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REVISED REPORT

Stage 2 Archaeological Assessment

Proposed Cardinal Creek Development,
Part Lot 25, 26, 27 and 28, Concession 1
Geographic Township of Cumberland,
Historic County of Russell,
Ottawa, Ontario

Prepared For

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1.0 Executive Summary

Paterson Group, on behalf of Tamarack Homes, undertook a Stage 2 archaeological assessment of the study area located on Part Lot 25, 26, 27 and 28, Concession 1 in the geographic township of Cumberland (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. This archaeological assessment has been required as part of an integrated planning act and environmental assessment act process prior to development.

Tamarack Homes is planning to develop the property into a residential development similar to subdivisions in the surrounding areas.

The Stage 2 component of the archaeological assessment involved a pedestrian survey of the area where ploughing was possible. Subsurface testing occurred in areas that could not be ploughed, such as woodlots, which consisted of hand excavated test pits at 5m intervals. The field portion was undertaken over 22 days from June 2012, to May 2013. Permission to access the property was provided by Tamarack Homes. The Stage 2 Archaeological Assessment resulted in no indication of significant archaeological remains within the proposed development area (As per Map 2). Accordingly, it is recommended that:

1. No further archaeological study is required for the study property.
2. Portions of the development area that extend outside of the study area, as shown on Map 2, should be assessed prior to further development.
3. Portions of the development area that are current residential areas, as shown on Map 2, and are not currently scheduled for development, were not assessed in this process. Accordingly those areas should be assessed prior to further development.

and

4. The Ministry of Tourism, Culture and Sport provide a letter confirming that there are no further concerns with regard to alterations to archaeological sites for the property as depicted in Map 1.

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3.0 Project Personnel

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4.0 Project Context

4.1 Development Context

Paterson Group was contracted by Tamarack Homes to conduct a Stage 2 archaeological assessment of the proposed Cardinal Creek Village Development located on Concession 1, Part Lot 25, 26, 27 and 28 in the former township of Cumberland, Russell County (Map 1). Tamarack Homes is constructing a subdivision on the study property (Map 2). This archaeological assessment has been required as part of an integrated planning act and environmental assessment act process prior to development.

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 Cumberland (Archaeological Services Inc. and Geomatics International Inc. 1999a, 1999b). According to the management plan, the entire study area has archaeological potential.

At the time of the archaeological assessment, the study area was owned by Tamarack Homes or Tamarack Homes held the option to buy the property. This area was in the pre-development phase. Permission to enter the property was granted by Tamarack Homes on May 28, 2012.

4.2 Study Area Specific History

The study property is located on part lots 25, 26, 27, and 28. The histories of these properties are all intertwined.

The patent for lot 26 was transferred from the Crown to John McKindlay May 19, 1822. Two years later on February 18, 1824, McKindley sold the property to John Gray, however it is McKindley who is listed on the 1825 map (Coffin 1825). Archibald Petrie purchased the property February 25, 1834 (OLR:AR-24).

When Lot 25 was originally granted by the Crown, it was divided into the east and west halves of the lot. The west half was granted to Archibald McLean on February 24, 1823. While there are no McLean's listed in the census records for Russell County, there is an Archibald McLean, Esq. listed in Cornwall in 1829 (Ancestry.com 2005), indicating that McLean may have been an absentee landlord. The 1825 map of Cumberland county, indicates that McLean was a Captain (Map 3) (Coffin 1825). Mclean sold the property on July 12, 1833 to Henry Symes for £100. Two years later, Symes also bought the east side of the property, although they remained as separate parcels throughout the rest of its history. In September of 1848, Symes sold the west half of lot 25 to John Barker for £100. That same month, Barker sold the property for the same sum to his neighbour from lot 26, Archibald Petrie (OLR:AR-24).

The Crown granted lot 27 as two halves, the east and the west half. The east half was granted to the Archibald Petrie on September 21, 1845, at which time Petrie then owned 400 acres in the first concession from the Ottawa River. The west half was granted to Joseph Laflame on November 3, 1845 (OLR:AR-24). The east half of 25 and west half of lot 27 are dealt with separately from lots 25, 26, and 27.

Lot 25 west half, Lot 26, and Lot 27 east half

Archibald Petrie and his wife Catherine had four children: Kate, Edward, Archibald, and Elizabeth (Statistics Canada 1871). The 1840 Assessment Map of Cumberland Township shows that there was a structure built on both lot 25 and 26 near the ridge (Map 3). It is unclear whether the structure located on lot 25 was on the east or west portion of the lot (Assessment Rolls for Cumberland Township 1834-1848). On April 16, 1857, Archibald Petrie passed away leaving lot 27 to his son Edward (13 years old at the time), lot 25 to Archibald (9 years old at the time), and lot 26 to his wife and the family (OLR:AR-24). A. Petrie is shown on the 1862 map of the county (Map 4).

In 1905, Edward Archibald and his wife sold the west half of lot 26 and the east half of lot 27 to Thomas D. Farmer. In February 1906, Archibald Petrie, Jr. (listed as a bachelor) sold the property to Thomas Dagg for 4500.0.0 £sd. In April that year, Dagg and his wife sold the property to Thomas D. Farmer for 4800.0.0 £sd. Farmer was born in 1863 in Ontario, of Irish descent. With his wife Jeanne they had three daughters: Eva, Catherine, and Stella (Ancestry.com 1911). In 1909, Thomas Farmer sold the "cattle pass" on half lots 25 and 27 and lot 26 to the Canadian northern Ontario Railway Company (OLR:AR-24).

Lot 25 east half

The east half of lot 25 was granted by the Crown to David Ross on March 24, 1841. The 1825 map of Cumberland Township denotes a John Ross on the property, as well as on lot 24 (Map 3) (Coffin 1825). In 1835 Rodd sold the property to Henry Symes, who already owned the west half of the property. Symes did not keep the parcels together, as in September of 1848, he sold the east half to William Erskine, who is shown on the 1862 county map (Map 4). In 1863, William and his wife deeded the property to their son William Jr. On October 7, 1864, William Jr. sold the north half of the property to John Erskine, and the south half to Margaret Erskine. John Erskine was a farmer born in Scotland. Margaret Erskine was a widow born in Scotland, with one daughter Janet. Clearly they were part of the same family but their relationship is unclear at this time (Statistics Canada 1871). In July of 1882, Margaret deeded her parcel to her daughter Janet. In 1884, John Erskine and his wife sold their parcel to James M. Smith. It is possible that Janet Erskine married James M. Smith since in 1917 a Janet Smith is listed alongside James M. Smith in selling a portion of land to the Canadian Northern Ontario Railway Company and when Janet Smith passed away later in 1917 a William Erskine is listed as one of the executors of her will (OLR:AR-24).

Lot 27 west half

Laflame sold the west half of lot 27 in September of 1854 to James Ogilvie. In July of 1857, Ogilvie sold the property to John Carr. John Carr was a farmer from Ireland that was a Plymouth Brethren by religion. His wife Mary, was born in Ontario of Irish decent. Together they had six children: Jane, George, Elizabeth, James, Emiline, and Mary (Statistics Canada 1881). By the 1891 census, Jane is no longer listed indicating that she was likely married and now living with her husband. Mary's name shows up as Minnie (Statistics Canada 1891). John Carr passed away in August of 1891 and willed the northwest half of the property to his son George, and his wife Mary retained the southern portion. When Mary passed away in 1903, Emiline and Minnie released their claim to the property and the entirety of the property was then owned by George F. Carr. George owned the property until he sold it in 1917 (OLR:AR-24).

Lot 28

The original 200 acre parcel that comprises Lot 28 was granted by the Crown to Matilda Cozens on May 25, 1836. The 1825 Coffin map of Cumberland Township shows that the land was granted at that time, which may indicate that the Land Ticket had already been issued, but had not yet been registered (Map 3). Unfortunately, Matilda Cozens must have passed away shortly after acquiring the property as the next entry in 1839 is her will. By 1840, a structure is shown on Lot 28 to the north of the roadway (Assessment Rolls for Cumberland Township 1834-1848) (Map 3). A relative of Matilda, Joshua F. Cozens, sold the property in 1848 to Edward Dagton and William McShaw for £287. In 1850, Dagton and McShaw sold the property to Robert J Lusk for £200. Lusk is shown as the property owner on the 1862 map (Walling 1862) and by 1881 the property has two small structures close to the road (Belden 1881) (Map 4). Lusk mortgaged the property several times before declaring bankruptcy in 1882. The Court ruled that the land would pass to Honoré Cotté, one of the previous lenders. Cotté sold the property in 1885 to Francis Masson, who in turn sold the property that same year to Israel Cardinal (Land Registry Record AR-24). Israel was a French Canadian farmer born in Quebec in 1857. With his wife Edwidge he had nine daughters and two sons (Canada Census 1901). The eldest son, Alderic, inherited the property in 1907 at the age of 13. In 1908, Alderic sold five and a half acres to the Canadian Northern Ontario Railway Company. Alderic maintained possession of the remainder of the property until his death in 1939, when the property remained in the Cardinal family for whom the creek that runs through the property is named (OLR:AR-24).

4.3 Archaeological Context

4.3.1 Current Conditions

The study area consists of 184 hectares that is characterized primarily by cultivated fields and wooded areas (Map 1). A total of 81 hectares (44%) are cultivated corn or soybean fields, 103 hectares (56%) are comprised of woodlot, overgrown shrubbery, or landscaped lawns. The

property is relatively flat, but for three large slopes and terraces culminating in higher elevations to the south, away from the Ottawa River. Residential dwellings are located at 1190 Ottawa Road 174, and 1285-1295 Old Montreal Road. Centrally located in the study area is the Laporte Flower and Nursey, and an associated modern dwelling.

4.3.2 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 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). A Stage 1 and 2 archaeological assessment on Part lot 28, Concession 1 found a historic period artifact scatter dating from the mid-late 19th century that may comprise the remains of a cabin. It will be further investigated through a Stage 3 assessment (Paterson Group 2012).

Stage 1 assessments (P369-001-2012 and P369-003-2012) of the subject area were undertaken by Paterson Group in 2012-2013 and found the entire study area to have archaeological potential (Paterson Group 2013a, 2013b).

4.3.3 Registered Archaeological Sites

The Cardinal Creek Site (BiFu-7), which comprises a mid-late 19th century historic period artifact scatter, is located within a 1 km radius of the study property. Within a 2 km radius, two archaeological sites are located to the south of the study area. These are BiFu-5 (Cardinal Creek Homestead), a late 19th to early 20th Century Euro-Canadian homestead, and BiFu-6, an unidentified lithic scatter.

5.0 Field Methods

Nearly all areas of this property are considered to have high potential according to the 2011 standards set out for consultant archaeologists by the MTCS, due to its proximity to historic development areas, water sources, and topographic features. In accordance with these standards, all non-excluded areas were surveyed at a 5 metre test interval.

The provenience system used for this project is based upon the Paterson project number plus operation number, plus sub-operation number, plus find spot number, thus the first pedestrian find in operation 1, sub-operation A under this Project number was P1001-1A1. Similarly the first positive test pit in sub-operation B within operation 1 is designated P1001-1B1. Operation areas are intended to convey geographic areas within the larger property (Map 5). Sub-operations are intended to represent find areas or archaeological interest areas

At the time of survey, of the 184 hectares comprising the study area, 79 hectares (43%), of the subject property was suitably ploughed (Maps 4-12) as described in Standard 1, Section 2.1.1 of the Standards and Guidelines for consultant archaeologists (MTCS 2011). This area was pedestrian surveyed at high potential 5 metre intervals. All surveyed fields had been plowed prior to commencing fieldwork, and exhibited zero to minor new growth that did not impeded surface visibility. Fields were adequately weathered, with heavy rainfall occurring prior to pedestrian survey. Pedestrian survey resulted in a few find spots, however intensification to 1 m transects in a 20 m radius around the find spots resulted in no indication of significant archaeological remains within the proposed development area.

Approximately 42 hectares (23%) of the property was not suitable for ploughing as per Standard 1.a. and 1.c., Section 2.1.2 (MTCS 2011) at the time of survey, nor did this area meet the criteria for exclusion from survey as per Standard 2.a or 2.b, Section 2.1 (MTCS 2011). Accordingly, this area was shovel tested at 5 meter intervals up to 1 m from extant structures (Maps 6-14). All test-pits were a minimum of 30 cm in diameter and were excavated into the first 5 cm of subsoil. All soil was screened using 6mm mesh screens. All test-pits were examined for cultural features and stratigraphy then backfilled.

At the time of survey, approximately 63 hectares (34%) of the property meet the criteria for exclusion from survey as per Standard 2.a or 2.b, Section 2.1 (MTCS 2011) (Maps 6-14). Notably, 30 hectares are deeply disturbed by house foundations, the Laporte nursery development, roads, etc.; 23 hectares exhibit slopes greater than 20 degrees as measured in the field using a compass with inclinometer; 9 hectares are permanently wet or drainage features; and 0.5 hectares are a single residential dwelling within the study area which is not planned for development, and for which permission to access was not gained.

Diagnostic or formal artifact types were all collected, bagged, and labelled according to the find spot during the pedestrian survey, or by shovel test unit. When artifacts were found during

pedestrian survey they were flagged then pedestrian survey of the area surrounding the find was intensified to 1 m transects perpendicular to the 5 m transects. These extended 20 m in all directions from the find. As new finds were found in the intensified area, they too were flagged and the area of 1 m transects expanded accordingly until such time as 20 m from the last find had been cleared. Diagnostic artifact locations were recorded using a Garmin GPSmap 62 GPS unit.

When artifacts were found during the shovel testing the location was recorded using a Garmin GPSmap 62 and flagged for ease of returning to that location. The remainder of the grid was investigated.

Photographs were taken during fieldwork in order to document the current land conditions (locations shown on Maps 6-14) Standard 1.a., Section 7.8.5 (MTCS 2011). The extents for all areas surveyed and excluded were mapped using a Garmin GPSmap 62 GPS unit with WAAS enabled.

Permission to access the property was provided by Tamarack Homes May 28, 2012. Pedestrian survey of the north side of Old Montreal Road, with the exception of operation 5 and 16 as they were not yet ploughed, took place on June 6, 2012. Pedestrian survey of operation 5 was completed on December 6, 2012 and May 7, 2013 for operation 16. Shovel testing was undertaken during 18 days from June 6 to September 10, 2012. Weather conditions were sunny to overcast with temperatures that ranged between 18 and 35° Celsius (December weather was sunny and 1° C). Pedestrian survey and shovel testing of the lands south of Old Montreal Road took place on May 21, 2013. Weather conditions were sunny and temperatures averaged 15° Celsius.

