (Watson 1982; Kennett and Earl 2000). Although there is limited information on the lifestyle of the Palaeo-Indians, the 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 would be the areas most likely to contain evidence of Palaeo-Indian occupation in this region. What is believed by some to be late Palaeo-Indian material has been found in several locations within the City of Ottawa including a site in Honey Gables as well as near Albion Road and Rideau Road, Innes Road, and north of the Mer Bleue close to the intersection of Navan Road and Page Road (Swayze 2001, 2003 & 2004). Although not without considerable controversy, some archaeologists have also indicated that areas in the vicinity of study area were occupied by late Palaeo Indian populations who utilized whatever rough stone materials available augmented by working of local chert and quartz.



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It was not until the succeeding Archaic Period (ca. 9,000 to 3,000 B.C.), 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 Paleo-Indian workmanship of stone tools was also lost, the archaic 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 the 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. 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 (Swayze 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 Bays (Daechsel 1980; Daechsel 1981).

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



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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. Two small Late Woodland sites were recently located on a property near the Village of Cumberland to the east of the study area (Ferris, 2002). A significant Woodland occupation has also 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 study area (Jamieson 1989).

1.2.2 Regional Post-European Canadian History

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 study 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 north east of the study area. 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



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Mississauga were cajoled 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). Two years after the 1791 division of the Province of Quebec into Upper and Lower Canada, 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 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. It would take several more years for permanent settlement to spread to the south side of the Ottawa River.

1.2.3 Goulbourn Township

Goulbourn Township was part of a large tract of Indian land purchased by the British Government in 1816, as part of a defense/settlement scheme north of the Rideau River. The township was roughly surveyed over the following years, together with Bathurst, Drummond and Beckwith Townships in Lanark County. To help counter a steady trickle of American settlers into Upper Canada, whose loyalty the Government felt could not always be relied upon, immigrants from the British Isles were given government assistance to travel to and homestead upon the new two hundred acre lots. Much of rural Goulbourn was settled by immigrants from Ireland between 1821 and 1824 (Walker & Walker 1968: 489).

The first permanent community in the township was established in the third concession near the south-east corner of the township. In 1818, 400 members of the British 99th Regiment and their families constructed a road from Bytown (Ottawa) and settled in and around the carefully planned village of Richmond (Bond 1984: 29). Though most of the settlers were disbanded military, a number were tradespeople who accompanied the expedition or arrived shortly after to provide essential services for the community. By 1820 a grist mill and school house had been erected. By 1821 a sawmill, and in the next few years, both an Episcopal and Catholic church were built. Soon thereafter, the village may have had as many as twenty stores and a dozen breweries and distilleries. Though initially the most important settlement in the county, with the construction of the Rideau Canal (1826-1832) and the shift in military focus to Bytown, the village went into a gradual but steady decline. In spite of becoming an independent municipal corporation in 1850, by 1879 Richmond had only four general stores, two harness shops, four blacksmith shops, two wagon shops, three shoe stores, one tailor, one combined grist and saw mill, one water mill, two hotels, four churches, a school and a town hall (Belden, 1879a: 198-201).

Ashton, located on the border with Beckwith Township, was one of the early villages in the township. The second largest nineteenth century village in the township began its existence as 'Mount Pleasant' in the early 1820's. The first saw mill was built there by John Sumner in the mid-1820's, together with a potash works and a general store, and by the mid-nineteenth century the village had grown considerably to include three general stores, two taverns, a tannery, three blacksmith shops, three wagonmaker's shops, two tailors, a small foundry, a harness shop, three carpenters, a post office, a school and two churches (Walker & Walker 1968: 494-496; Belden 1879: 252).



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Relevant to the study area, the community of Stittsville emerged on Lot 23, Concession 11 in the early 1820s. The original community was located at the junction of the Carp Road and the 12th Line (Hazeldean Road). Jackson Stitt, for whom the village was named, acquired property in the area in the 1830's. He was the first post-master in 1854. By 1864 Stittsville had a population of about 100, together with all the businesses and social institutions necessary for a thriving settlement. With the exception of one stone building, the village was swept away by the "great fire" of 1870. At the same time the Canada Central Railway was constructed to the south of the original village site. When reconstruction was completed much of the business community had migrated to the new transportation route in Lot 23, Concession 10. This area came to be known as New Stittsville and the original village became Old Stittsville. By 1879 the new community had two general stores, a hotel and a number of tradesmen's shops (Bottrill 1998: 22-28; Walker & Walker 1968: 500; Belden 1879a: 251).

Of the other early hamlets, Munster by 1879 had a store, two blacksmith shops, a school, a temperance hall, an Orange Hall and a Methodist church. Rathwell's Corners was home to the township Council, though according to Belden it lay "in the midst of a most uninviting tract of country, and dilapidation and deterioration seem to threaten its existence, though it was in the early days of the Township quite a little Village, with a couple of stream mills in the immediate vicinity, and any quantity of tradespeople" (Belden 1879a 251). In contrast Hazeldean in the north-east corner of the township, east of the subject property, (settled between 1818 and 1819) was, in Belden's opinion, "situated very pleasantly in the midst of a most delightful agricultural country" (Belden 1879a: 253). By 1879 it contained a general store, a few tradesmen's shops, a school, two churches a temperance hall and an Orange hall. Finally Dwyer's Hill toward the south-west corner of the township had a post office and a small store (Belden 1879a : 251 and 253; Walker & Walker 1968: 501-506).

As indicated above, most of the township was devastated by a vast forest fire in 1870, which also affected other portions of Carleton County. Nine years later, when surveying the county Belden found most of Goulbourn to be still unpalatable:

The "great fire" of 1870, and subsequent ones in many places, have swept most of what valuable timber was then left upon it, except where it was in isolated patches; and altogether the dreariness and feeling of desolation experienced by traveling through many parts of it exceed those imparted by contact with the wildest imaginable waste of forest, simply, for long distances nought intervening to break the line of the horizon but the few charred stubs still standing among impenetrable "windfalls" of their mates (Belden, 1879a: 250).

Transportation through the region was provided by a series of roads. At first no more than tracks through the bush, they were gradually improved to become passable for horse-drawn traffic. Richmond was already linked in 1818 to what was to become Bytown; in 1820 a trail was forced westward to Perth (Bottrill, 1998: 6). Large areas of swamp and bog in the township made laying a complete grid-system of roads impossible. In many cases trails were forced through at odd angles, wherever the ground allowed passage. The Canada Central Railway (later part of the Canadian Pacific Railway) was constructed across the township along the line between the Tenth and Eleventh Concessions. Stations were established at Stittsville and Ashton.

Hazeldean Road is part of the 12th line that would have been established when the township was surveyed and lots granted between 1818 and 1828. The corridor's importance increased when linked with Bells Corners and the Richmond Road in 1833 as it provided more direct access for area residents to Bytown. The construction of the railway in 1870 somewhat diminished transportation along the route. Highway 15 was established in the early 1920's out of a network of rural roads extending from Kingston through to Ottawa. Hazeldean Road was incorporated into this network and subsequently twinned with Highway 7 connecting Ottawa with Carleton Place.



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Land registry records indicate there were improvements made to the road in the late 1940's resulting in the expropriation of additional lands along the corridor. The study corridor loops northwestward around the area of Old Stittsville, a change made in the early 1960's that appears to accommodate the beginning of urban development in this area.

1.2.4 Property History

The Minto property is located on Lots 23 and 24, Concession 12. Documents reviewed in order to understand the property history of the study area include the Land Registry Abstract Indices held at the Land Registry Office in Ottawa, the available assessment rolls and census records held at the National Archives of Canada (1834 to 1901) and available nineteenth century maps including the 1863 Walling and the 1879 Belden maps, 1906 topographic map (Map 4, p 39) and aerial photographs from the National Air Photo Library (NAPL) dating from 1932, 1971 and 1999 (Map 5, p.40).

Lot 23

West Half

This lot was patented in 1811 to Robert Howard and William Thompson. John Moore purchased, in 1831, the lot from Samuel Roach (Inst. RO 879). Moore sold the property to Howard Thompson in 1835 (Inst. RO880). William Thompson sold the property in 1870 to John and Rebecca Bradley (Inst. GB 184 and GB 332). The lot was then severed with a number of parcels sold through the 1870's. By 1884 Chester Spearman had acquired the bulk of the property, selling it in 1884 to Adam Abbott (Inst. GB2337). Abbott sold his portion of the lot in 1905 to Mary Steale. James Steale sold this portion of the lot in 1943 to John Potter for \$ 800.00 (Inst. GB9495). Potter further severed the lot in the 1950's marking the beginning of urban expansion in the vicinity of old Stittsville.

East Half

Thomas Guile was granted the east half of Lot 23 in 1824. Guile sold the lot in 1840 to Edward Bassett. It was from Bassett that Jackson Stitt, for whom Stittsville is named, purchased the property in 1844. Stitt sold the property in 1857 to William Alexander, who in turn passed the property to Andrew Alexander. Two small portions of the lot were sold in late 1857 and 1860. The earlier purchase was by George Bradley, who sold the property in 1862 to Francis Charlebois. Charlebois in turn sold the small lot in 1868 to Thomas Warren. James Alexander purchased 49 acres from Andrew in 1874. The lot was further subdivided in the 1870's with the rebuilding of Stittsville following the fire of 1870. By 1906 James Steele had obtained 80 acres of the lot. There are a number of subsequent property transactions all reflecting the continued development of Stittsville property through the mid twentieth century.

Lot 24

This property was not granted until 1859 when Joshua Bradley obtained the lot. It is Joshua's name that appears in the 1879 atlas (see Figure 2) of the study area. Joshua Bradley sold the lot to Joshua Bradley (a grandson of Joshua Sr.?) for \$ 3,000.00 (Inst. GB 6820). Joshua Bradley divided the property in 1921 between Joshua E. Bradley (Inst. GB 7688) and John C. Bradley (Inst. GB 7689). There were a series of expropriations by the Department of Highways dating 1948, 1954, 1955 and 1956, the later ones presumably for the corridor bypass. John Bradley began to sell parcels of his portion of the lot in 1957, while Arnold Bradley acquired the other half from Joshua E. Bradley in 1964 (GB 14783).



Topographic Map and Air Photo Review

The 1906 Topography map of Ottawa (Map 4, p.39) illustrates the houses built in Old Stittsville were located north and south along the original Hazeldean Road alignment, outside of the subject study area. Evidence of Feedmill Creek is also visible on the map as it is currently present, running west-east within the study area. Due to the proximity of the study area to the Creek, the property is deemed to possess moderate to high archaeological potential.

Review of aerial photographs from 1932, 1971 and 1999 was undertaken to determine how the study area has developed over time and to identify any previous features or disturbances that might indicate archaeological potential (Map 5, p.40). The 1932 aerial photograph shows that the entire study area was once sparsely overgrown and treed. By 1971, the property was a densely treed area with no visible features or structures besides the newly developed Hazeldean Road which now looped north around Old Stittsville. Commercial and residential use of the area increased during the 1990s, which can be seen in the 1999 air photo. Both the south and the northwest corner of 6141 Hazeldean Road property was cleared of vegetation, in-filled and leveled also supported by the property inspection and recent geotechnical investigations as discussed below.

Disturbances Related to Recent Land Development

Geotechnical investigation of the study area by Paterson, conducted in 2012, revealed a high concentration of fill material located in those areas cleared of vegetation seen in the 1999 aerial photograph and identified during the site visit (Images 13 and 14, p.33; Map 5, p.40). The results of the borehole logs indicated that the northwest corner to the south-central area of 6141 Hazeldean Road consisted of silty sand with gravel, cobbles and fractured rock inclusions (Map 6, p. 41). This layer ranged from 3.12 m in the northwest to 0.89 m in the south-central areas of the property before reaching buried topsoil. The area was once low-lying and in-filled to the same level as Hazeldean Road. This fill material and leveling of the property was conducted by the previous land owners in the 1990s that had planned to sell the entire leveled portion of the property for commercial purposes.

The geotechnical investigation did reveal that buried topsoil still remains under substantial depths of fill material within parts of the study area (refer to Section 1.3.1).

1.3 Archeological Context

1.3.1 Study Area

Environment

The study area lies within the Smiths Falls Limestone Plain physiographic region (Chapman & Putnam 1966). The limestone plain is characterized by shallow soil over limestone bedrock. This landscape is flat having poor drainage with depressions forming swamps, bogs and wetlands.

Several soil types are represented throughout the property (Map 7, p.42). In the southeastern corner and a small area north within the study area consists of Farmington Loam soils. These loamy soils are typically found 3 feet above bedrock and feature moderate drainage. The western portion of the study area features a deposit of Kars soil consisting of gravelly sandy loam or coarse sandy loams with excessive drainage. Cutting east-west through the centre of the property encompassing Feedmill Creek (Images 1 to 4, pp.27 to 28) is a wide strip of Muck which consists of poorly drained organic material. Primary drainage within the study area is provided by this tributary of the Carp River located 3.2 km to the east.



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The Township of Goulbourn lies close to the western edge of the Upper St. Lawrence sub-region of the Great Lakes/St. Lawrence Forest Region (Rowe 1977). The trees characterizing this sub-region include sugar maple, beech, red maple, yellow birch, basswood, white ash, largetooth aspen, red oak and burr oak. Coniferous species include eastern hemlock, eastern white pine, white spruce and balsam fir. Poorly drained areas typically contain swamp adapted hardwoods and black spruce or white cedar. Largetooth aspen, white birch, balsam fir and white spruce are common regrowth species after devastation by fire (Rowe 1977: 94).

The study lies within an area with very poor to poor capability for waterfowl production (Arsenault & Johnson 1970) fair to good capability for ungulates (Brassard & Bouchard 1971) and poor to excellent soil capability for agriculture (Hoffman 1967). These factors are important when considering the pre-contact potential of the study area and its ability to support human populations.

A property inspection of the study area was conducted on November 13, 2013 to help determine its archaeological potential. The general landscape of the property consisted of roughly equal parts treed and grassed areas (Image 5, pg. 29). The terrain was slightly undulating in the treed areas with evidence of exposed bedrock to the north and south (Images 6 and 7, pp.29 and 30). The forest floor also featured some open spaces and some seasonally wet and moss covered areas (Images 8 and 9, pp.30 and 31). A wetland was discovered in the south-central portion of the study area along the western edge of the woodlot (Images 10 and 11, pp.31 and 32). The wetland was located in a low-lying area in comparison to the 1.5-2.5 m higher grassed area to the west. The remaining grassed areas to the west featured level topography (Image 12, pg. 32). Fill material was observed throughout the northwest portion of the property, particularly along the treeline where the elevation of the land was higher to the west than the low-lying woodlot (Images 13-15, pp.33 - 34).

As mentioned above, a shallow watercourse (Feedmill Creek) runs west to east through the central portion of the study area (Images 1-4, pp.27 - 28). This area was observed to consist of permanently saturated lands on both sides of Feedmill Creek.

Results of the 2012 geotechnical survey (Paterson) of the property provided clear evidence of Muck located under the areas of modern fill mentioned above (refer to Section 1.2.4) to the west and south-central portions of the property. West of Feedmill Creek, it was documented that the open area featured 3.0 to 3.12 m of silty sand with gravel, cobble and fractured rock fill above 10 to 28 cm of black organic peat. The open area southeast of the creek consisted of 1.07 to 2.08 m of fill above 60 to 2.1 m of grey silty sand topsoil. The surrounding wooded areas featured very shallow topsoil and in some instances no topsoil, but rather exposed bedrock (average 5-10 cm topsoil thickness). It is suggested that the topsoil found under the fill layers are not topsoil but confirmed Muck as identified in the soil mapping (Map 6, p.41).

1.3.2 Previous Research and Archaeological Investigations

One archaeological investigation falls within the study area undertaken by Heritage Quest in 2000. The investigation consisted of a Stage 1 archaeological assessment of the proposed widening for Hazeldean Road from Terry Fox Drive to the Old Carp Road. The proposed study area encompassed the northern 50 m of Hazeldean Road within the present study area Lots 23 and 24, Concession 12. This area was identified as having moderate aboriginal potential due to its proximity to the wetland located to the north and recommended for further stage 2 testing.



STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION

There has also been a moderate amount of archaeological assessment work done in the general region of the study area although discussed will be the studies conducted in the immediate vicinity. Table 1 summarizes the details of each study.

Table 1: Summary of Archaeological Assessment Studies in the Study Area Vicinity

| PIF # | Stage | Location/Site | Consultant | Year | Identified Sites | Recommendation |
|-----------------------------|-------|---------------------------------|------------------------|------|--|--|
| 2001-033-13 | 2 | Lots 26-30, Concessions 11 & 12 | Heritage Quest | 2001 | None | That the soil stripping and grading of that segment of the corridor in Lot 28, Concession 12, within 100 metres of the Carp River Tributary be monitored by a licensed archaeologist. That, unless the proposed parameters of the right-of-way are expanded following this study, No additional archaeological investigation of the remaining portion of the corridor is required. |
| P051-129-2007 | 1/2 | Lot 26, Concession 12 | Golder Associates Ltd. | 2007 | Hartin-1 (BhFx-36); Hartin-2 (BhFx-37) | That a Stage 3 archaeological assessment be undertaken of the Hartin-1 Site, BhFx-36, a precontact site located in the northwest corner of the property; 2) That a Stage 3 archaeological assessment be undertaken of the Hartin-2 Site, BhFx-37, a possible precontact site consisting of a concentration of natural chert, located in the north end of the property; |
| P051-142-2007 P051-143-2007 | 3 | Lot 26, Concession 12 | Golder Associates Ltd. | 2008 | Hartin-1 (BhFx-36); Hartin-2 (BhFx-37) | That no additional archaeological investigation of the Hartin-1 (BhFx-36); Hartin-2 (BhFx-37) is required. |

1.3.3 Archaeological Sites

The primary source of information regarding known archaeological sites in the study area is the MTCS' archaeological site database. A current version of this database was consulted for the present assessment and it was determined that there were no registered archaeological sites within a 1 km range.