6.0 Record of Finds

To facilitate reporting on such a large area, all portions of the study area were given operation numbers, regardless whether cultural resources were found in these areas (Map 5). Operation numbers are carried on from the Stage 2 assessment completed on Part Lot 28 (P369-002-2012), as the majority of fieldwork was completed simultaneously and are associated with the same Paterson project number. Therefore operation numbers 1, 2, and 6 are not used in this study area. Similarly, operation numbers were carried on for the Stage 3 completed for the Cardinal Creek site (BiFu-7) located on Part Lot 28 (PIF P369-007-2012) and used operation numbers 8, 9, and 10.

All artifact dates are sourced from the Parks Canada Archaeological Resources Database (Parks Canada 2012). Artifact inventory and daily field notes (including sketch maps drawn in the field) are listed in Appendix A and B.

6.1 Operation 3

Operation 3 (Map 6) consists of mostly ploughed fields, a small portion of wooded area on the edge of the fields, a permanently wet area and drainage ditch through the centre, and a strip of disturbed area along the edge of Old Montreal Road (Figure 1, Figure 2, Figure 3, Figure 4, Figure 5, Figure 6, Figure 7). During pedestrian survey of the south eastern portion of the field a single piece of banded refined white earthenware was recovered (see Supplementary Documentation Map 1). Intensification to 1 m transects perpendicular to the 5 m transects found no other artifacts. The artifact catalogue is provided as Appendix A.

6.2 Operation 4

Operation 4 (Map 7) consists of a block of the middle of the overall study property of ploughed field and forested shovel tested area (Figure 8, Figure 9, Figure 10). This area also includes deeply disturbed areas along the south side where there is a drainage ditch, two driveways in the west, and the footprints of two farm structures all of which were excluded from assessments as per Standard 2.c. of section 2.1 (MTCS 2011). The area also includes a disturbed area of a demolished and removed barn as seen in the current conditions map (Map 5). This area was too overgrown for a surface inspection so was shovel tested, confirming the extent of the disturbance as per Standard 2 of Section 2.1.8 (MTCS 2011) and shown on Map 12. During pedestrian survey in the central field area two small scatters of historic Euro-Canadian artifacts were located and identified as 4A and 4B (Map 6). Artifacts from 4A were recovered over a wide area (125 x 155 m) and are not concentrated. All artifacts from this scatter were collected. The artifacts collected during Stage 2 testing in 4A totalled 15 and included ceramics, bottle glass, smoking pipe fragments, and other miscellaneous items (Figure 12, Figure 13). Find area 4B, at the western side of the field produced only seven artifacts, all ceramic (Figure 14). Again this is a relatively diffuse scatter. For both find areas in operation 4 the artifacts were so wide spread and fewer than 20 diagnostic items were found from both areas, therefore these scatter do not indicate any cultural

heritage value or interest as per Standard 1.c. of Section 2.2 (MTCS 2011). The artifact catalogue is provided as Appendix A.

Recovered ceramics from 4A include refined white earthenwares of different styles such as blue transfer, which included the Willow pattern (1830+); industrial slip banded pattern (1830-1930); and painted late palette (1830+). Other ware types included vitrified white earthenware (1845+) and Derbyshire stoneware. Also recovered was one piece of aqua bottle glass, one plain smoking pipe spur, and the distal end of a non-diagnostic chert biface that was not heat altered. The biface was likely part of a projectile point, and is interpreted as a curated piece as no other pre-contact artifacts were found in the area. Ceramics from find area 4B include refined white earthenware of various styles as in 4A with the addition of blue sponged (1840-1890).

6.3 Operation 5

Operation 5 (Map 8) consists of the area in the west centre of the overall study area. In this area are a modern dwelling, small stone cottage, and larger work shed. Areas in the north exhibit steep leading down to a lower terrace with ploughed fields (operation 16), north facing wooded slopes, and there is a smaller south facing slope centrally located.

Shovel testing in the forested area to the northwest corner of this operation and pedestrian survey of the ploughed field west of the house and around the shed in the southeast corner of this field resulted in no indication of archaeological remains within the proposed development area (Figure 16, Figure 17).

During pedestrian survey in the southern field located in this operation, near the current work shed, a scatter of historic Euro-Canadian artifacts was located (Figure 15, Map 9) and designated find area 5F. Artifacts were recovered over a wide area (150 x 75 m) in the northern edge of the field. The artifacts collected during Stage 2 testing totalled 19 and included ceramics, and one cut nail. The artifact catalogue is provided as Appendix A. Recovered ceramics included refined white earthenwares of different styles such as blue transfer, which included the willow pattern (1830+); painted late palette (1830+); and plain. Other ware types included vitrified white earthenware (1845+); and soft paste porcelain. Because there are only 19 artifacts dating before 1900, this scatter does not indicate any cultural heritage value or interest as per Standard 1.c. of Section 2.2 (MCTS 2011). All artifacts from this scatter were collected.

During shovel testing in the grassy manicured lawn and wooded area near the small stone cottage and around the modern house (designated 5A to 5C), a total of two test pits were positive for historic artifacts (5C5 and 5C10) while many were field identified as positive; however upon lab examination these were false positives with only modern refuse such as glass marbles, plastic buttons, machine made glass, etc. that has been discarded (Figure 18, Map 9). A total of 18 bona-fide artifacts were found (test pit 5C5 yielded 12 and 5C10 produced 6). In these two positive test

pits and included ceramics, window pane glass, bottle glass, and cut nails, and other miscellaneous items. The artifact catalogue is provided as Appendix A.

The majority of the ceramics recovered comprised refined white earthenwares either plain or turquoise floral pattern transfer (1845+). Bottle glass was mostly aqua with some pieces of glass colourless and consisted of unidentified bottle shards.

Intensification occurred around the two of the positive test pits (5C5 and 5C10) (as per 2.1.3 Standard 2b Option A). A total of eight test pits were excavated a distance of 2.5 m around each of these test pits followed by a 1 m x 1 m test unit placed over the positive test pit (Map 9). The locations of the test units and intensified test pits were mapping using a Sokkia SET630R total station using two Garmin GPSmap 62 GPS located survey stakes (stake coordinates generated using a 5 minute station occupation with multiple samples) for resection and the stone cottage as a known benchmark.

The eight test pits surrounding positive test pit 5C5 were all negative. The 1 m x 1 m unit was labelled 5D (Figure 19, Figure 20). The unit was excavated to a total depth of 35 cm below grade, and consisted of three lots. Modern sod and topsoil was a 15 cm thick brown sandy loam that contained no artifacts. Directly below this was a 15 cm thick landscaping fill layer with angular limestone rocks in a light brown sandy matrix that contained two fragments of mammal bone and three cut nails. Directly below this was sterile yellow orange clay subsoil, of which the top 5 cm were excavated (Figure 21).

Eight test pits were excavated around positive test pit 5C10 were all negative. A 1 m x 1m unit was placed directly on top of the test pit and labelled 5E (Figure 22). This unit was excavated to a depth of 120 cm below grade, and consisted of a total of 7 lots (Figure 23, Figure 24, Figure 25). Modern sod and topsoil consisted of 5-10 cm of brown sandy loam that contained refined white earthenware (1830+), colourless, amber, and dark olive green bottle glass, cut and wire nails, aluminium strapping, and a brass buckle/sipper pull. Directly below this was a grey brown sandy clay modern fill (5E2) that was 10 cm thick. Artifacts from this lot include plain refined white earthenware (1830+), Jackfield-type ware, colourless and dark olive green bottle glass, mammal bone, plastic, cut and wrought nails, and an iron buckle.

Directly below this was a layer of modern fill intermixed with historic artifacts (5E3) (Figure 26). It consisted of brown clay sand that was approximately 30 cm thickness. Recovered ceramics included refined white earthenware, vitrified white earthenware, yellowware, and coarse red earthenware. Glass consisted of colourless bottle glass, a clear neck to a condiment or pharmaceutical jar, a beaded rim from a chimney glass, and modern pop bottle glass. Other artifacts included wire and cut nails. Underlying lot 3 was a layer of modern fill (5E4) that consisted of grey gravel that was from 50 to 65 cm in depth. Ceramics included refined white earthenware with turquoise transfer print (Figure 28), refined white earthenware with lithograph pattern (1890+), and bone china. Glass artifacts included machine made colourless bottle glass, amber bottle glass,

pop bottle glass, green bottle glass, and the screw top rim to a mason jar. Other artifacts included cut and wire nails, a ceramic electrical fixture (Figure 27), and a plastic mouthpiece for a cigar/cigarette.

Directly below this were two lots 5E5 and 5E6, which was located in the southern quarter of the unit. 5E6 overlay 5E5 and consisted of golden coloured sand that was 10 cm in depth. Artifacts included refined white earthenware, colourless bottle glass, two wire nails and one cut nails, and an iron screw cap to a canning jar. Lot 5E5 consisted of a brown sandy clay modern fill layer that ranged from 70-120 cm in depth. It was filled with modern artifacts, some of which were discarded on site such as a water-filled plastic Heinz vinegar bottle, mason jars with intact lids and filled with water, and a tire inner tube. Artifacts that were kept include bone china, vitrified white earthenware, and refined white earthenware with decorations such as black transfer print (1830+) and lithograph (1890+), and porcelain with gilt and lithographed decorations (Figure 29). Also one piece of bisque was found. Glass objects include colourless bottle glass, part of an amber stubby beer bottle, green pop bottle glass, dark olive wine bottle glass, and the rim to a screw top jar. Other artifacts include an arch light rod, a small iron auger, and cut, wire, and roofing nails. This lot was not fully excavated as the unit was reaching unsafe limits. The modern fill at a depth of 120 cm indicates deep disturbance to this particular area of the property, while the adjacent test pits indicate shallower topsoil and landscape fill over subsoil, demonstrating the disturbance to be of very limited extent, possibly a modern refuse pit. Given that no in-situ historic artifacts were recovered, only those in the modern fill were found, the area has no cultural heritage value or interest as it is a modern disturbance and fill event.

6.4 Operation 7

Operation 7 (Map 7) consisted of the south-central field with small lightly wooded areas and a permanently wet area on the western and northern edges of this operation. Pedestrian survey resulted in no indication of archaeological remains within the proposed development area. No archaeological remains, artifacts, or cultural soil profiles were encountered during shovel testing (Figure 30, Figure 31, Figure 32, Figure 33, Figure 34, Figure 35, Figure 36).

6.5 Operation 11

Operation 11 (Map 10) consisted of all the lands to the south side of Old Montreal Road which included ploughed fields, lightly wooded areas, two permanently wet areas (one running through the centre, the other adjacent to Frank Kenney Rd), a thin area of disturbance along the northern edge adjacent to Old Montreal Rd, and an area of greater than 20° slope comprising a significant ravine and side channels that are a tributary to Cardinal Creek (Figure 37, Figure 38, Figure 39, Figure 40, Figure 41). Pedestrian survey resulted in two isolated find spots (Figure 42, Figure 43, Figure 44, Figure 45, Figure 46, Figure 47, Figure 48, Figure 49) (Map 10). Find spot 11A1 consists of a single piece of quartz that may have been a culturally created flake. Find spot 11A2 is the location of a single fragment of refined white earthenware with a mocha industrial slip decoration (1830+). Intensification in the find areas did not reveal any further artifacts. No archaeological remains, artifacts, or cultural soil profiles were encountered during shovel testing of the small woodlots within the area (Figure 50, Figure 51, Figure 52, Figure 53, Figure 54, Figure 55). For find spot 11A1, the find is non-diagnostic and does not meet the criteria of Standard 1.a. of Section 2.2 (MTCS 2011) for stage 3 assessment. Find spot 11A2, is a single diagnostic item and therefore this location does not indicate any cultural heritage value or interest as per Standard 1.c. of Section 2.2 (MTCS 2011).

Of particular note in the southern area of operation 11 is an extensive area that has undergone grubbing and stripping. On September 25, 2012 the area of operation 11 was visited for a preliminary examination for the purpose of providing advice to the proponent during the Stage 1 assessment and to determine the possibility of pedestrian survey for the purposes of Stage 2 contract bidding. At this time the grubbing activities were nearly complete. Briefly on September 25, 2012, the area was visually inspected through a pedestrian survey of a limited area which was determined to have been deeply disturbed by the grubbing activities which involved bulldozers and high-hoes. Subsequent inspection on September 27, 2012 and May 30 2013, involving a pedestrian walk-over in accessible areas, further confirms the top soil of the area to be totally disturbed and/or stockpiled, exposing the underlying dark brown to dark grey silty-clay subsoil (Figure 56, Figure 57, Figure 58, Figure 59, Figure 60).

6.6 Operation 12

Operation 12 (Map 7) consisted of an overgrown field with shrubbery and small to medium sapling growth that could not be ploughed. A permanently wet drainage ditch was encountered along the western and northern edges of this operation. No archaeological remains, artifacts, or cultural soil profiles were encountered during shovel testing (Figure 63, Figure 64, Figure 65, Figure 66, Figure 67).

6.7 Operation 13

Operation 13 (Map 11) consisted mostly of forested area, with a small section to the west of this operation that was used by the occupants as a personal driving range, which was ploughed prior to assessment, and a wooden barn structure, the perimeter of which was not ploughed and was therefore shovel tested. Portions of the forested area included a steep ridge with greater than 20 degree slope. Pedestrian survey resulted in no indication of archaeological remains within the proposed development area (Figure 68). No archaeological remains, artifacts, or cultural soil profiles were encountered during shovel testing (Figure 69, Figure 70, Figure 71, Figure 72, Figure 73, Figure 74, Figure 75, Figure 76, Figure 77, Figure 78, Figure 79).

6.8 Operation 14

Operation 14 (Map 12) consisted of the Laporte Nursery property, which has a landscaped front lawn including a pond, and a wooded back area along the top of the ridge. The area of the nursery itself is disturbed with a parking lot, nursery structures, and the circa 1950 Laporte house and outbuildings at the back of the property. There is a steep ridge behind the house, with a small level area at the bottom followed by a marshy area to the north. The small level area was tested; however the portions of the wooded area were not owing to the greater than 20 degree slopes and permanently wet zones. No archaeological remains, artifacts, or cultural soil profiles were encountered during shovel testing (Figure 80, Figure 81, Figure 82, Figure 83, Figure 84, Figure 85, Figure 86, Figure 87, Figure 88, Figure 89, Figure 90, Figure 91, Figure 92, Figure 93, Figure 94, Figure 95, Figure 96, Figure 97, Figure 98).