2.0 FIELD METHODS

A property inspection was carried out on November 13, 2013. The objective of the inspection was to help identify the appropriate Stage 2 archaeological assessment strategy and to determine the presence or absence features of archaeological potential. The inspection consisted of walking through the subject property and randomly spots checking different locations within it. The inspection covered the entire study area and was conducted in overcast weather, with a temperature of 6 degrees Celsius.

Field notes and photographs of the property were taken during the inspections. The photograph locations and directions were noted and all photographs were catalogued (Appendix A). All photograph locations and directions referenced in this report have been shown on Map 2, p.37. No archaeological remains were noted during the course of the property inspection.

Features which would affect the archaeological strategy included a low lying wetland in the south-central portion of the study area. Also noted were those areas with mature trees and bushes that would require shovel testing, making up the majority of the study area, and those which were recently impacted by fill and unsuitable for ploughing.

The wetland in the south-eastern and central portions was deemed unsuitable for testing due to water logging. The large portion of the study area which was levelled by fill material and identified as Muck soil type is also unsuitable for testing. Other small areas that featured exposed bedrock fit into this category as well.

Areas which would require shovel testing included all areas within the treed and overgrown portions of the site to the north, east and south. Results from the Geotechnical study and aerial photographs were confirmed by the presence of fill throughout the open grassed areas located in the western portion of the property. These areas do not require any further archaeological investigation as approved by discussions with the MTCS on April 21, 2014.

The property inspection also confirmed the results of the background research which indicated the presence of two features which affect aboriginal potential. These include the presence of Feedmill Creek which divides the center of the study area and the elevated topography to the northwest of the property.



3.0 ANALYSIS AND CONCLUSIONS

3.1 Archaeological Potential

There are a number of criteria employed in the assessment of archaeological site potential. For aboriginal sites, these criteria are principally focused on the topographical features of the landscape including ridges, knolls and eskers, and the type of soils found within the area being assessed. For post-contact or historic sites, documentary evidence such as maps and census records may indicate areas of settlement and activity. These criteria were formulated in close consultation with the MTCS's set guidelines for archaeological resource potential mapping (2011) (Map 8, p.43).

According to the MTCS modelling criteria, lands within 300 metres of watercourses with mapped floodplains and wetlands are considered to have aboriginal site potential. Further, areas up to 300 metres from abandoned Ottawa and Rideau River terrace scarps have aboriginal site potential. In the case of drumlins and eskers, the entire feature has aboriginal potential. Areas near historical schools, churches, commercial buildings, industrial sites and early settlement roads are considered to have potential within 100 metres of the structure, known structure location or settlement road, the last with the object of locating early pioneer homes. Areas within 100 metres of historical railways are also considered to have site potential and, finally, any area within 300 metres of a registered or unregistered archaeological site.

The following assessment of archaeological potential has also been formulated in consultation with the Archaeological Resource Potential Mapping Study of the Regional Municipality of Ottawa-Carleton: Technical Report (Archaeological Services Inc. & Geomatics International Inc. 1999). Hereafter referred to as the Archaeological Master Plan, this report identifies areas of archaeological potential within the now amalgamated City of Ottawa and sets out guidelines for requiring testing. These guidelines also follow the Checklist for Determining Archaeological Potential developed by the Ontario Ministry of Tourism and Culture (1993) for archaeological assessments.

The Archaeological Master Plan does indicate that a large portion of the study area has archaeological potential (Map 8, p.43). Aboriginal potential covers the entire study area and is considered moderate to high due to Feedmill Creek, although the low-lying wetland and Muck soil type area should be exempt from further Stage 2 assessment (refer to sections 1.2.4 and 1.3.1). Historic archaeological potential within the study area is low. Although background research has shown that the region has been occupied since the nineteenth century, historic maps, land registry records and research indicate that all evidence of historic roadways and structures are located outside of the MTCS criteria range.



4.0 RECOMMENDATIONS

Based on the historic background documentation, the property inspection and the results of the geotechnical investigation (Paterson 2012), portions of the subject property have archaeological potential and will require further archaeological assessment and possible mitigation should archaeological sites be found. A Stage 2 assessment in the form of shovel testing at 5 m intervals is recommended in areas with tree cover which inhibits the possibility of ploughing. The central portion of the study area identified as comprising saturated lands should be visually assessed during the Stage 2, with permanently wet areas delineated and mapped during the Stage 2. No further work is recommended in the areas that feature 1990's fill and Muck soil type as outlined in Map 9, p.44.

This report and with MTCS consultation has formed the basis for the following recommendations:

- 1) That a Stage 2 archaeological assessment be conducted by a licensed archaeologist for the treed areas of 6111 & 6141 Hazeldean Road Minto property, prior to construction (Map 9, p.44). The Stage 2 archaeological assessment should consist of shovel testing at 5 m intervals;
- 2) That the central portion of the study area on both sides of Feedmill Creek, which was observed to consist of permanently wet and saturated lands, will be confirmed and delineated during the Stage 2 field investigation (Maps 8 and 9, pp.43 and 44); and,
- 3) That no further Stage 2 archaeological assessment for the remaining portions of the property covered by fill is required (Map 9, p.44).



5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Tourism, Culture and Sport as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the 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.

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 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 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."



6.0 IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Golder Associates Ltd. (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 Minto Communities Inc. (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 Ministry of Tourism, Culture and Sport's Standards and Guidelines for Consultant Archaeologists (2011).



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8.0 IMAGES



STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION



Image 1: Western point of Feedmill Creek, looking northwest.



Image 2: View of Feedmill Creek running west-east through central portion of property, looking east.



STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION



Image 3: View of Feedmill Creek and wetland area east of property, looking northwest.



Image 4: Easternmost point of Feedmill Creek and wetland area, looking west from neighbouring subdivision.



STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION



Image 5: Overgrown and treed portion of the study area to the right versus the grassed area of the commercial property outside of the study area to the left, looking north.



Image 6: Evidence of shallow soil and exposed bedrock in south-eastern corner of study area, looking south.



STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION



Image 7: Exposed bedrock in northern limits of study area, looking southwest.



Image 8: Forested area with clear accessibility and dry, looking east.



Image 9: View of forested area featuring poor drainage and mossy conditions, looking west.



Image 10: View of low-lying wetland on western border of forested area, looking east.



STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION



Image 11: View of low-lying wetland and raised grassed area to west, looking southeast.



Image 12: View of grassed area in northwest corner.



STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION



Image 13: Evidence of different elevations from grassed area versus forested area from fill material, looking north.



Image 14: Large rocks border the area between the forest and grassed area suggesting fill, looking southeast.