6.9 Operation 15

Operation 15 (Map 13), also known as the Jabbour property, consisted of a modern dwelling with landscaped lawns and multiple outbuildings. The western side of this operation encompasses Cardinal Creeks and steep banks leading down to it, while the eastern side us a deep drainage ditch. The thick clayey soils in this area demonstrated very poor drainage. No archaeological remains, artifacts, or cultural soil profiles were encountered during shovel testing (Figure 99).

6.10 Operation 16

Operation 16 (Map 14) consists primarily of ploughed fields with a small section to the east of the operation that was woodlot and a small unploughed field at the bottom of the slope in operation 5. A steep slope and run-off creek are located in the centre area of the operation (Figure 100, Figure 101, Figure 102, Figure 103, Figure 104, Figure 105, Figure 106) and there is a steep slope (greater than 20 degrees), to both the north leading down to Highway 174. Along the bottom of the southern ridge the field is unploughed due to the generally wet nature of the area, but which was dry for shovel testing. Just to the north the ground becomes permanently wet along the edge of the ploughed field. No archaeological remains, artifacts, or cultural soil profiles were encountered during shovel testing. Pedestrian survey encountered four pieces of refined white earthenware: one plain, one blue transfer, and two moulded at three isolated find spots 16A1, 16A2, and 16A3. Intensification to 1 m transects perpendicular to the 5 m transects found no other artifacts. The artifact catalogue is provided as Appendix A.

6.11 Operation 17

Operation 17 (Map 13) consisted of a small, generally undulating forested area that runs along the top of the steep ridge along the southeast side of Cardinal Creek and at the western extent is a cut for the former rail line. Accordingly, a large portion of this area exhibited slopes greater than 20 degrees and was not tested. Furthermore, a small portion of the study area includes Cardinal Creek and adjacent permanently wet areas and was not tested. In those areas shovel tested in operation 17, no archaeological remains, artifacts, or cultural soil profiles were encountered during shovel testing (Figure 107, Figure 108, Figure 109, Figure 110, Figure 111, Figure 112).

7.0 Analysis and Conclusions

The Stage 1 assessment proposed that there was moderate archaeological potential for the entire study area. As such, a Stage 2 archaeological assessment was conducted on the study property. However, the Stage 2 pedestrian survey and shovel testing yielded no evidence of any significant archaeological resources. It is therefore concluded that no further archaeological investigation is warranted.

8.0 Recommendations

Based on the background research and the distance from topographic features such as water and historic roads, it is determined that the entire study property has archaeological potential. It is recommended that:

1. No further archaeological study is required for the study property.
2. Portions of the development area that extend outside of the study area, as shown on Map 2, should be assessed prior to further development.
3. Portions of the development area that are current residential areas, as shown on Map 2, and are not currently scheduled for development, were not assessed in this process. Accordingly those areas should be assessed prior to further development.

and

4. The Ministry of Tourism, Culture and Sport provide a letter confirming that there are no further concerns with regard to alterations to archaeological sites for the property as depicted in Map 1.

9.0 Advice on Compliance with Legislation

- a. This report is submitted to the *Minister of Tourism and Culture* 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.
- b. 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*.
- 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 licensed 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.

10.0 Closure

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.



Ben Mortimer, M.A., A.P.A.
Senior Archaeologist



Nadine Kopp, M.A., A.P.A.
Project Archaeologist

11.0 Bibliography and Sources

Adams, N.

2009 *An Archaeological Assessment (Stage 1) of the Proposed Development Lands 1730 Wilhaven Road near Orleans, Ontario*. Copies available from PIF# P003-260-2009.

Ancestry.com

1911 Census of Canada. Accessed. 2012. The Generations Network, Inc., Provo, UT from http://search.ancestry.ca/iexec?htx=View&r=5543&dbid=8947&iid=e081_e002018622&fn=Thomas+David&ln=Farmer&st=r&ssrc=&pid=8193718.

2005 Ontario and Nova Scotia Census, 1800-1842 [Database on-Line]. Accessed. The Generations Network, Inc., Provo, UT from.

Assessment Rolls for Cumberland Township
1834-1848.

Belden, H. C.

1881 *Segment of Prescott and Russel Supplement to the Illustrated Atlas of the Dominion of Canada*, Toronto.

Coffin, W.

1825 Segment of Township of Cumberland.

Kennett, B.

1999 *Stage 1 Archaeological Assessment of the Hydro Transmission Corridor from the Hawthorne Transformer Station (Ottawa) to the Cumberland Junction, Regional Municipality of Ottawa Carleton*.

OLR

Ontario Land Registry Office Records, Ontario.

Parks Canada

2012 Archaeological Resources Database. Parks Canada, Cornwall.

Paterson Group

2012 *Stage 1 and 2 Archaeological Assessment Proposed Cardinal Creek Development - Part Lot 28, Ottawa, Ontario*. Copies available from P369-002-2012.

2013a *Stage 1 Archaeological Assessment Proposed Cardinal Creek Development, Lands North of Old Montreal Rd. Part Lot 25, 26, 27 and 28, Concession 1 in the Geographic Township of UMBERLAND, Historic County of Russell, Ottawa, Ontario*. Copies available from P369-001-2012.

2013b *Stage 1 Archaeological Assessment Proposed Cardinal Creek Development, Lands South of Old Montreal Rd. Part Lot 25, 26, and 27, and 28 Concession 1 and Part Lot C, D, and E Concession 8 in the Geographic Township of Cumberland, Historic County of Russell, Ottawa, Ontario*. Copies available from P369-003-2012.

Statistics Canada

1871 Census of Canada. Accessed, Library and Archives of Canada from <http://www.collectionscanada.gc.ca/databases/census-1871/index-e.html>.

1881 Census of Canada. Accessed, Library and Archives of Canada from <http://www.collectionscanada.gc.ca/databases/census-1881/index-e.html>.

1891 Census of Canada. Accessed, Library and Archives of Canada from <http://www.collectionscanada.gc.ca/databases/census-1891/index-e.html?PHPSESSID=vcme2kelmj1gs39p0q3rf75j45>.

Swayze, K.

2001 *Stage 1 & 2 Archaeological Assessment of a Proposed Subdivision on Part of Lots a, B & C, Conc. 8 & 9, Cumberland Township (Geo), City of Ottawa.*

Walling

1862 *Plan of the Counties of Stormont, Dundas, Glengarry, Prescott & Russell.* (NMC 21998).

12.0 Images

Operation 3



Figure 1: Field walking in Operation 3 (D066).



Figure 2: Field conditions in Operation 3 (D068).



Figure 3: Field walking in Operation 3 near permanently wet area (D077).



Figure 4: Field walking in Operation 3, looking north (D081).



Figure 5: Operation 3, showing permanently wet area (drainage ditch) in south part of field (D084).



Figure 6: Test pitting along edge of field in Operation 3 (D113).



Figure 7: Test pitting along northern edge of Operation 3 near permanently wet area (D116).

Operation 4



Figure 8: Field walking in Operation 4 (D100).



Figure 9: Slope down to drainage ditch along the southern edge of Operation 4 (D146).



Figure 10: Drainage ditch along the southern edge of Operation 4 (D104).



Figure 11: Shovel testing in operation 4 (D140).



Figure 12: Bottle finish from 4A1.



Figure 13: Onondaga chert biface from 4A6.



Figure 14: Banded refined white earthenware from 4B2.

Operation 5



Figure 15: Field conditions during pedestrian survey in Operation 5 (D232).



Figure 16: Shovel testing in forested area in Operation 5 at top of small slope (D126).



Figure 17: Shovel testing in forested area in Operation 5 (D129).



Figure 18: Test pitting near small stone cottage in Operation 5 (D193).



Figure 19: Excavating test unit 5D (D202).



Figure 20: Excavating test unit 5D near small stone cottage (D205).



Figure 21: Final plan view of test unit 5D (D203).



Figure 22: Excavating test unit 5E to the west of the small stone cottage (D206).

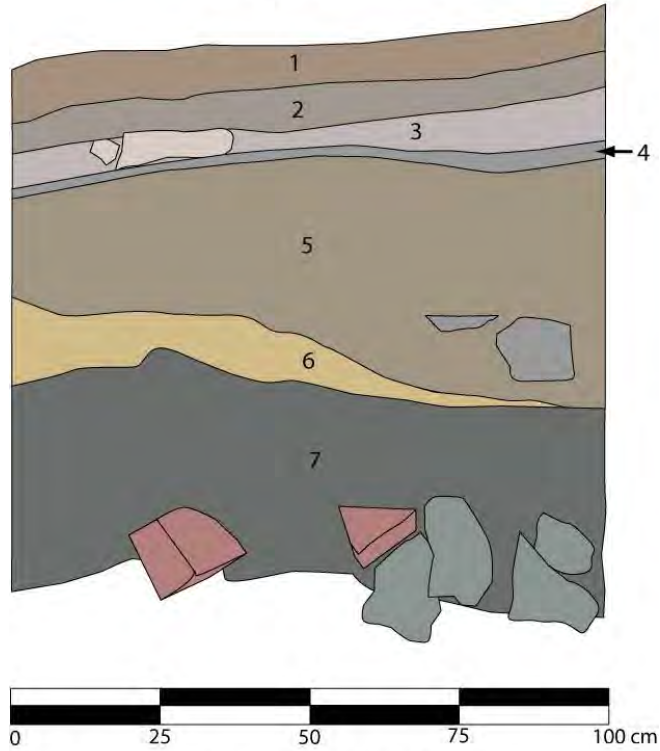


Figure 23: Final profile of test unit 5E, showing modern debris at a depth of 120 cm (D208).



Figure 24: Final plan view of test unit 5E (D210).

5E South Profile



- Lot 1 - Modern Sod and Topsoil
- Lot 2 - Grey brown sandy clay
- Lot 3 - brown clay sand
- Lot 4 - Gravel
- Lot 5 - Modern fill
- Lot 6 - modern sand fill
- Lot 7 - Modern fill

Figure 25: South profile drawing of 5E.



Figure 26: Glass artifacts from 5E3.



Figure 27: Vitrified white earthenware light fixture from 5E4.



Figure 28: Turquoise transfer print refined white earthenware from 5E4.



Figure 29: Porcelain gilt and lithographed plate from 5E5.

Operation 7



Figure 30: Ploughed field in Operation 7 (D386).



Figure 31: Ploughed field in Operation 7 (D385).



Figure 32: Ploughed field in Operation 7 (D388).



Figure 33: Ploughed field along Old Montreal Road (D389).



Figure 34: Test pitting treed area in middle of Operation 7 (D118).



Figure 35: Test pitting in treed section in middle of Operation 7 (D121).



Figure 36: Test pitting along south western edge of field in Operation 7 (D131).

Operation 11



Figure 37: Disturbed area alongside Old Montreal Road (D343).



Figure 38: Disturbed area alongside Old Montreal Road (D344).



Figure 39: Significant slope down towards ravine (D352).



Figure 40: Slope leading down towards ravine (D355).



Figure 41: Area with significant slope (D362).



Figure 42: Ploughed fields south of Old Montreal Road (D338).



Figure 43: Ploughed field south of Old Montreal Road (D340).



Figure 44: Field walking on south side of Old Montreal Road (D341).



Figure 45: Pedestrian survey south of Old Montreal Road (D346).



Figure 46: Ploughed field south of Old Montreal Road (D347).



Figure 47: Pedestrian survey on south side of Old Montreal Road (D350).



Figure 48: Pedestrian survey in Operation 11 (D360).



Figure 49: Ploughed fields in Operation 11 (D363).



Figure 50: Shovel testing in wooded area south of Old Montreal Road (operation 11) (D196).



Figure 51: Shovel testing on edge of corn field in operation 11 (D198).



Figure 52: Shovel testing in brush area on edge of corn field in operation 11 (D211).



Figure 53: Drainage ditch (permanently wet area) located to the south of the ploughed fields in operation 11 (D214).



Figure 54: Shovel testing in forested area in operation 11 (D 215).



Figure 55: Looking south towards permanently wet area in operation 11 (D 219).



Figure 56: Inspecting grubbed area in Operation 11 (D221).



Figure 57: Southern area after grubbing took place (D370).



Figure 58: Exposed subsoil after grubbing took place (D374).



Figure 59: After grubbing on south side (D375).



Figure 60: Evidence of machine damage during grubbing in Operation 11 (D368).



Figure 61: Part of exclusion area (D366).

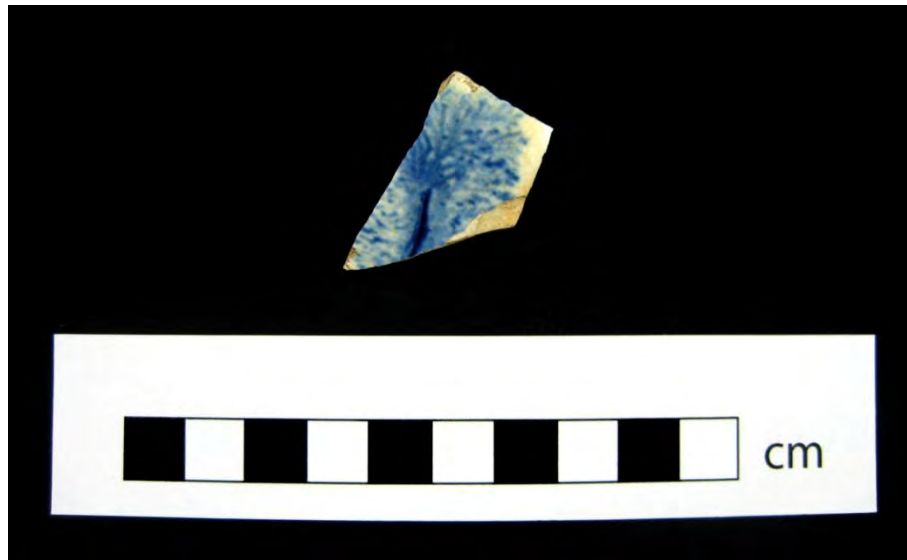


Figure 62: Blue mocha pattern on yellowware from 11A2.

Operation 12



Figure 63: Shovel testing in Operation 12 (D148).



Figure 64: Shovel testing in Operation 12 (D176).



Figure 65: Shovel testing in Operation 12 (D174).



Figure 66: Shovel testing in long grasses and saplings in Operation 12 (D179).



Figure 67: Shovel testing in long grasses in Operation 12 (D181).

Operation 13



Figure 68: Field walking in western ploughed area of Operation 13 (D238).



Figure 69: Shovel testing in long grasses in Operation 13 (D190).



Figure 70: Shovel testing in long grasses in operation 13 (D192).



Figure 71: Shovel testing in long grasses in Operation 13 (D156).



Figure 72: Shovel resting in lightly forested area in Operation 13 (D158).



Figure 73: Shovel testing in lightly wooded area in Operation 13 (D159).



Figure 74: Typical test pit in Operation 13 (D161).



Figure 75: Shovel testing in cedar forest in northern portion of Operation 13 (D167).



Figure 76: Shovel testing in northern section of Operation 13, near the steep slope (D185).



Figure 77: Shovel testing in northern section of Operation 13, near the steep slope (D183).



Figure 78: Shovel testing in forested portion of Operation 13 (D168).



Figure 79: Shovel testing in wooded area of Operation 13 (D165).

Operation 14



Figure 80: Grassy area looking towards Laporte nursery (D246).



Figure 81: Disturbed area and nursery structures in background (D249).



Figure 82: Drainage ditch alongside grassy area and driveway to Laporte nursery (D250).



Figure 83: Disturbed area near nursery (D261).



Figure 84: Test pitting in grassy area (D254).



Figure 85: Front lawn of Laporte nursery (D253).



Figure 86: Typical test pit on grass lawn of Laporte nursery (D255).



Figure 87: Shovel testing behind nursery near Laporte residence (D267).



Figure 88.: Sugar shack near Laporte residence (D269).



Figure 89: Laporte residence behind the nursery (D314).



Figure 90: Shovel testing in forested area in sugar shack (D315).



Figure 91: Shovel testing around sugar shack (D317).



Figure 92: Gravel pathway alongside Laporte residence from nursery to sugar shack (D319).



Figure 93: Back area of nursery (D322).



Figure 94: Shovel testing in woods behind sugar shack (D324).



Figure 95: Wooded area near sugar shack (D326).



Figure 96L Shovel testing in lower area behind Laporte residence (D331).



Figure 97: Slope at rear of Laporte property (D336).



Figure 98: Permanently wet area at bottom of Laporte property (D333).

Operation 15



Figure 99: Excavating test pits on lawn in Operation 15 (D230).

Operation 16



Figure 100: Looking down slope towards creek in middle of Operation 16 (D155).



Figure 101: Permanently wet area in Operation 16 at base of slope (D271).



Figure 102: Steep slope down towards Operation 16 area (D272).



Figure 103: Pedestrian survey of ploughed fields in Operation 16 (D277).



Figure 104: Permanently wet area in Operation 16 (D278).



Figure 105: Pedestrian survey in western portion of Operation 16, showing slope down towards Ottawa River (D286).



Figure 106: Permanently wet area in operation 16 (D283).

Operation 17



Figure 107: Steep slope in Operation 17 (D398).



Figure 108: Hydro line running through Operation 17 (D390).



Figure 109: Shovel testing in Operation 17 (D393).



Figure 110: Steep slope in Operation 17 (D394).

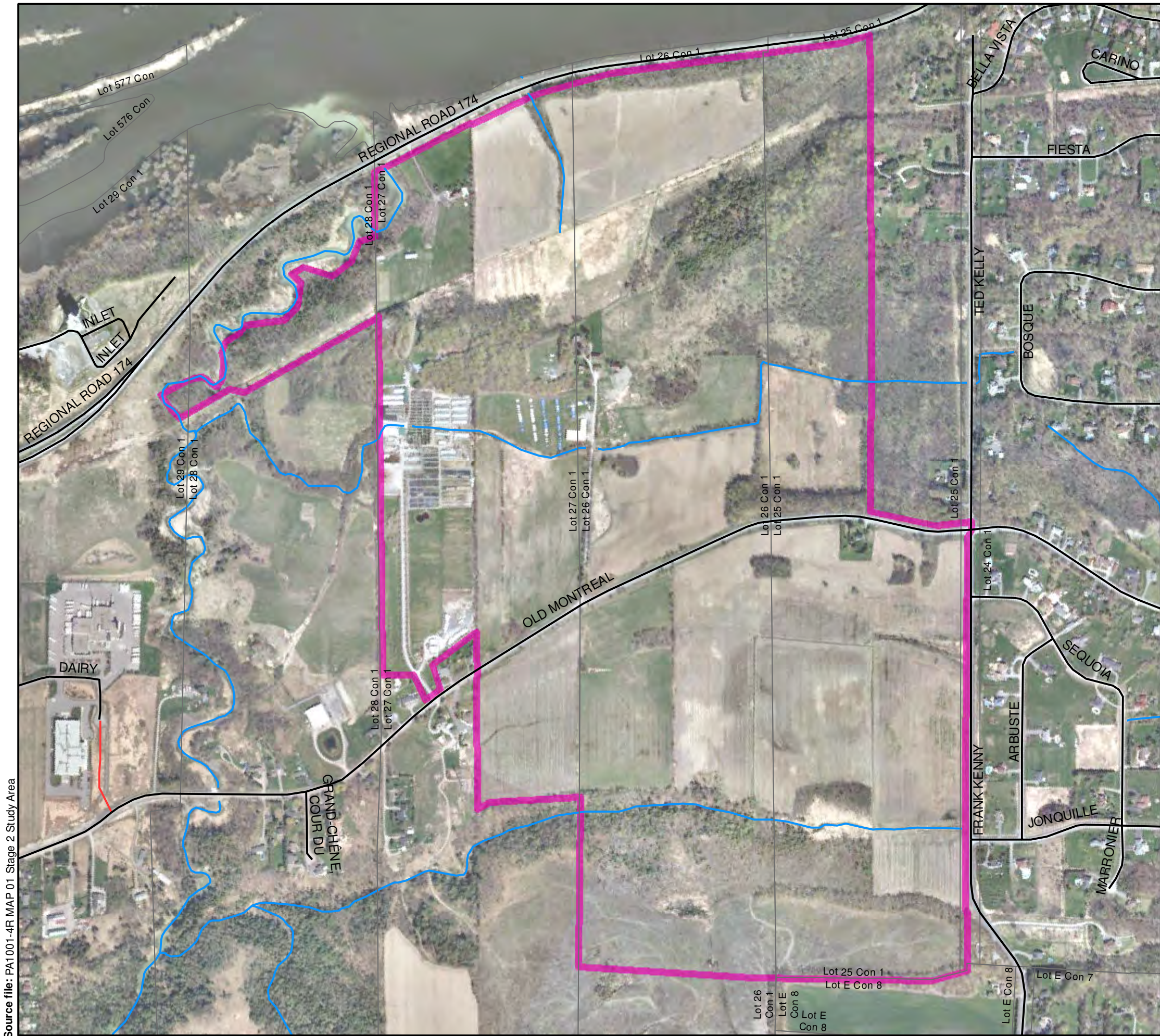


Figure 111: Cardinal Creek in Operation 17 (D396).

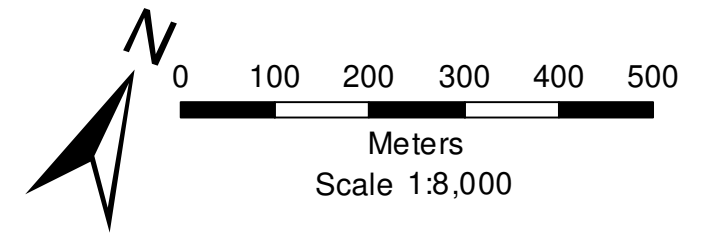


Figure 112: Cardinal Creek in Operation 17 (D397).

13.0 Maps

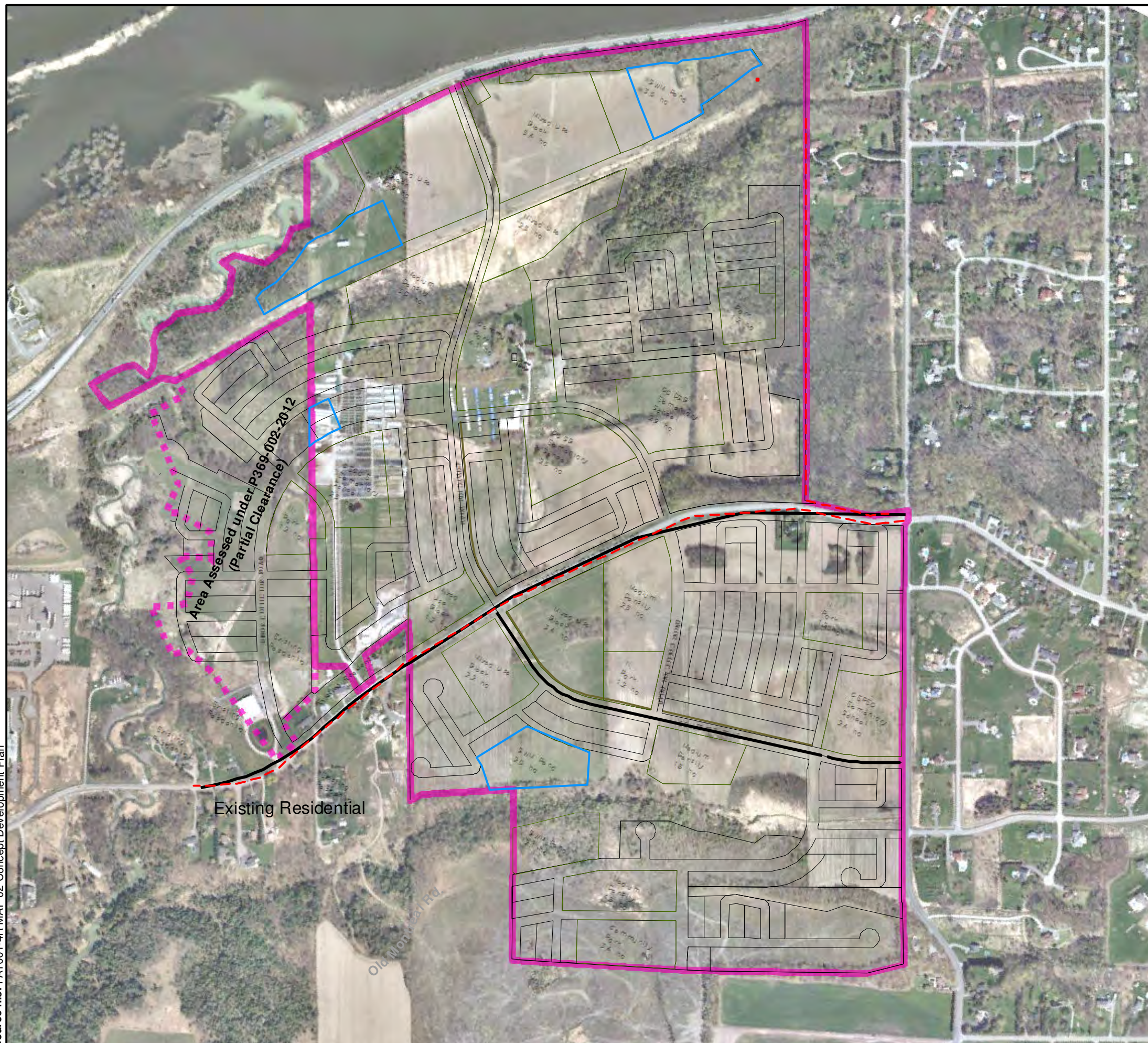


Stage 2 Study Area



Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: Study Area



- Stage 2 Study Area
- Previous Investigation



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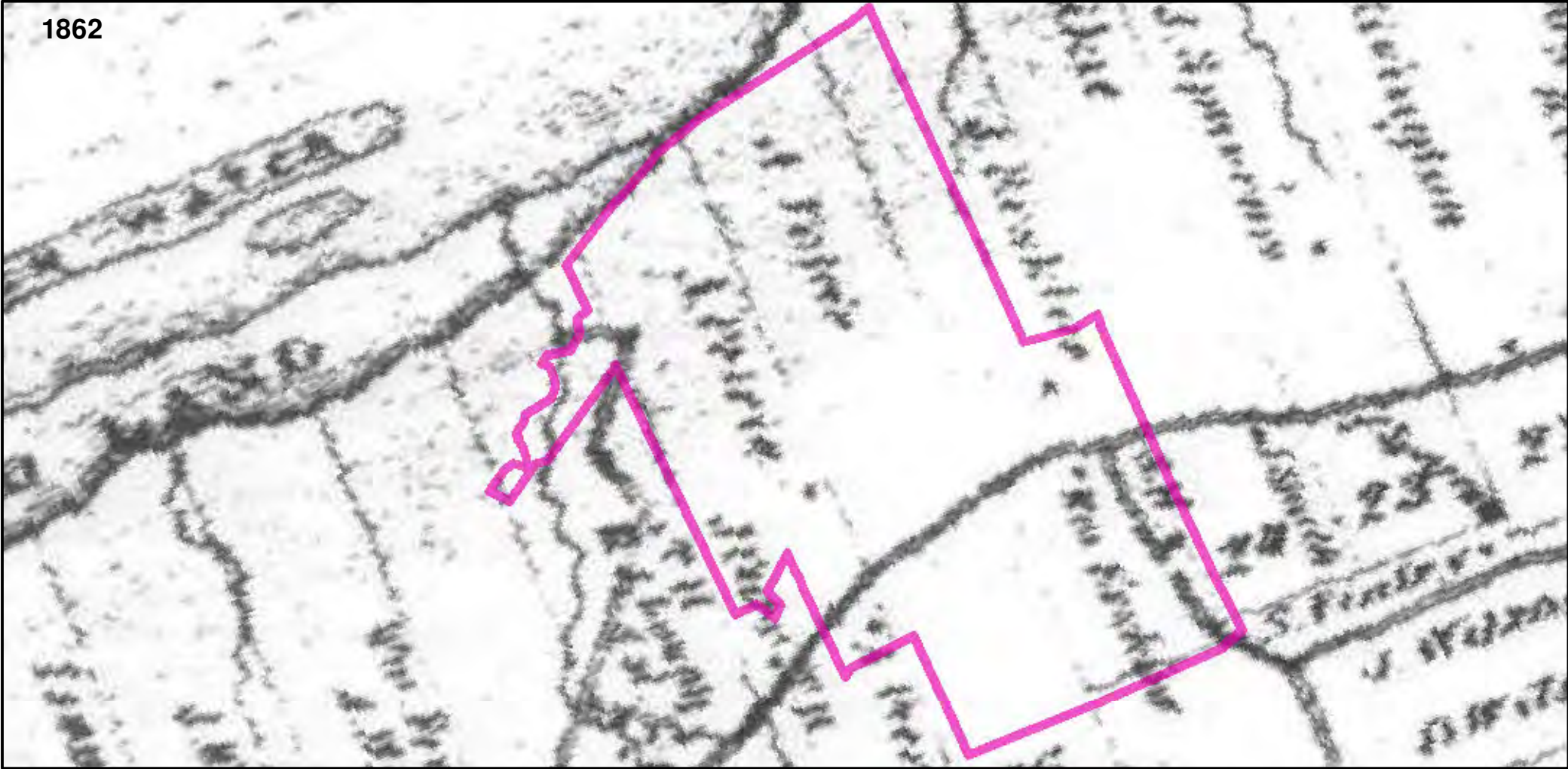
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Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: **Concept Development Plan**

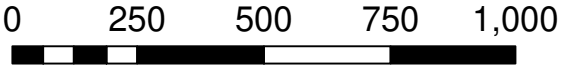


Stage 2 Study Area



Reference:
Historical Map - Segment of Plan of the Counties of Stormont, Dundas, Glengarry, Prescott & Russell, Walling 1862 (NMC 21998).