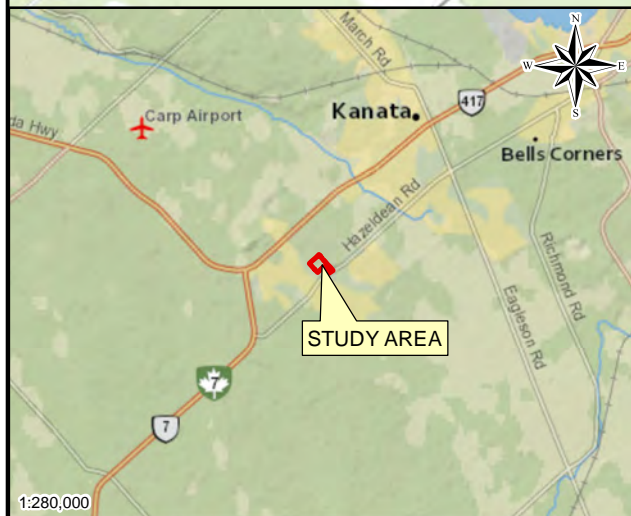
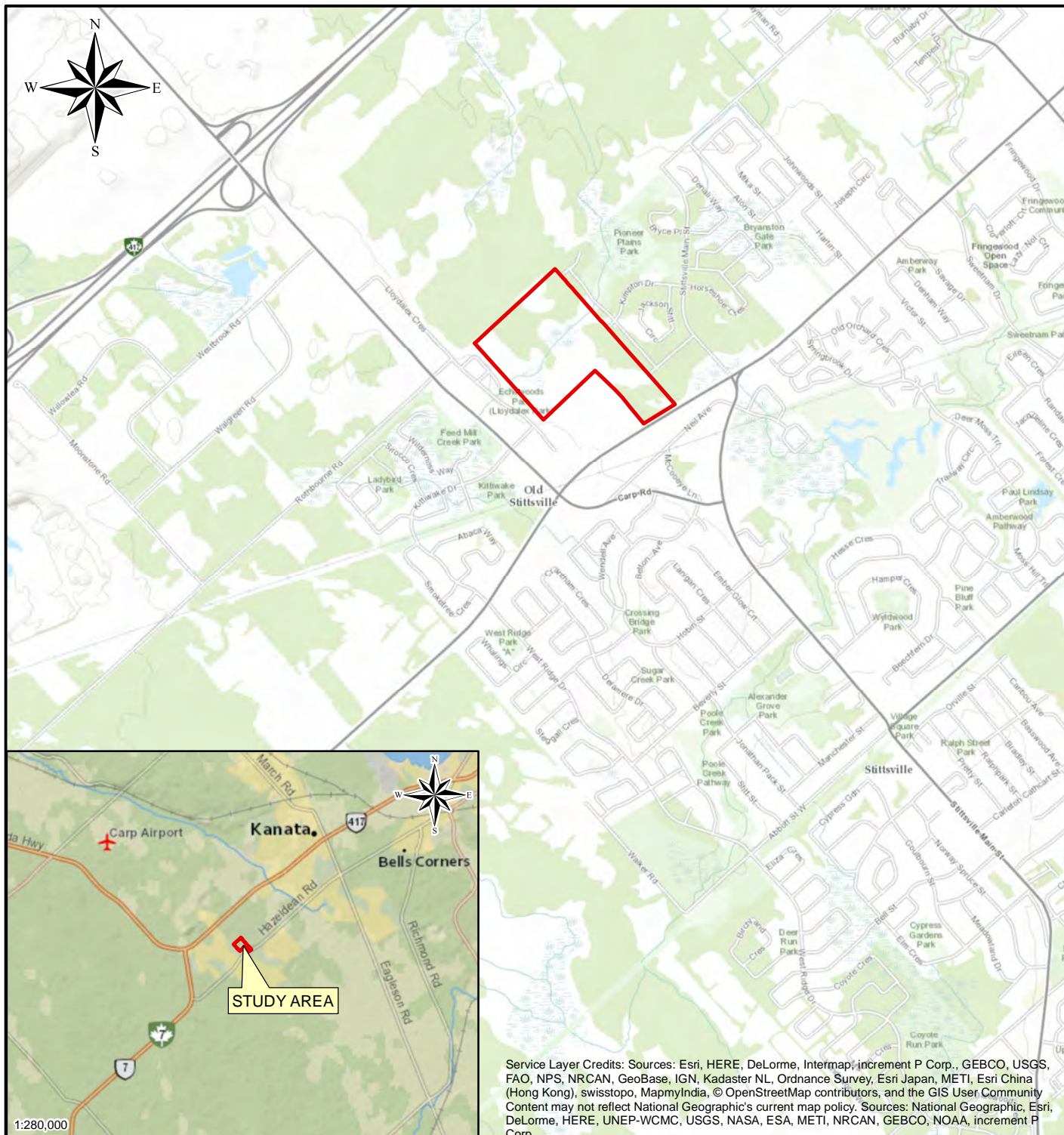
STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION



Image 15: Open grassed area with level topography in center of study area, looking east.



9.0 MAPS



LEGEND

STUDY AREA

NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT No. 13-1125-0111/1000.

REFERENCE

DATUM: NAD 83, COORDINATE SYSTEM: MTM ZONE 9



| | |
|--------|------------|
| DATE | 2014-04-25 |
| DESIGN | EW |
| GIS | BR |
| CHECK | EW |
| REVIEW | HJD |

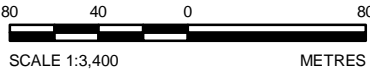
| | | |
|-----------------------------------|--|--|
| TITLE | KEY PLAN | |
| PROJECT | | |
| STAGE 1 ARCHAEOLOGICAL ASSESSMENT | MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO | |
| MAP 1 | | |

N:\Active\2013\1125 - Environmental and Civil Engineering\13-1125-0111 Stage 1 Hazeldean Rd_Minto\04-Spatial_IM\GIS\WXDs\1311250111-1000-02.mxd



LEGEND

- PHOTO LOCATION AND DIRECTION
- PROPOSED DEVELOPMENT
- ROAD
- HYDRO LINE
- CONTOUR LINE (m)
- WATERCOURSE
- GEOGRAPHIC TOWNSHIP/CONCESSION/LOT
- STUDY AREA



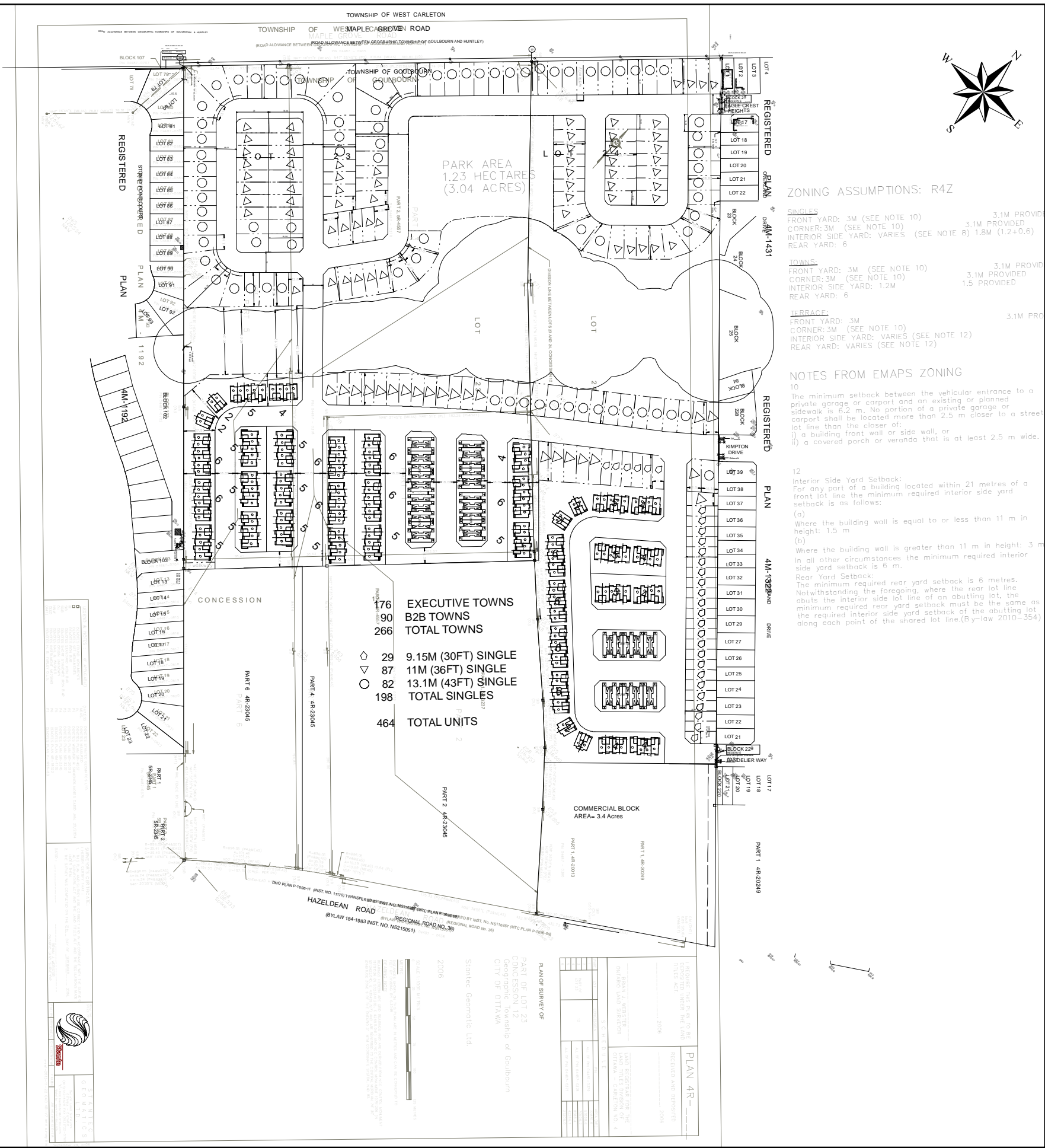
NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 13-1125-0111/1000.