Historical Map - Segment of Prescott and Russell Supplement to the Illustrated Atlas of the Dominion of Canada. Toronto. H. Belden & Co., 1881.



Meters


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Project:
PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

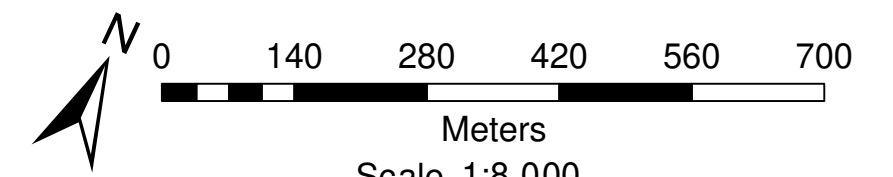
Title:
Georeferenced Historical Maps 2



 Operation Areas

Reference:

Air Photo circa 2011 provided by DSEL Engineering



Projection: Transverse Mercator Datum NAD 83, UTM Zone 18

Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: Operation Areas



Photo Location and Direction

Operation Areas

Findspots

Assessment Method

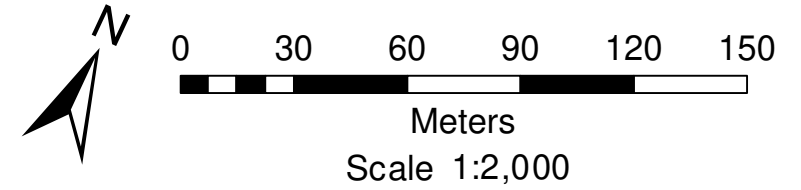
- Positive Shovel Test Pit
- Pedestrian Survey Diagnostic Findspot

Testing Strategy

- Clear, Pedestrian (5 m)
- Clear, Shovel (5 m)
- Disturbed
- existing residential, n/a
- Permanently Wet
- Slope >20 Degrees

Reference:

Air Photo circa 2011 provided by DSEL Engineering
Contours provided by DSEL Engineering



Projection: Transverse Mercator Datum NAD 83, UTM Zone 18

Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: Operation Area 3

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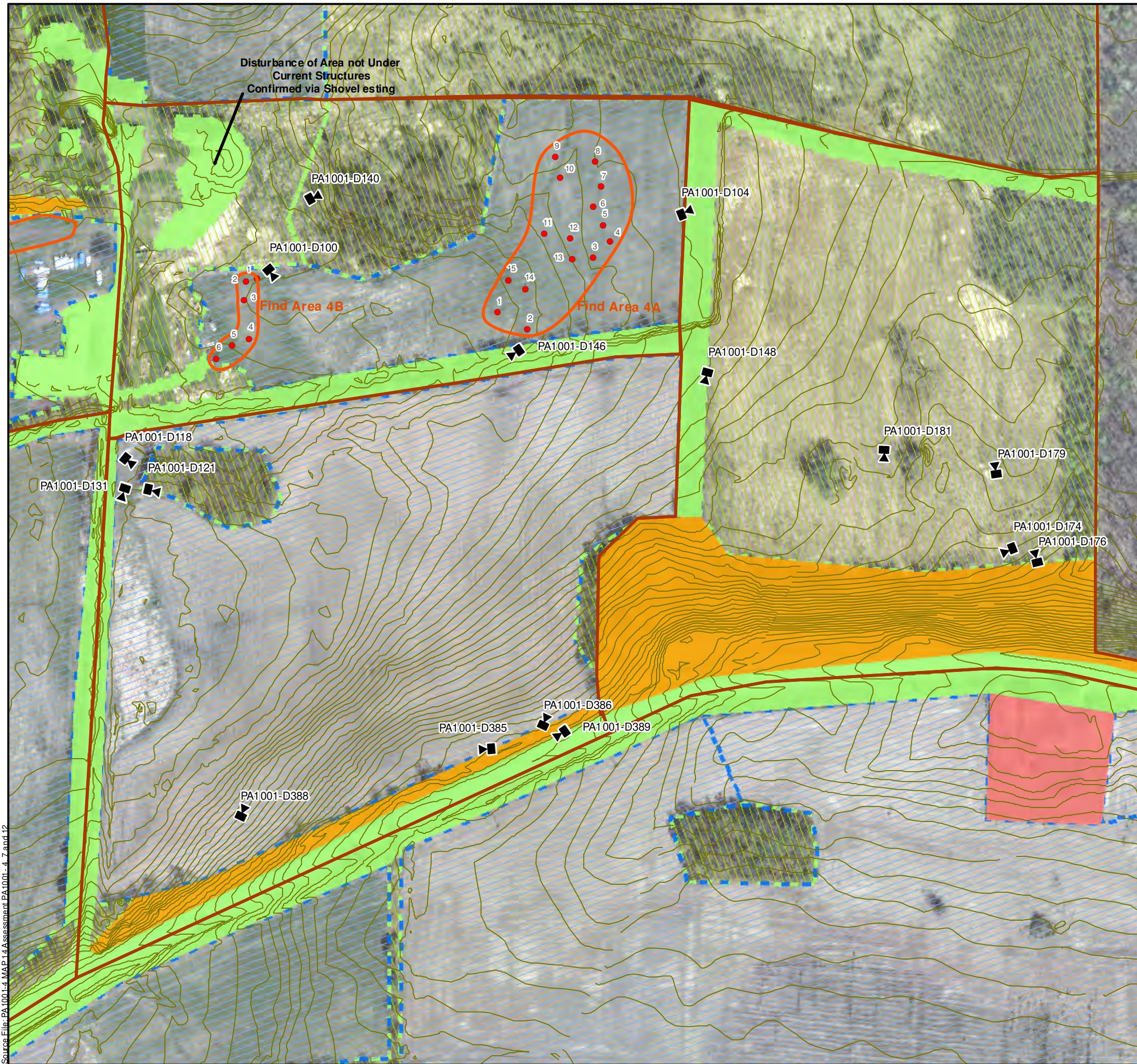


Photo Location and Direction
 Operation Areas
 Contours (25cm Interval)

Findspots

Assessment Method

- Positive Shovel Test Pit
- Pedestrian Survey Diagnostic Findspot

Testing Strategy

- Clear, Pedestrian (5 m)
- Clear, Shovel (5 m)
- Disturbed
- existing residential, n/a
- Permenently Wet
- Slope >20 Degrees

Reference:

Air Photo circa 2011 provided by DSEL Engineering
 Contours provided by DSEL Engineering

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 Scale 1:2,250
 Projection: Transverse Mercator Datum NAD 83, UTM Zone 18

Project: PA1001: Stage 2 Assessment
 Tamarack Cardinal Village Development
 Township of Cumberland, City of Ottawa, Ontario

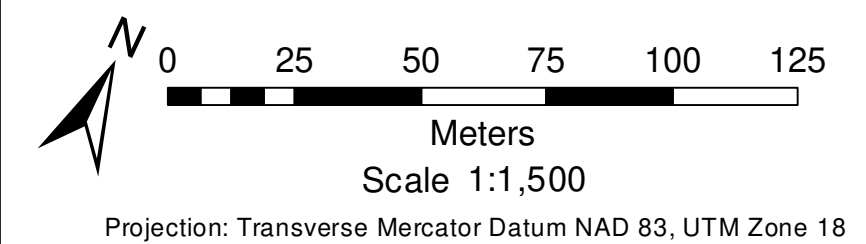
Title: Operation Areas
 4, 7, and 12

Source File: PA1001-4 MAP-14 Assessment PA1001-4_7 and 12



-  Photo Location and Direction
-  Operation Areas
- Testing Strategy**
-  Clear, Pedestrian (5 m)
-  Clear, Shovel (5 m)
-  Disturbed
-  existing residential, n/a
-  Permenently Wet
-  Slope >20 Degrees

Reference:
 Air Photo circa 2011 provided by DSEL Engineering



Project: PA1001: Stage 2 Assessment
 Tamarack Cardinal Village Development
 Township of Cumberland, City of Ottawa, Ontario

Title: Operation Area 5
 Overview

Source File: PA 1001-4 MAP 11 Assessment PA1001-5

Source File: PA 1001-4 MAP 12 Assessment PA1001-5 Stone House Detail

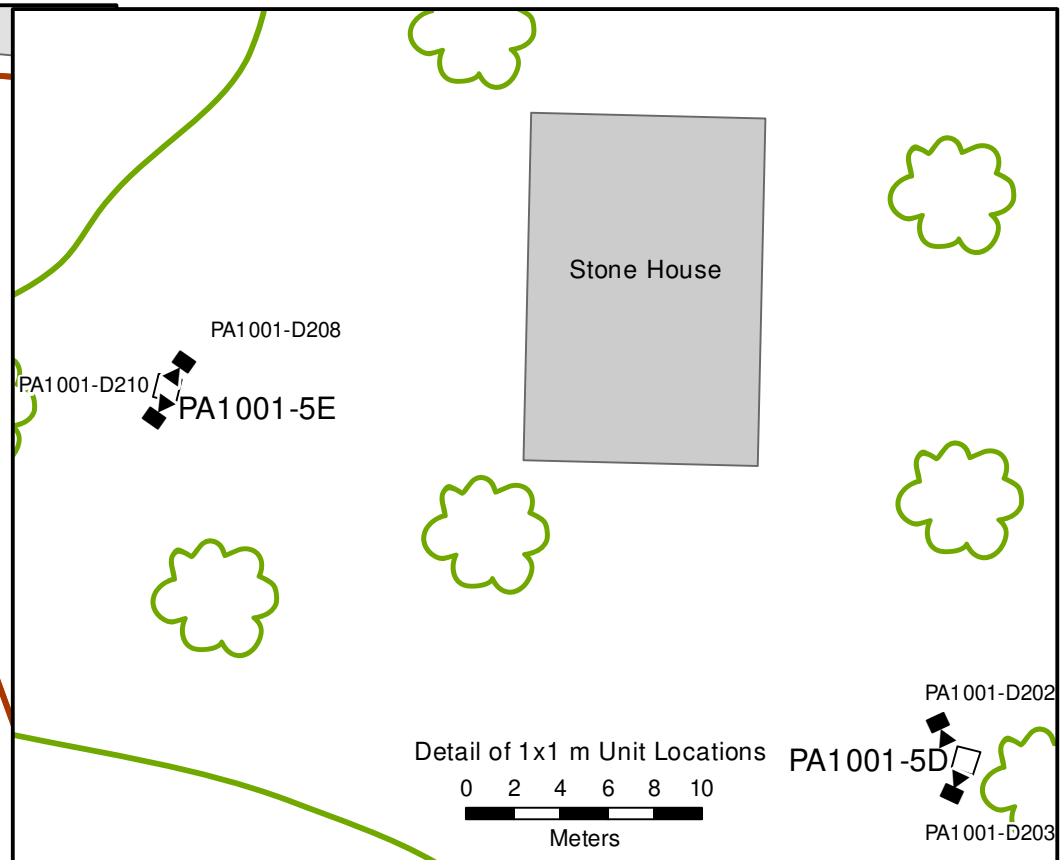
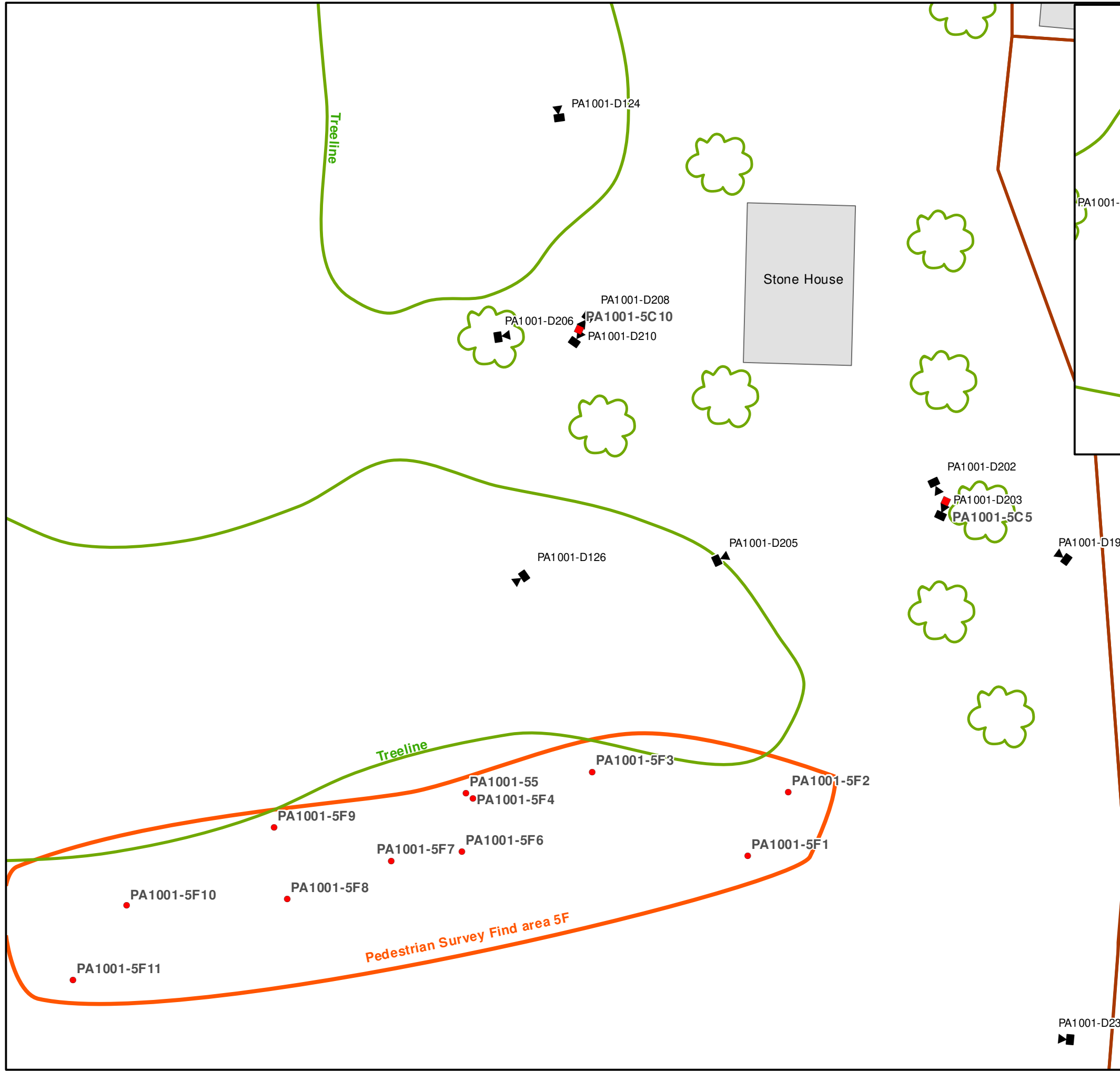


Photo Location and Direction

Findspots

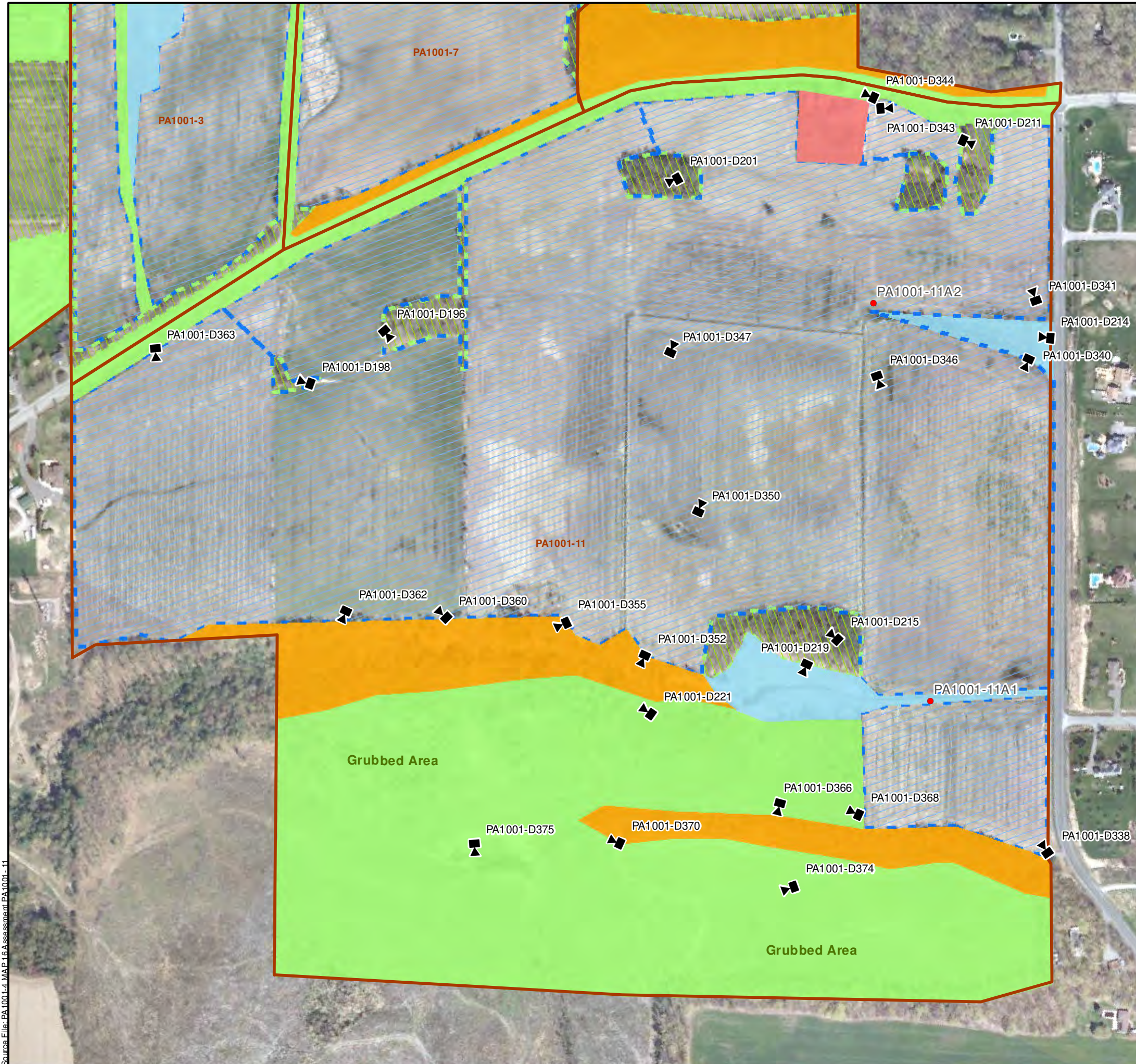
Assessment Method

- Positive Shovel Test Pit
- Pedestrian Survey Diagnostic Findspot

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Meters
Projection: Transverse Mercator Datum NAD 83, UTM Zone 18

Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: Operation Area 5
Stone House Detail



▼ Photo Location and Direction

▭ Operation Areas

Findspots

Assessment Method

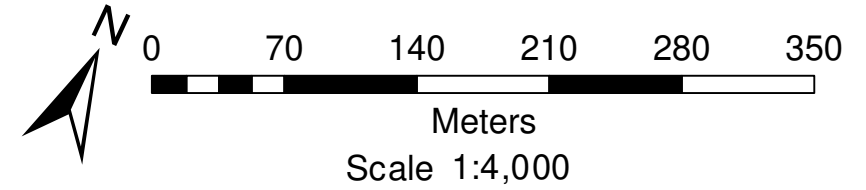
- Positive Shovel Test Pit
- Pedestrian Survey Diagnostic Findspot

Testing Strategy

- ▨ Clear, Pedestrian (5 m)
- ▨ Clear, Shovel (5 m)
- Disturbed
- existing residential, n/a
- Permanently Wet
- Slope >20 Degrees

Reference:

Air Photo circa 2011 provided by DSEL Engineering



Projection: Transverse Mercator Datum NAD 83, UTM Zone 18

Project: PA1001: Stage 2 Assessment
 Tamarack Cardinal Village Development
 Township of Cumberland, City of Ottawa, Ontario

Title: Operation Area 11

Source File: PA1001-4_MAP-16_Assessment_PA1001-11

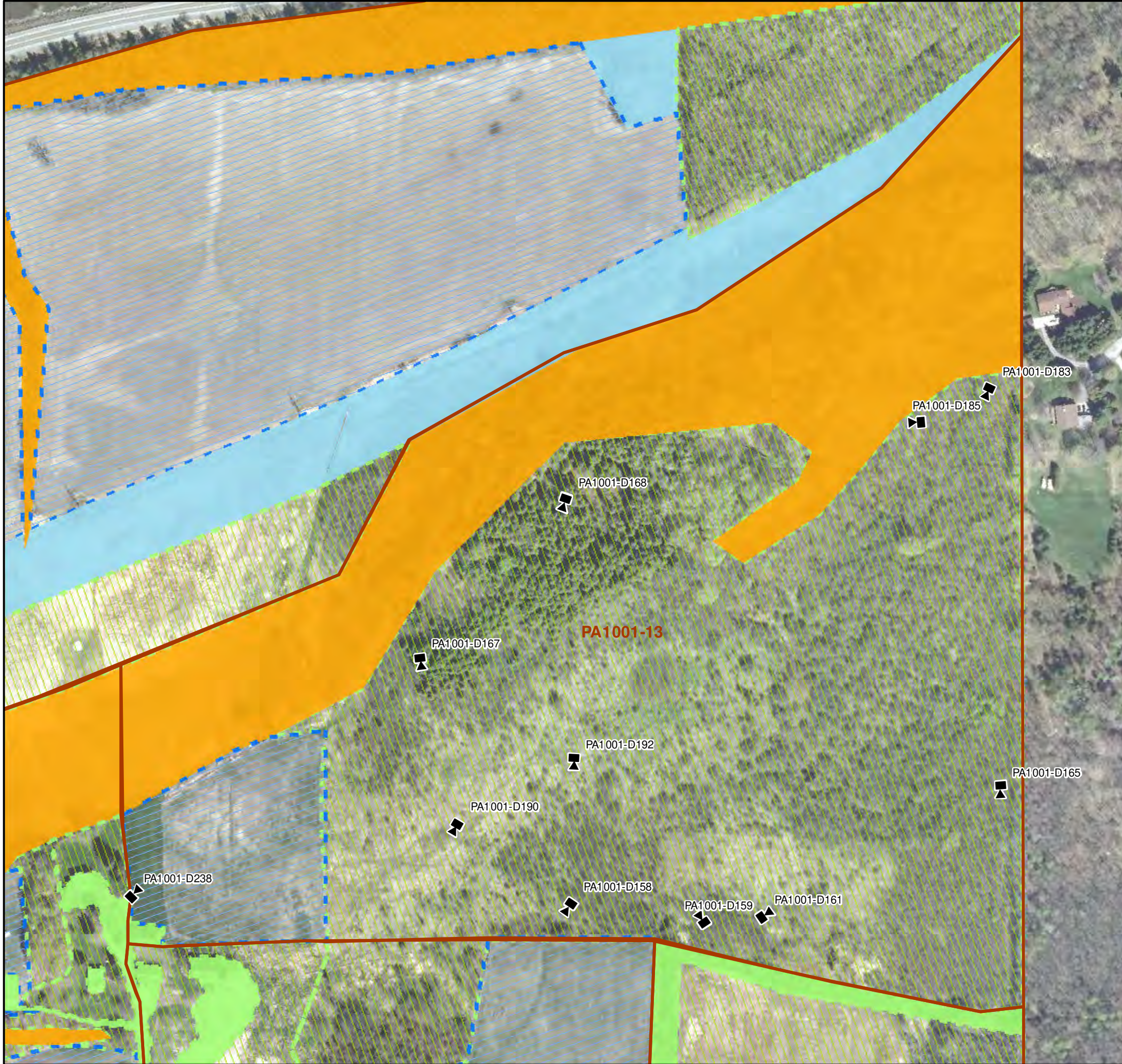


Photo Location and Direction

Operation Areas

Findspots

Assessment Method

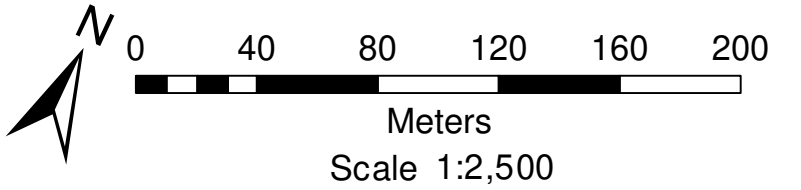
- Positive Shovel Test Pit
- Pedestrian Survey Diagnostic Findspot

Testing Strategy

- Clear, Pedestrian (5 m)
- Clear, Shovel (5 m)
- Disturbed
- existing residential, n/a
- Permanently Wet
- Slope >20 Degrees

Reference:

Air Photo circa 2011 provided by DSEL Engineering



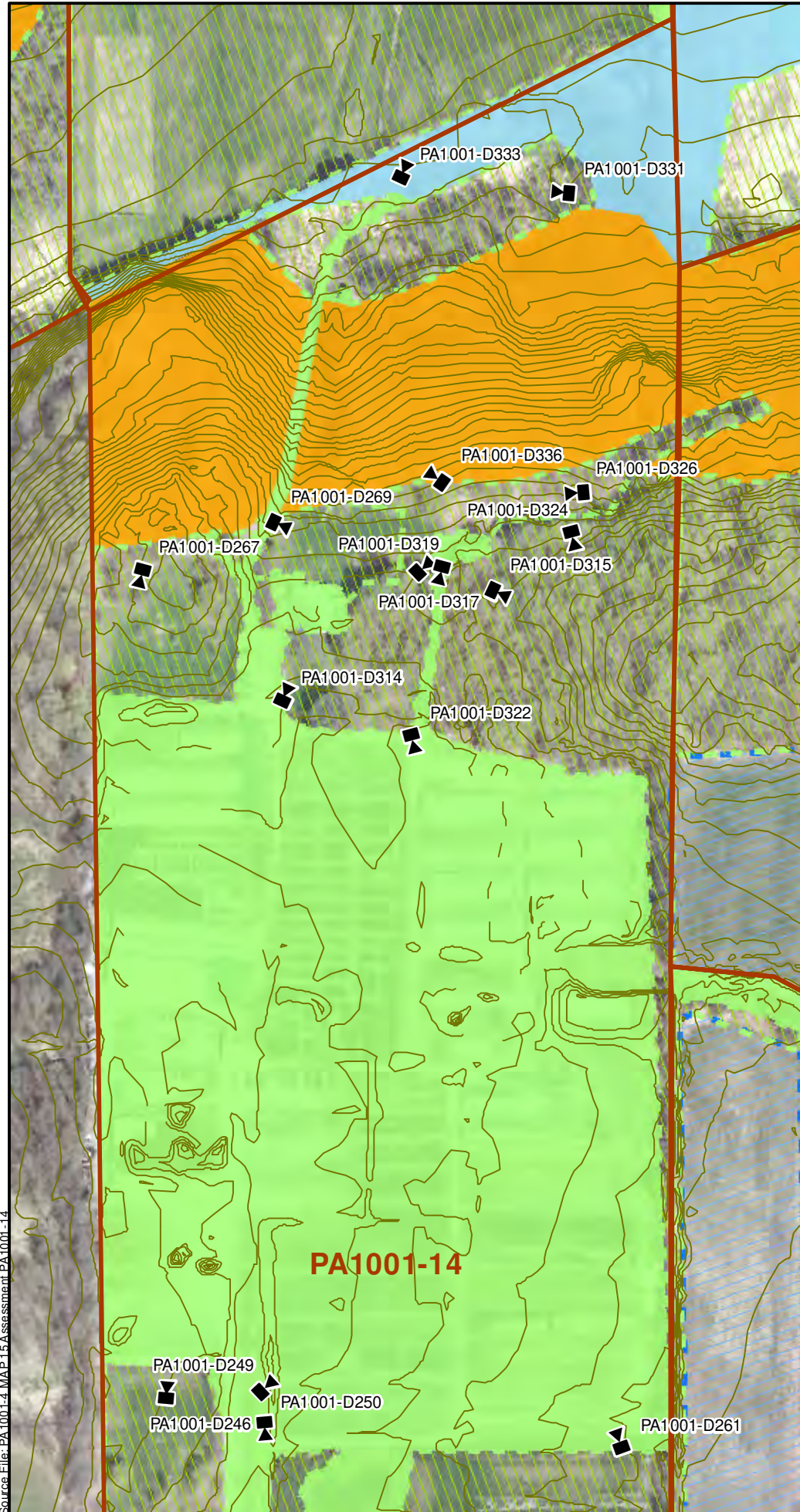
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Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: Operation Area 13