REFERENCE

BING MAPS AERIAL, (C) 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS, JULY 2013.
LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2011.
AUTOCAD PLAN PROVIDED BY MINTO. DECEMBER 2013.
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: MTM ZONE 9

| | | | | |
|--------------------------------------|---|-----|------------|----------|
| PROJECT | STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO | | | |
| | TITLE | | | |
| PROJECT No. 13-1125-0111 | SCALE AS SHOWN | | | REV. 0.0 |
| | DESIGN | EW | 2013-12-06 | |
| Golder Associates Ottawa, Ontario | GIS | BR | 2014-04-25 | MAP 2 |
| | CHECK | EW | 2014-04-25 | |
| | REVIEW | HJD | 2014-04-25 | |
| | | | | |



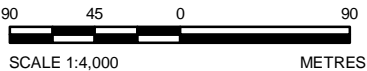
ZONING ASSUMPTIONS: R4Z

SINGLES
FRONT YARD: 3M (SEE NOTE 10) 3.1M PROVIDED
CORNER: 3M (SEE NOTE 10) 3.1M PROVIDED
INTERIOR SIDE YARD: VARIES (SEE NOTE 8) 1.8M (1.2+0.6)
REAR YARD: 6

NOTES FROM EMAPS ZONING

The minimum setback between the vehicular entrance to a private garage or carport and an existing or planned sidewalk is 6.2 m. No portion of a private garage or carport shall be located more than 2.5 m closer to a street lot line than the closer of:

- a building front wall or side wall, or
- a covered porch or veranda that is at least 2.5 m wide.



NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 13-1125-0111/1000.

REFERENCE



LAND AND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD.
UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS
PRINTER 2011.
AUTOCAD PLAN PROVIDED BY MINTO. DECEMBER 2013.
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: MTM
ZONE 9

PROJECT

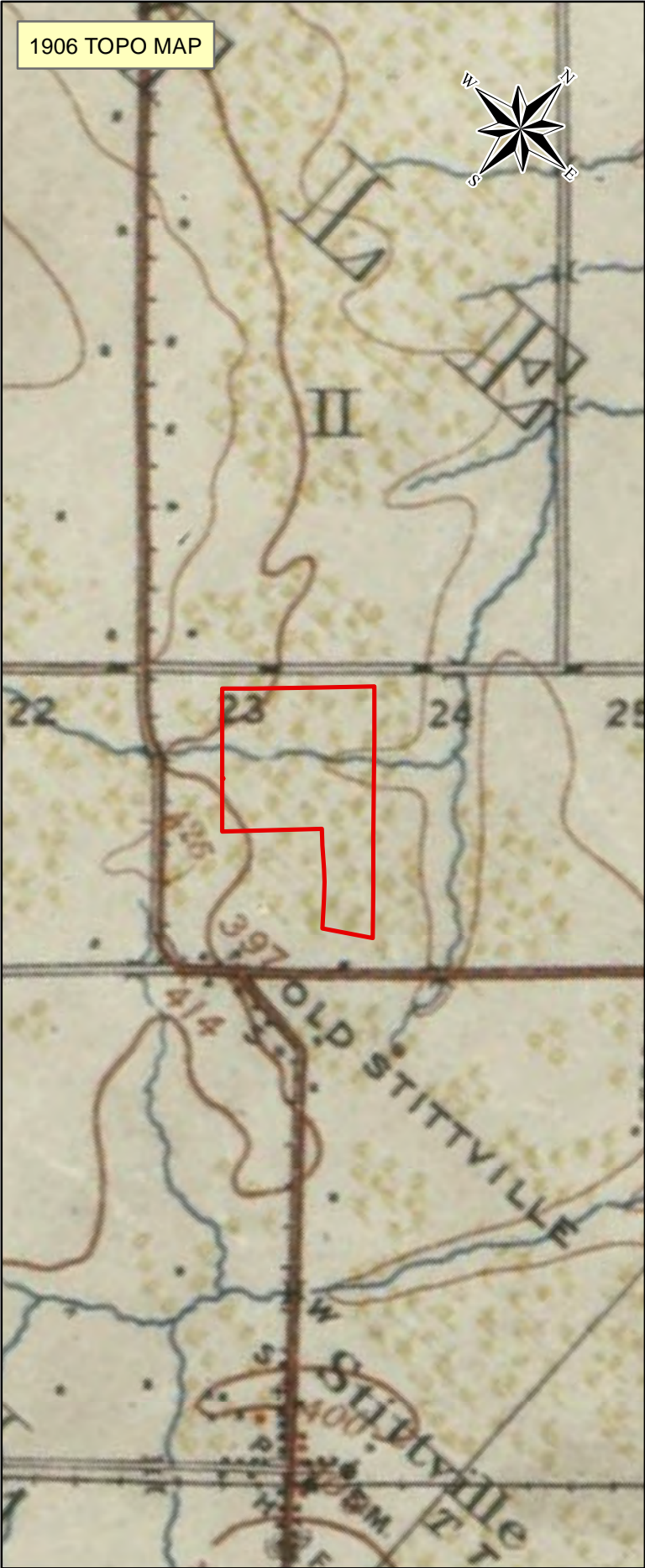
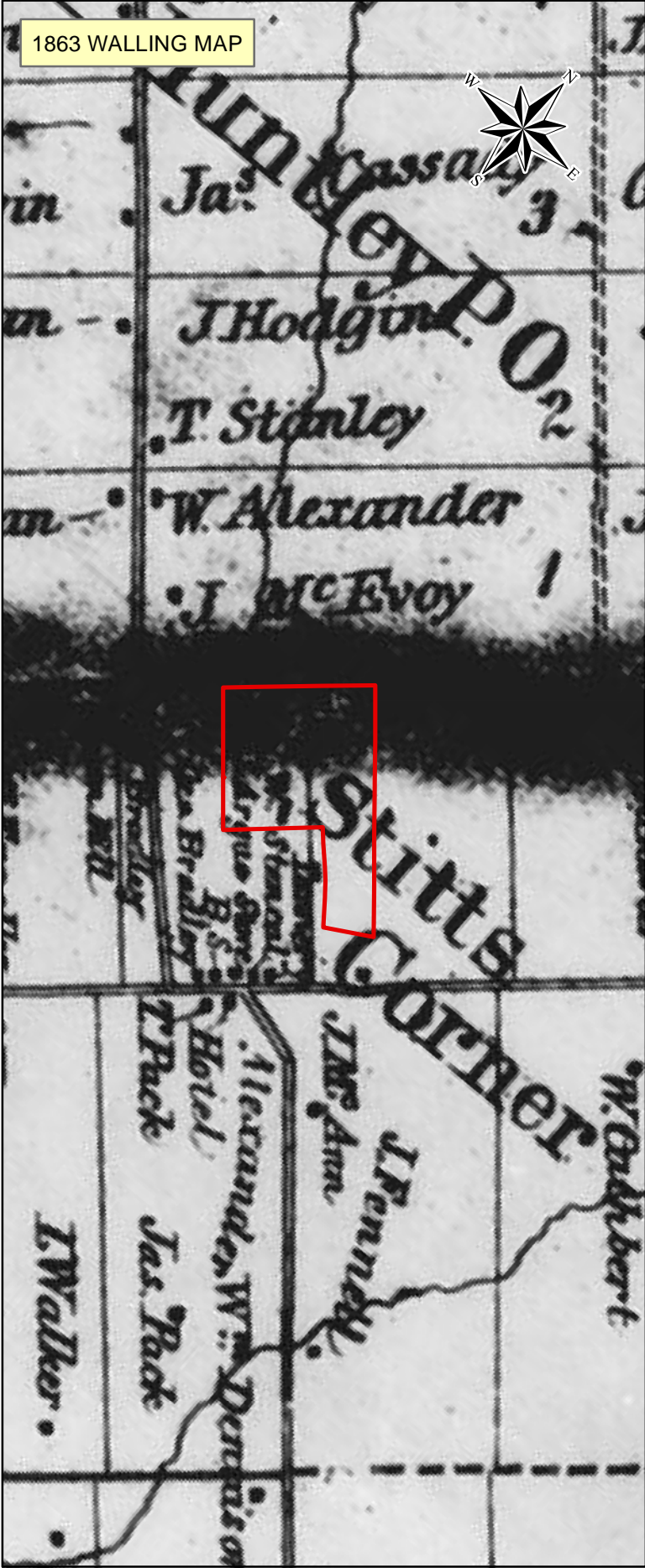
STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO

TITLE

DEVELOPMENT PLAN

| | | | | | |
|---|--------------------------|-----|------------|--|--------|
|  <p>Golder Associates Ottawa, Ontario</p> | PROJECT No. 13-1125-0111 | | | SCALE AS SHOWN | REV. 0 |
| | DESIGN | EW | 2013-12-06 |  <p>MAP 3</p> | |
| | GIS | BR | 2014-04-25 | | |
| | CHECK | EW | 2014-04-25 | | |
| | REVIEW | HJD | 2014-04-25 | | |

N:\Active\2013\1125 - Environmental and Civil Engineering\13-1125-0111 Stage 1 Hazeldean Rd_Minto\04-Spatial_IM\GIS\WXDs\1311250111-1000-04.mxd



LEGEND

STUDY AREA

NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 13-1125-0111/1000.

REFERENCE


1863 WALLING MAP - NLAC NMC 43061;
1879 BELDEN MAP - BELDEN, 1879:31;
1906 TOPO MAP - NMC 18372;
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: MTM ZONE 9

PROJECT

STAGE 1 ARCHAEOLOGICAL ASSESSMENT
MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO

TITLE

HISTORIC MAPS

| | | | | | |
|---|--------------------------|-----|------------|----------------|----------|
|  | PROJECT No. 13-1125-0111 | | | SCALE AS SHOWN | REV. 0.0 |
| | DESIGN | EW | 2013-12-06 | MAP 4 | |
| | GIS | BR | 2014-04-25 | | |
| | CHECK | EW | 2014-04-25 | | |
| | REVIEW | HJD | 2014-04-25 | | |

N:\Active\2013\1125 - Environmental and Civil Engineering\13-1125-0111 Stage 1 Hazeldean Rd_Minto\04-Spatial_IMG\GIS\WXDs\1311250111-1000-05.mxd



LEGEND

STUDY AREA

2501250250


SCALE 1:10,000METRES

NOTE

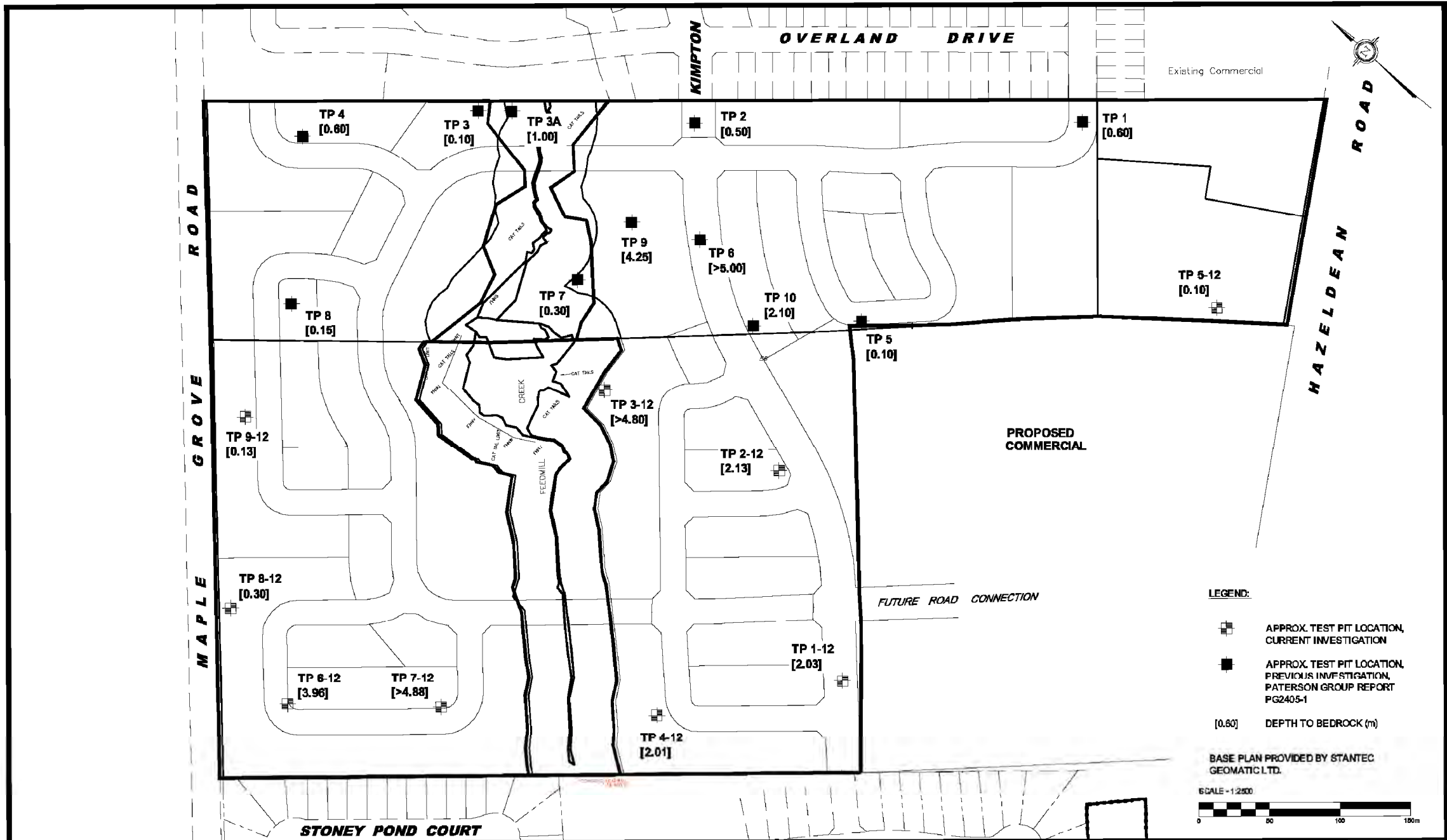
THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 13-1125-0111/1000.

REFERENCE

1932 AIR PHOTO - NAPL, A4432-32.
1971 AIR PHOTO - NAPL, A22560-007.
1999 AIR PHOTO - NAPL, A31789-087.
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: MTM ZONE 9

| | | | | | | |
|---|--------------------------|----------------|---|----------|--|--|
| PROJECT | | | STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO | | | |
| TITLE | | | AERIAL PHOTOS | | | |
|  | PROJECT No. 13-1125-0111 | | SCALE AS SHOWN | REV. 0.0 | | |
| | DESIGN | EW 2013-12-06 | | | | |
| | GIS | BR 2014-04-25 | | | | |
| | CHECK | EW 2014-04-25 | | | | |
| | REVIEW | HJD 2014-04-25 | | | | |
| MAP 5 | | | | | | |

N:\Active\2013\1125 - Environmental and Civil Engineering\13-1125-0111 Stage 1 Hazeldean Rd_Minto\04-Spatial_I\GIS\WXDs\1311250111-1000-06.mxd



paterson group
consulting engineers
154 Colonnade Road South, Ottawa, Ontario K2E 7J5

Scale: 1:2500
Des.: MK
Dwn: MPG
Chkd: AJT

MINTO COMMUNITIES INC.
GEOTECHNICAL INVESTIGATION
PROP. RESIDENTIAL DEVELOPMENT - HAZELDEAN ROAD
OTTAWA, ONTARIO

TEST HOLE LOCATION PLAN

Dwg. No.
PG2703-1
Report No. PG2703-1
Date: 06/2012

70 35 0 70
SCALE 1:3,400 METRES

NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 13-1125-0111/1000.

REFERENCE

BOREHOLE LOCATIONS MAP FROM PATERSON GROUP REPORT GEOTECHNICAL INVESTIGATION, PROPOSED RESIDENTIAL DEVELOPMENT, 6111 AND 6141 HAZELDEAN ROAD, OTTAWA (STITTSTVILLE), ONTARIO. 2012-08-02, REPORT NO. PG2793-1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2011. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: MTM ZONE 9