Source File: PA 1001-4 MAP 09 Assessment PA1001-13

Northern Portion



Southern Portion

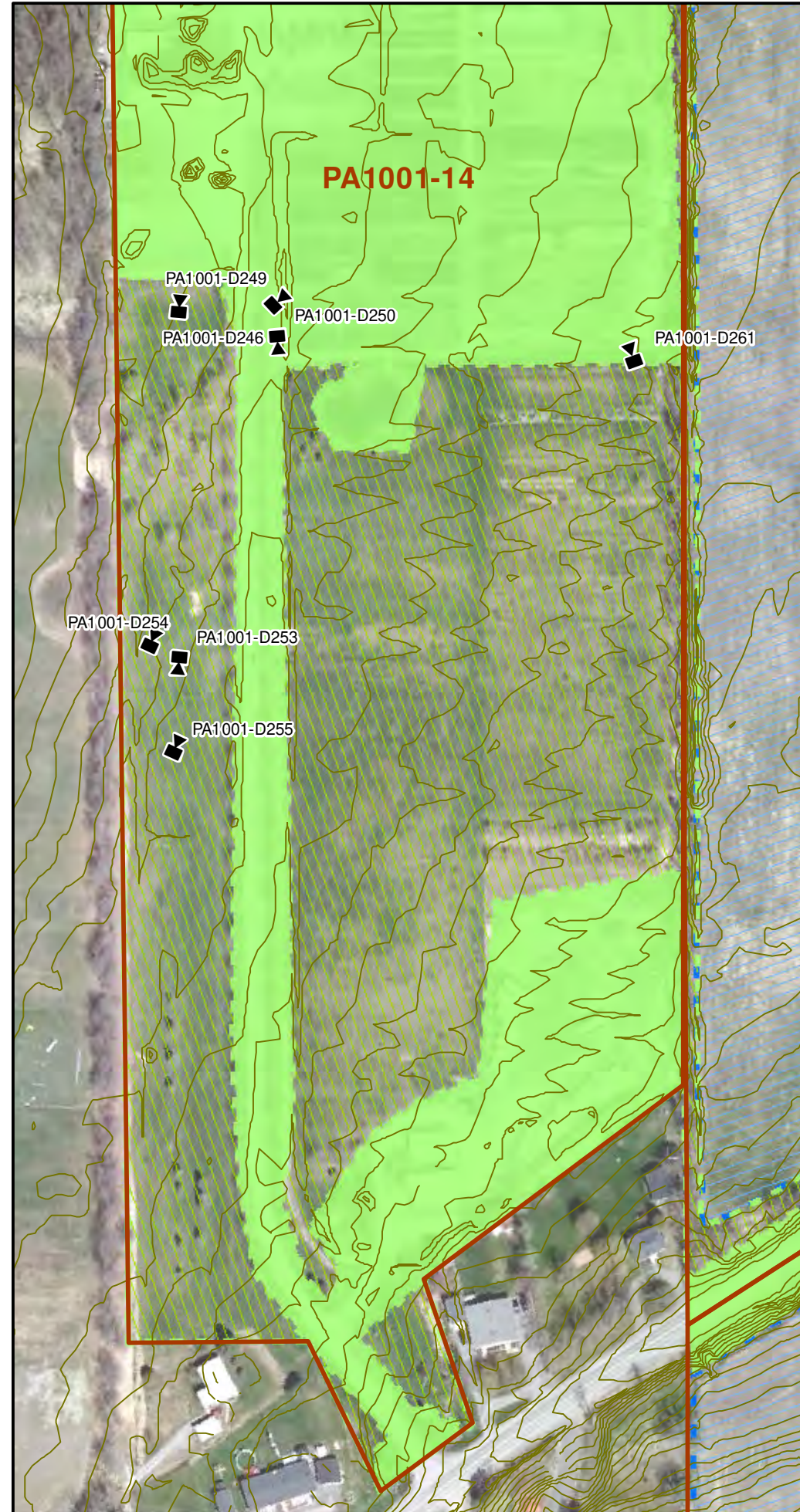


Photo Location and Direction

Operation Areas

Contours (25cm Interval)

Findspots

Assessment Method

Positive Shovel Test Pit

Pedestrian Survey Diagnostic Findspot

Testing Strategy

Clear, Pedestrian (5 m)

Clear, Shovel (5 m)

Disturbed

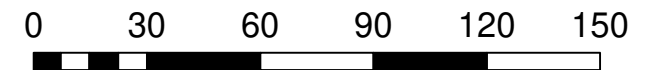
existing residential, n/a

Permanently Wet

Slope >20 Degrees

Reference:

Air Photo circa 2011 provided by DSEL Engineering
Contours provided by DSEL Engineering

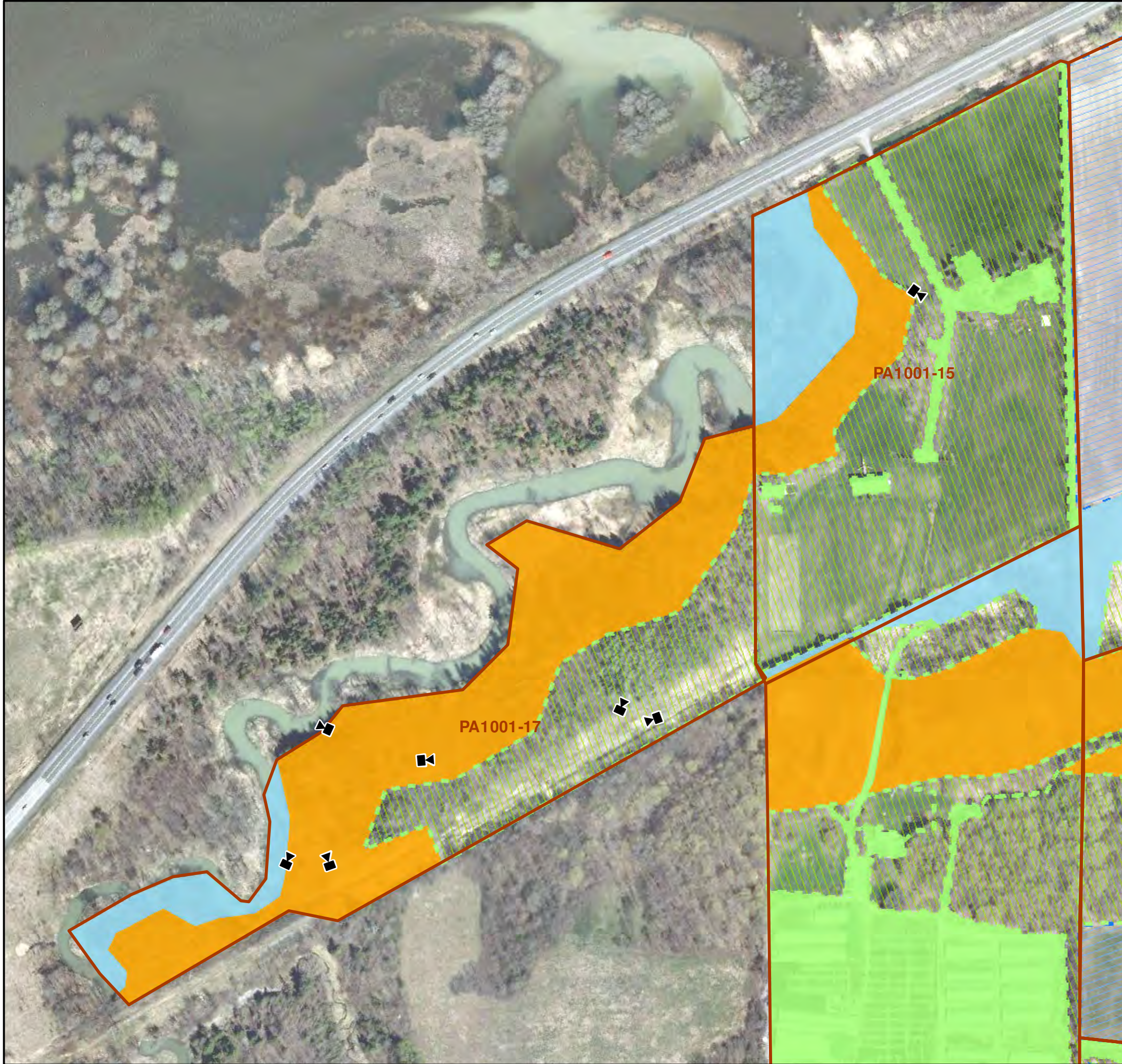



Meters
Scale 1:2,000


Projection: Transverse Mercator Datum NAD 83, UTM Zone 18

Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: Operation Area 14





 Photo Location and Direction






 Operation Areas

Findspots

Assessment Method

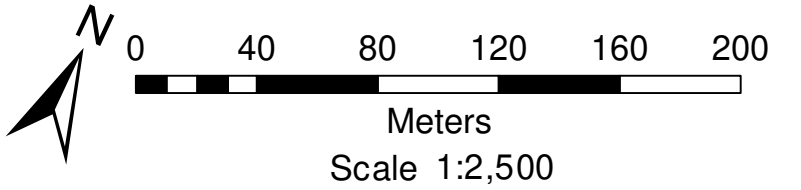
-  Positive Shovel Test Pit
-  Pedestrian Survey Diagnostic Findspot

Testing Strategy

-  Clear, Pedestrian (5 m)
-  Clear, Shovel (5 m)
-  Disturbed
-  existing residential, n/a
-  Permanently Wet
-  Slope >20 Degrees

Reference: _____

Air Photo circa 2011 provided by DSEL Engineering



Projection: Transverse Mercator Datum NAD 83, UTM Zone 18

Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: Operation Areas 15 and 17

Source File: PA 1001-4 MAP 09 Assessment PA1001-15 and 17



Photo Location and Direction

Operation Areas

Findspots

Assessment Method

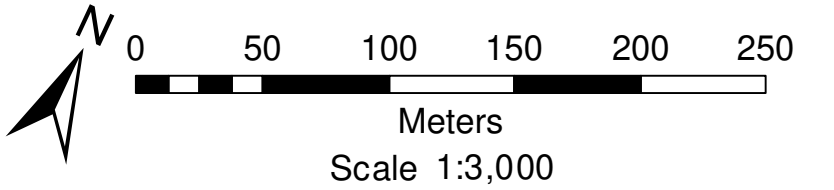
- Positive Shovel Test Pit
- Pedestrian Survey Diagnostic Findspot

Testing Strategy

- Clear, Pedestrian (5 m)
- Clear, Shovel (5 m)
- Disturbed
- existing residential, n/a
- Permanently Wet
- Slope >20 Degrees

Reference:

Air Photo circa 2011 provided by DSEL Engineering



Projection: Transverse Mercator Datum NAD 83, UTM Zone 18

Project: PA1001: Stage 2 Assessment
Tamarack Cardinal Village Development
Township of Cumberland, City of Ottawa, Ontario

Title: Operation Area 16

Source File: PA 1001-4 MAP 08 Assessment PA1001-16

Appendix A: Artifact Catalogue

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
11A1	1	Thinning flake	flake	Quartz							
11A2	1	pitcher	liquid service /pot	Yellowware		industrial slip	Mocha	Blue			c.1840
11A2	1	Holloware	holloware	Coarse Stoneware		Plain	Plain				
16A1	1	Tableware unspecified	unspecified	Refined White Earthenware	body	moulded	Moulded unspecified	Colourless	Incomplete		
16A2	1	Tableware unspecified	unspecified	Refined White Earthenware	body	moulded	Moulded unspecified	blue	Incomplete		
16A3	1	Holloware unspecified	unspecified	Refined White Earthenware	rim	Transfer /batt print	Unspecified Transfer	brown	Incomplete		
16A3	3	Tableware unspecified	unspecified	Refined White Earthenware		Plain	Plain	Colourless	Incomplete		
16A4	1	Tableware unspecified	unspecified	Refined White Earthenware		Plain	Plain				
3A1	1	Holloware	holloware	Refined White Earthenware	rim	industrial slip	Banded	blue	Incomplete	Industrial slip	
4A1	1	Bottle unidentified	unidentified	Blue/Green Glass (aqua)	finish / rim				Incomplete		
4A2	1	Blacking bottle	blacking	Coarse Stoneware	body				Incomplete	Derbyshire type ink/blacking	
4A3	1	Plate unspecified	plate /coaster /pat	Refined White Earthenware	body	Transfer /batt print	Willow	blue	Incomplete	Blue transfer	
4A4	1	Plate unspecified	plate /coaster /pat	Refined White Earthenware	body	Transfer /batt print	Unspecified Transfer	blue	Incomplete	Blue transfer	
4A5	1	Tableware unspecified	unspecified	Refined White Earthenware	body	painted	Painted unspecified	purple	Incomplete	Painted	
4A6	1	Biface	biface	Onondaga Chert					incomplete		

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
4A7	1	Plate unspecified	plate /coaster /pat	Refined White Earthenware	footring	Plain	plain	translucent	Incomplete	plain	
4A8	1	Plate unspecified	plate /coaster /pat	Refined White Earthenware	body	Transfer /batt print	Unspecified Transfer	blue	Incomplete	Blue transfer	
4A9	1	Tableware unspecified	unspecified	Refined White Earthenware	body	Transfer /batt print	Unspecified Transfer	blue	Incomplete	Blue transfer	
4A10	1	Plate unspecified	plate /coaster /pat	Vitrified White Earthenware	rim	moulded	Wheat / Ceres	translucent	Incomplete		
4A11	1	Clay smoking pipe spur / foot	clay pipe	White Clay	spur	Plain	plain				
4A12	1	Plate unspecified	plate /coaster /pat	Refined White Earthenware	body	Transfer /batt print	willow	blue	Incomplete	Blue transfer	
4A13	1	Plate unspecified	plate /coaster /pat	Refined White Earthenware	body	Transfer /batt print	Unspecified Transfer	blue	Incomplete	Blue transfer	
4A14	1	Plate unspecified	plate /coaster /pat	Refined White Earthenware	body	industrial slip	banded	green	Incomplete	Industrial slip	blue and green
4A15	1	Tableware unspecified	unspecified	Refined White Earthenware	body	Transfer /batt print	Unspecified Transfer	black	Incomplete	Other transfer (1st group/ black, dk brown, red)	
4B1	1	Plate unspecified	plate /coaster /pat	Refined White Earthenware	body	Sponged /stamped	Sponged	blue	Incomplete	Sponged /stamped	
4B1	1	saucer	cup /saucer	Refined White Earthenware	footring	Plain	plain	translucent	Incomplete	plain	
5C5	3	Bottle unidentified	unidentified	Blue/Green Glass (aqua)					Burned / Melted		
5C5	2	Pane glass	glazing material	Blue/Green Glass (aqua)							
5C5	1	Cut nail	nail	Iron							