PROJECT
STAGE 1 ARCHAEOLOGICAL ASSESSMENT
MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO

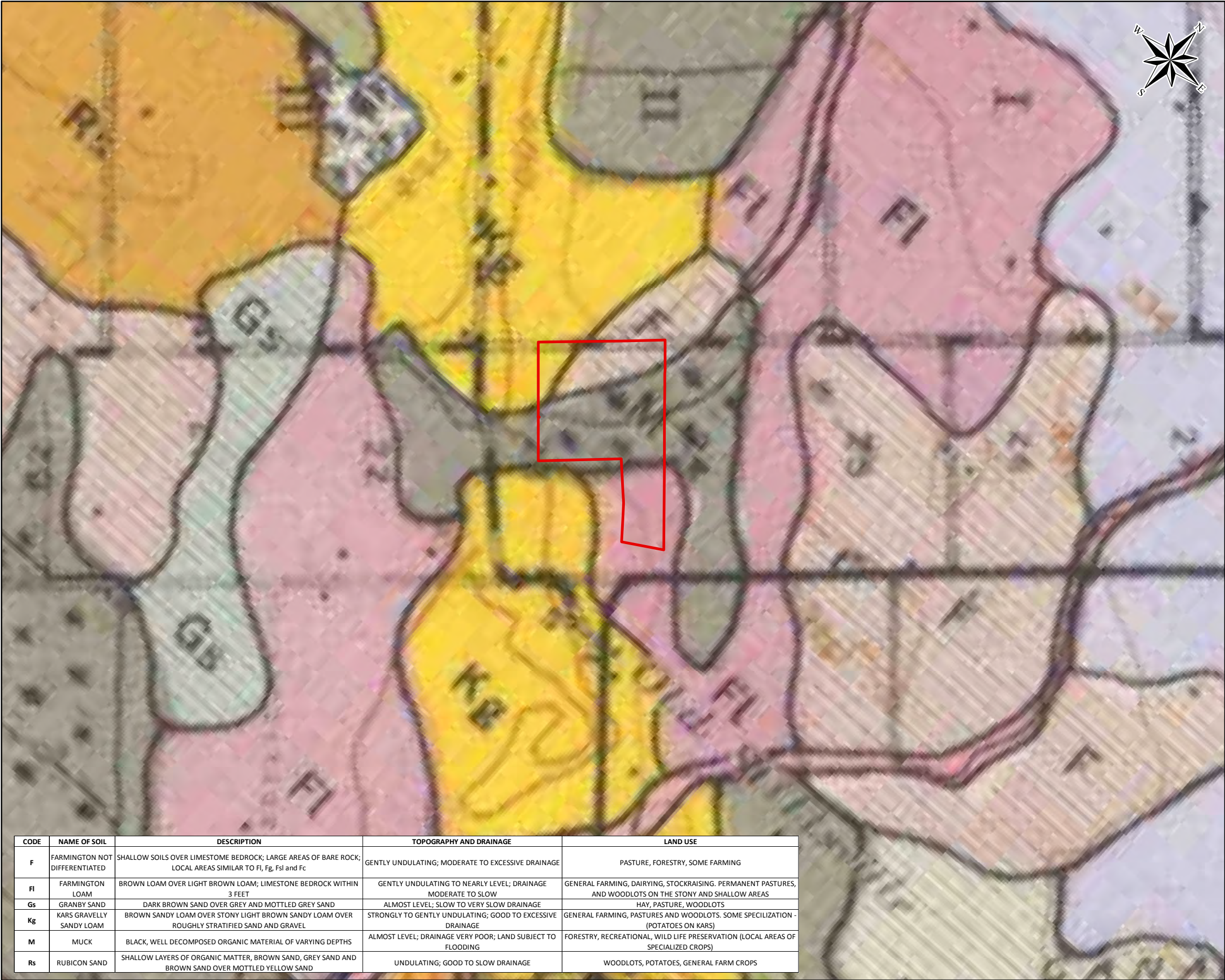
TITLE
BOREHOLE LOCATIONS



| | | |
|--------------------------|----------------|----------|
| PROJECT No. 13-1125-0111 | SCALE AS SHOWN | REV. 0.0 |
| DESIGN EW 2013-12-06 | | |
| GIS BR 2014-04-25 | | |
| CHECK EW 2014-04-25 | | |
| REVIEW HJD 2014-04-25 | | |

MAP 6

N:\Active\2013\1125 - Environmental and Civil Engineering\13-1125-0111 Stage 1 Hazeldean Rd_Minto\04-Spatial_IM\GIS\WXDs\1311250111-1000-07.mxd



| CODE | NAME OF SOIL | DESCRIPTION | TOPOGRAPHY AND DRAINAGE | LAND USE |
|------|-------------------------------|---|--|--|
| F | FARMINGTON NOT DIFFERENTIATED | SHALLOW SOILS OVER LIMESTONE BEDROCK; LARGE AREAS OF BARE ROCK; LOCAL AREAS SIMILAR TO FI, Fg, Fsl and Fc | GENTLY UNDULATING; MODERATE TO EXCESSIVE DRAINAGE | PASTURE, FORESTRY, SOME FARMING |
| FI | FARMINGTON LOAM | BROWN LOAM OVER LIGHT BROWN LOAM; LIMESTONE BEDROCK WITHIN 3 FEET | GENTLY UNDULATING TO NEARLY LEVEL; DRAINAGE MODERATE TO SLOW | GENERAL FARMING, DAIRYING, STOCKRAISING. PERMANENT PASTURES, AND WOODLOTS ON THE STONY AND SHALLOW AREAS |
| Gs | GRANBY SAND | DARK BROWN SAND OVER GREY AND MOTTLED GREY SAND | ALMOST LEVEL; SLOW TO VERY SLOW DRAINAGE | HAY, PASTURE, WOODLOTS |
| Kg | KARS GRAVELLY SANDY LOAM | BROWN SANDY LOAM OVER STONY LIGHT BROWN SANDY LOAM OVER ROUGHLY STRATIFIED SAND AND GRAVEL | STRONGLY TO GENTLY UNDULATING; GOOD TO EXCESSIVE DRAINAGE | GENERAL FARMING, PASTURES AND WOODLOTS. SOME SPECIALIZATION - (POTATOES ON KARS) |
| M | MUCK | BLACK, WELL DECOMPOSED ORGANIC MATERIAL OF VARYING DEPTHS | ALMOST LEVEL; DRAINAGE VERY POOR; LAND SUBJECT TO FLOODING | FORESTRY, RECREATIONAL, WILD LIFE PRESERVATION (LOCAL AREAS OF SPECIALIZED CROPS) |
| Rs | RUBICON SAND | SHALLOW LAYERS OF ORGANIC MATTER, BROWN SAND, GREY SAND AND BROWN SAND OVER MOTTLED YELLOW SAND | UNDULATING; GOOD TO SLOW DRAINAGE | WOODLOTS, POTATOES, GENERAL FARM CROPS |

LEGEND

STUDY AREA

3001500300

SCALE 1:15,000METRES

NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 13-1125-0111/1000.

REFERENCE


SOIL MAP OF CARLETON COUNTY, DEPARTMENT OF CHEMISTRY, ONTARIO AGRICULTURAL COLLEGE, GUELPH AND THE EXPERIMENTAL FARM SERVICE, DOMINION DEPARTMENT OF AGRICULTURE, OTTAWA.
LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2011.
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: MTM ZONE 9

PROJECT

STAGE 1 ARCHAEOLOGICAL ASSESSMENT
MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO

TITLE

SOIL SURVEY

Golder Associates
Ottawa, Ontario

| | | | | |
|--------------------------|-----|------------|----------------|----------|
| PROJECT No. 13-1125-0111 | | | SCALE AS SHOWN | REV. 0.0 |
| DESIGN | EW | 2013-12-06 | MAP 6 | |
| GIS | BR | 2014-04-25 | | |
| CHECK | EW | 2014-04-25 | | |
| REVIEW | HJD | 2014-04-25 | | |

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LEGEND

STUDY AREA

PROPOSED DEVELOPMENT

ROAD

HYDRO LINE

CONTOUR LINE (m)

WATERCOURSE

GEOGRAPHIC TOWNSHIP/CONCESSION/LOT

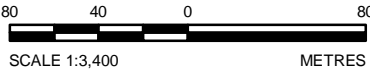
MODERATE ARCHAEOLOGICAL POTENTIAL

MODERN FILL DISTURBANCE AND MUCK SOIL TYPE, LOW ARCHAEOLOGICAL POTENTIAL

ARCHAEOLOGICAL POTENTIAL - CITY OF OTTAWA

WETLAND - NO ARCHAEOLOGICAL POTENTIAL

PERMANENTLY WET AND SATURATED LANDS



NOTE
THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 13-1125-0111/1000.


REFERENCE
BING MAPS AERIAL, (C) 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS, JULY 2013.
LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2011.
AUTOCAD PLAN PROVIDED BY MINTO. DECEMBER 2013.
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: MTM ZONE 9

PROJECT

STAGE 1 ARCHAEOLOGICAL ASSESSMENT
MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO

TITLE

AREAS OF NO/LOW VERSUS MODERATE
TO HIGH ARCHAEOLOGICAL POTENTIAL



Golder Associates
Ottawa, Ontario

| | | |
|-------------|--------------|------------|
| PROJECT No. | 13-1125-0111 | |
| DESIGN | EW | 2013-12-06 |
| GIS | BR | 2014-01-02 |
| CHECK | EW | 2014-01-02 |
| REVIEW | HJD | 2014-01-02 |

| | |
|----------------|----------|
| SCALE AS SHOWN | REV. 0.0 |
|----------------|----------|

MAP 8

N:\Active\2013\1125 - Environmental and Civil Engineering\13-1125-0111 Stage 1 Hazeldean Rd_Minto\04-Spatial_IM\GIS\WXDs\1311250111-1000-09.mxd



LEGEND

STUDY AREA

PROPOSED DEVELOPMENT

ROAD

HYDRO LINE

CONTOUR LINE (m)

WATERCOURSE

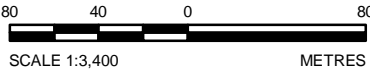
GEOGRAPHIC TOWNSHIP/CONCESSION/LOT

LOW ARCHAEOLOGICAL POTENTIAL, NO FURTHER ASSESSMENT REQUIRED

STAGE 2 SHOVEL TEST SURVEY AT 5 m INTERVALS

WETLAND - NO ARCHAEOLOGICAL POTENTIAL

PERMANENTLY WET AREA TO BE ASSESSED DURING STAGE 2 FIELD INVESTIGATION




NOTE

THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDER ASSOCIATES LTD. REPORT NO. 13-1125-0111/1000.

REFERENCE

BING MAPS AERIAL, (C) 2010 MICROSOFT CORPORATION AND ITS DATA SUPPLIERS, JULY 2013.
LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2011.
AUTOCAD PLAN PROVIDED BY MINTO. DECEMBER 2013.
PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83 COORDINATE SYSTEM: MTM ZONE 9

| | | | | | |
|--|---|-----|------------|----------------|--------|
| PROJECT | STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO, HAZELDEAN ROAD, OTTAWA, ONTARIO | | | | |
| | STAGE 2 RECOMMENDATIONS | | | | |
| <div><div></div><div><div>Golder Associates</div><div>Ottawa, Ontario</div></div></div> | PROJECT No. 13-1125-0111 | | | SCALE AS SHOWN | REV. 0 |
| | DESIGN | EW | 2013-12-06 | MAP 9 | |
| | GIS | BR | 2014-04-25 | | |
| | CHECK | EW | 2014-04-25 | | |
| | REVIEW | HJD | 2014-04-25 | | |



STAGE 1 ARCHAEOLOGICAL ASSESSMENT MINTO HAZELDEAN ROAD SUBDIVISION

CLOSURE

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

GOLDER ASSOCIATES LTD.

Erin Wilson, M.A.
Archaeologist

Hugh J. Daechsel
Senior Archaeologist/Principle

EW/HJD/ca/mvrd

\\golder.gds\gal\ottawa\active\2013\1125 - environmental and civil engineering\13-1125-0111 stage 1 hazeldean rd_minto\03-reporting\03-mtcs package\3rd rev report for mtcs\p366-0039-2013_16june2017_rr.docx



APPENDIX A

Photographic Catalogue



APPENDIX A

Photographic Catalogue

| Photo | Description | Direction | Date | Photographer |
|----------------|---|-----------|------------|--------------|
| 1311250111-D01 | View of treeline of southern study area in distance, taken from Hazeldean Rd. | N | 11/13/2014 | EW |
| 1311250111-D02 | View of treeline of southern study area in distance, taken from Hazeldean Rd. | E | 11/13/2014 | EW |
| 1311250111-D03 | View of treeline of southern study area in distance, taken from Hazeldean Rd. | NW | 11/13/2014 | EW |
| 1311250111-D04 | SE corner of study area with raised roadway vs. low woods, taken from Giant Tiger Parking lot | S | 11/13/2014 | EW |
| 1311250111-D05 | Typical low-land wooded area in southeast corner | W | 11/13/2014 | EW |
| 1311250111-D06 | View of low-lying wooded area taken from Giant Tiger Parking lot | NW | 11/13/2014 | EW |
| 1311250111-D07 | Open area with exposed bedrock and apple tree in southern portion | W | 11/13/2014 | EW |
| 1311250111-D08 | Open area with exposed bedrock and apple tree in southern portion | W | 11/13/2014 | EW |
| 1311250111-D09 | Exposed bedrock in southern portion of study area | S | 11/13/2014 | EW |
| 1311250111-D10 | Long grass open areas mixed with cedar trees in southern area | W | 11/13/2014 | EW |
| 1311250111-D11 | Exposed bedrock and dead trees. Typical wooded condition | N | 11/13/2014 | EW |
| 1311250111-D12 | Fallen trees in south-central area and most of site | W | 11/13/2014 | EW |
| 1311250111-D13 | Fallen trees in south-central area and most of site | W | 11/13/2014 | EW |
| 1311250111-D14 | View of western treeline in south-central area. Taken from levelled field | N | 11/13/2014 | EW |
| 1311250111-D15 | View of low-lying wooded area vs. higher leveled ground to the west | E | 11/13/2014 | EW |
| 1311250111-D16 | Wetland located in central wooded area, taken from western property | SE | 11/13/2014 | EW |
| 1311250111-D17 | Wetland located in central wooded area, taken from western property | SE | 11/13/2014 | EW |
| 1311250111-D18 | Continuation of wetland north along treeline | N | 11/13/2014 | EW |
| 1311250111-D19 | Wetland located in central wooded area, taken from western property | SE | 11/13/2014 | EW |
| 1311250111-D20 | Significant drop from western property to wetland area | N | 11/13/2014 | EW |
| 1311250111-D21 | Open field area in central study area, possibly infilled and levelled | N | 11/13/2014 | EW |
| 1311250111-D22 | Combined wet and wooded area, central | NE | 11/13/2014 | EW |
| 1311250111-D23 | Undulating fill/levelled area in central east area | NE | 11/13/2014 | EW |
| 1311250111-D24 | Open field, central area | NW | 11/13/2014 | EW |
| 1311250111-D25 | Open field, central area | N | 11/13/2014 | EW |
| 1311250111-D26 | Wooded area in central east | E | 11/13/2014 | EW |



APPENDIX A

Photographic Catalogue

| Photo | Description | Direction | Date | Photographer |
|----------------|--|-----------|------------|--------------|
| 1311250111-D27 | Disturbed high ground towards suburb development east of study area | E | 11/13/2014 | EW |
| 1311250111-D28 | Wetland area located towards northeastern area amongst woods, taken from suburb roadway east | NW | 11/13/2014 | EW |
| 1311250111-D29 | Wetland area located towards northeastern area amongst woods, taken from suburb roadway east | NW | 11/13/2014 | EW |
| 1311250111-D30 | Wetland area located towards northeastern area amongst woods, taken from suburb roadway east | W | 11/13/2014 | EW |
| 1311250111-D31 | Wooded area in northeast area | N | 11/13/2014 | EW |
| 1311250111-D32 | Lower wooded area. Taken from northeast corner in suburb | W | 11/13/2014 | EW |
| 1311250111-D33 | Northern study area boundary with dirt road | W | 11/13/2014 | EW |
| 1311250111-D34 | Wet open area with exposed bedrock in northern wooded area | S | 11/13/2014 | EW |
| 1311250111-D35 | Wet open area with exposed bedrock in northern wooded area | NE | 11/13/2014 | EW |
| 1311250111-D36 | Wet open area with exposed bedrock in northern wooded area | SW | 11/13/2014 | EW |
| 1311250111-D37 | Exposed bedrock in open area to the north | S | 11/13/2014 | EW |
| 1311250111-D38 | Exposed bedrock in open area to the north | S | 11/13/2014 | EW |
| 1311250111-D39 | Exposed bedrock in open area to the north | S | 11/13/2014 | EW |
| 1311250111-D40 | Rise in land towards the west along the northern portion of the study area | W | 11/13/2014 | EW |
| 1311250111-D41 | Rise in land towards the west along the northern portion of the study area | W | 11/13/2014 | EW |
| 1311250111-D42 | Exposed bedrock above the rise in land, NW | W | 11/13/2014 | EW |
| 1311250111-D43 | View of northwest corner of study area taken from large fill mound | SW | 11/13/2014 | EW |
| 1311250111-D44 | View of slope from wooded area to levelled open land in NW area | S | 11/13/2014 | EW |
| 1311250111-D45 | View of gravel slope | S | 11/13/2014 | EW |
| 1311250111-D46 | Wooded area in NW are | SE | 11/13/2014 | EW |
| 1311250111-D47 | Gravel walkway through open area in NW | SW | 11/13/2014 | EW |
| 1311250111-D48 | Gravel walkway through open area in NW, taken from above fill mound | SW | 11/13/2014 | EW |
| 1311250111-D49 | View of fill mound taken from below in NW area | N | 11/13/2014 | EW |
| 1311250111-D50 | View of fill mound taken from below in NW area | NW | 11/13/2014 | EW |
| 1311250111-D51 | View of fill mound taken from below in NW area | NE | 11/13/2014 | EW |
| 1311250111-D52 | View of fill mound taken from below in NW area | N | 11/13/2014 | EW |
| 1311250111-D53 | View of fill mound taken from below in NW area | NW | 11/13/2014 | EW |
| 1311250111-D54 | Fill areas along tree line located in NW area | SE | 11/13/2014 | EW |
| 1311250111-D55 | Fill areas along tree line located in NW area | N | 11/13/2014 | EW |



APPENDIX A

Photographic Catalogue

| Photo | Description | Direction | Date | Photographer |
|----------------|---|-----------|------------|--------------|
| 1311250111-D56 | Open field in NW area | S | 11/13/2014 | EW |
| 1311250111-D57 | View of fill line at tree line in NW area (wooded area is lower) | SE | 11/13/2014 | EW |
| 1311250111-D58 | View of ground level difference from wooded area to open field, taken from open field | N | 11/13/2014 | EW |
| 1311250111-D59 | Man-made creek in NW/central area | S | 11/13/2014 | EW |
| 1311250111-D60 | Man-made creek in NW/central area | E | 11/13/2014 | EW |
| 1311250111-D61 | Man-made creek in NW/central area | E | 11/13/2014 | EW |
| 1311250111-D62 | Man-made creek in NW/central area | W | 11/13/2014 | EW |
| 1311250111-D63 | Man-made creek in NW/central area | NW | 11/13/2014 | EW |
| 1311250111-D64 | Open field in central west area | S | 11/13/2014 | EW |
| 1311250111-D65 | Open area in central area | SE | 11/13/2014 | EW |
| 1311250111-D66 | Fill and rubble along tree-line | E | 11/13/2014 | EW |
| 1311250111-D67 | Fill and rubble along tree-line | E | 11/13/2014 | EW |

EW – Erin Wilson

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