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
5C5	1	Wire / drawn nail	nail	Iron							
5C5	1	Bottle unidentified	unidentified	Blue/Green Glass (aqua)	body						
5C5	3	Tableware unspecified	unspecified	Refined White Earthenware				translucent		glazed	
5C5	1	Tableware unspecified	unspecified	Refined White Earthenware		Transfer /batt print	Floral generic sheet			Transfer print	Turquoise
5C10	2	Bottle unidentified	unidentified	Colourless Glass	body						
5C10	3	Tableware unspecified	unspecified	Refined White Earthenware	rim			translucent		glazed	
5C10	1	Cut nail	nail	iron						T-head	
5D2	1	Mammal bone	bone	bone							
5D2	1	Mammal bone	bone	Bone					Perforated / cut		
5D2	4	Cut nail	nail	iron							
5E1	2	Wire / drawn nail	nail	iron							
5E1	1	cut nail	nail	iron						T-head	
5E1	2	Tableware unspecified	unspecified	Refined White Earthenware				translucent			
5E1	2	Wine bottle	bottle	Green Glass (dark olive)	body						
5E1	1	Bottle unidentified	unidentified	Amber/Brown Glass							
5E1	12	Bottle unidentified	unidentified	Colourless Glass							
5E1	1	Soda / mineral	bottle	Colourless Glass							

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
		water bottle									
5E1	1	Pharmaceutical / toiletry bottle	pharmaceutical / toiletry bottle	Blue/Green Glass (aqua)							letters "EN"
5E1	1	Buckle	buckle	Brass (copper + zinc)							"Stronghold"
5E1	1	strap	unspecified materials	Aluminum							
5E2	1	Buckle	buckle	Iron							
5E2	1	Mammal bone	bone	bone							
5E2	1	Sample	building material	Slate							
5E2	2	Wire / drawn nail	nail	iron							
5E2	8	Cut nail	nail	Iron							
5E2	1	Wine bottle	bottle	Green Glass (dark olive)	base						
5E2	1	Bottle unidentified	unidentified	Colourless Glass							
5E2	1	Pharmaceutical / toiletry bottle	pharmaceutical / toiletry bottle	Colourless Glass							"EXTERNAL"
5E2	1	Pharmaceutical / toiletry bottle	pharmaceutical / toiletry bottle	Colourless Glass							"ORTHROP"
5E2	1	Can unspecified	can	Iron							
5E2	1	Tableware unspecified	unspecified	Refined White Earthenware	body			translucent			
5E2	1	Tableware unspecified	unspecified	Refined White Earthenware	rim			translucent			
5E2	1	Tableware unspecified	unspecified	Refined White Earthenware	footring			translucent			

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
5E2	1	Unidentified Object	Unidentified Object	Plastic							"ranteed"
5E2	1	Tableware unspecified	unspecified	Fine Earthenware red/buff/brown						Jackfield	
5E3	1	Mammal bone	bone	bone							knuckle
5E3	5	Cut nail	nail	Iron							
5E3	2	Wire / drawn nail	nail	iron							
5E3	3	Wine bottle	bottle	Green Glass (dark olive)	body						
5E3	1	Soda / mineral water bottle	bottle	Green/Yellow Glass (20th Century pop)							
5E3	2	Bottle unidentified	unidentified	Colourless Glass							
5E3	2	Soda / mineral water bottle	bottle	Colourless Glass							
5E3	2	Jar	jar/closure	Blue/Green Glass (aqua)							
5E3	1	Soda / mineral water bottle	bottle	Colourless Glass	body						
5E3	1	Pharmaceutical / toiletry bottle	pharmaceutical / toiletry bottle	Colourless Glass	body						"PROPRIET EDICINE"
5E3	1	Bottle unidentified	unidentified	Blue Glass (light)						Moulded pattern	
5E3	1	Bottle unidentified	unidentified	Lead Glass	neck						
5E3	1	Lantern chimney	lantern	Colourless Glass	rim					Beaded chimney	
5E3	4	Tableware unspecified	unspecified	Refined White Earthenware	body			translucent			
5E3	3	Tableware	unspecified	Refined White	rim			translucent			

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
		unspecified		Earthenware							
5E3	1	Tableware unspecified	unspecified	Refined White Earthenware	body			translucent	Burned / Melted		
5E3	1	Tableware unspecified	unspecified	Refined White Earthenware	body			Blue		Transfer print	
5E3	2	Holloware	holloware	Coarse Earthenware red	body			Brown		glazed	
5E3	1	Tableware unspecified	unspecified	Refined White Earthenware		industrial slip	Banded	brown		Industrial slip	
5E3	1	plate	unspecified materials	Refined White Earthenware	body			Green		Transfer print	
5E3	2	Holloware	holloware	Refined White Earthenware				translucent			translucent inside, yellow outside
5E3	1	Holloware	holloware	Refined White Earthenware	rim	moulded	Moulded unspecified	translucent			translucent inside, yellow outside
5E4	1	Cigar holder / tip (commercial)	cigar / cigarette	plastic							
5E4	1	Lighting fixture	fittings / fixtures	Vitrified White Earthenware				translucent			
5E4	1	Tableware unspecified	unspecified	Refined White EW/Vit. White EW						Lithograph	
5E4	1	Tableware unspecified	unspecified	Bone China	rim						
5E4	1	Tableware unspecified	unspecified	Refined White Earthenware	body			translucent			
5E4	1	plate	unspecified materials	Refined White Earthenware	rim					Transfer print	turquoise
5E4	1	plate	unspecified	Refined White	body					Transfer	turquoise

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
			materials	Earthenware						print	
5E4	1	Pane glass	glazing material	Blue/Green Glass (aqua)							
5E4	2	Soda / mineral water bottle	bottle	Colourless Glass						MACHINE MADE BOTTLE	"Canada"
5E4	1	Jar	jar /closure	Colourless Glass	rim					Machine made jar	
5E4	1	Container unspecified	container	Colourless Glass							
5E4	2	Bottle unidentified	unidentified	Colourless Glass							
5E4	1	Mug	mug /tankard	Colourless Glass	handle						
5E4	1	Soda / mineral water bottle	bottle	Green/Yellow Glass (20th Century pop)	body						
5E4	1	Bottle unidentified	unidentified	Amber/Brown Glass	body						
5E4	1	Wire / drawn nail	nail	iron							
5E4	2	Cut nail	nail	iron							
5E5	3	Wire / drawn nail	nail	iron							
5E5	5	Cut nail	nail	Iron							
5E5	1	Pin	clothing adornment	Iron							10 cm long, with loop at end
5E5	1	Auger	auger	iron							
5E5	1	Wire / drawn nail	nail	Aluminum							roofing nail
5E5	2	Mammal bone	bone	bone							
5E5	1	Battery / part	machine	Carbon							graphite centre

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
5E5	8	Pane glass	glazing material	Blue/Green Glass (aqua)							
5E5	1	Wine bottle	bottle	Green Glass (dark olive)							
5E5	1	Soda / mineral water bottle	bottle	Green/Yellow Glass (20th Century pop)							
5E5	1	Bottle unidentified	unidentified	Green Glass		Transfer /batt print	No central motif generic				
5E5	3	Bottle unidentified	unidentified	Amber/Brown Glass						MACHINE MADE BOTTLE	
5E5	1	Bottle unidentified	unidentified	Amber/Brown Glass	base					MACHINE MADE BOTTLE	"Canada"
5E5	1	Lighting accessory	lighting accessory	Colourless Glass						Machine made	
5E5	1	jar	jar /closure	Colourless Glass						Machine made jar	
5E5	10	Bottle unidentified	unidentified	Colourless Glass	body						
5E5	1	Panel bottle	pharmaceutical / toiletry bottle	Colourless Glass	body						
5E5	1	Bottle unidentified	unidentified	Colourless Glass	finish / rim						
5E5	1	Tableware unspecified	unspecified	Colourless Glass						Press moulded (lime glass)	
5E5	1	Tumbler	glass /tumbler	Colourless Glass	base						
5E5	1	Saucer	cup /saucer	Bone China							
5E5	1	mug	mug /tankard	White Glass opaque							

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
				(milk)							
5E5	2	plate	unspecified materials	Hard Paste European/English Porcelain		gilding	Gilt band				
5E5	1	plate	unspecified materials	Bone China	rim						
5E5	1	Plate	unspecified materials	Hard Paste European/English Porcelain	rim					Lustre	
5E5	1	Bowl /individual service	bowl	Bone China						Lustre	painted overglaze
5E5	1	Tableware unspecified	unspecified	Bone China							
5E5	1	Tableware unspecified	unspecified	Refined White Earthenware				Black		Transfer print	
5E5	5	plate	unspecified materials	Refined White Earthenware	rim						
5E5	4	Tableware unspecified	unspecified	Refined White Earthenware	body						
5E5	1	plate	unspecified materials	Refined White Earthenware	footring						
5E5	1	Tableware unspecified	unspecified	Refined White Earthenware				Green		Lithograph	
5E5	1	Teacup	cup /saucer	Vitrified White Earthenware	rim						
5E5	1	Teacup	cup /saucer	Vitrified White Earthenware	footring						
5E5	1	plate	unspecified materials	Refined White Earthenware	body			Green		Transfer print	
5E5	2	plate	unspecified	Vitrified White		moulded	Wheat /				

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
			materials	Earthenware			Ceres				
5E5	1	Doll	doll	German bisque				pink			possible doll part
5E6	1	plate	unspecified materials	Refined White Earthenware	rim						
5E6	2	Tableware unspecified	unspecified	Refined White Earthenware	body						
5E6	2	Bottle unidentified	unidentified	Colourless Glass	body						
5E6	2	Wire / drawn nail	nail	iron							
5E6	1	Cut nail	nail	Iron							
5E6	1	Lid / cover unspecified	unspecified	iron							
5F1	1	plate	unspecified materials	Vitrified White Earthenware	rim	Plain	plain				
5F1	2	Tableware unspecified	unspecified	Refined White Earthenware		Plain	plain				
5F1	1	Tableware unspecified	unspecified	Soft Paste Porcelain		Plain	plain				
5F2	2	Tableware unspecified	unspecified	Refined White Earthenware		Plain	plain				
5F3	1	plate	unspecified materials	Refined White Earthenware		Transfer /batt print	Unspecified Transfer	blue		Transfer print	
5F4	1	Cut nail	nail	Iron							
5F5	1	Tableware unspecified	unspecified	Refined White Earthenware		Plain	plain				
5F5	1	plate	unspecified materials	Refined White Earthenware		Transfer /batt print	willow	blue		Transfer print	
5F5	1	Tableware unspecified	unspecified	Refined White Earthenware		Transfer /batt print	Unspecified Transfer	blue		Transfer print	

Provenience PA1001-	#	Function	Function: specific	Material	Portion	Decoration Type	Decorative Pattern	Decorative Colour	Condition	Primary Diagnostic	Comment
5F6	1	Tableware unspecified	unspecified	Refined White Earthenware		Plain	plain				
5F7	1	Tableware unspecified	unspecified	Refined White Earthenware		Transfer /batt print	Floral generic sheet	blue		Transfer print	
5F8	1	Soup plate	plate /coaster /pat	Refined White Earthenware		Plain	plain				
5F9	2	Teacup	cup /saucer	Refined White Earthenware		painted	Floral generic	blue		Painted polychrome	
5F9	1	plate	unspecified materials	Refined White Earthenware		Transfer /batt print	Willow	blue		Transfer print	
5F10	1	Tableware unspecified	unspecified	Refined White Earthenware		Transfer /batt print	Unspecified Transfer	blue		Transfer print	
5F11	1	Chamber pot	toiletory	Pearlware/Refined White EW		Plain	plain				

Appendix B: Photographic Catalogue

Image Number	Subject	Direction	Photographer
11	Small treed area on south side prior to grubbing	237	BM
12	Small treed area on south side prior to grubbing	269	BM
60	Conditions in field	170	BM
61	Conditions in field	168	BM
62	Conditions in field	138	BM
63	S. Hossain and U. Thompson in field	136	BM
64	DELETED	277	BM
65	S. Hossain and U. Thompson in field	62	BM
66	Field walking south of barn and boat storage	320	BM
67	Field walking south of barn and boat storage	320	BM
68	Field conditions	143	BM
69	Field conditions	162	BM
70	Field conditions	56	BM
71	Field conditions - long grass	190	BM
72	U. Thompson beside field	168	BM
73	Drainage between two fields	108	BM
74	Drainage between two fields	281	BM
75	Very wet edge to field	312	BM
76	S. Hossain doing pedestrian survey	275	BM
77	S. Hossain doing pedestrian survey	259	BM
78	U. Thompson beside field	199	BM
79	S. Hossain and U. Thompson in field	344	BM
80	Rocks on edge of field	210	BM
81	S. Hossain and U. Thompson field walking	317	BM
82	treed area in centre of field	307	BM
83	drainage ditch running through field	323	BM

Image Number	Subject	Direction	Photographer
84	drainage ditch running through field	164	BM
85	drainage ditch running through field	319	BM
86	S. Hossain standing on edge of field	195	BM
87	S. Hossain field walking	291	BM
88	S. Hossain and U. Thompson field walking	127	BM
89	Field conditions	168	BM
90	S. Hossain and U. Thompson field walking	326	BM
91	Exposed bedrock on edge of field	325	BM
92	Exposed bedrock on edge of field	328	BM
93	Field near barn	89	BM
94	field near barn with debris on western edge	33	BM
95	field near barn with debris on western edge	344	BM
96	field conditions	123	BM
97	field conditions	172	BM
98	U. Thompson in field looking towards barn and silo	321	BM
99	field with barn and sil in background	321	BM
100	U. Thompson standing on edge of field	115	BM
101	Field conditions	131	BM
102	Field conditions	358	BM
103	Field conditions	152	BM
104	Drainage ditch along south side of field	43	BM
105	S. Hossain and U. Thompson field walking	336	BM
106	S. Hossain and U. Thompson field walking	337	BM
107	South-east area with tall grass and small trees	319	BM
108	South-east area with tall grass and small trees	312	BM
109	South-east area with tall grass and small trees	293	BM
110	U. Thompson on edge of field with debris	190	BM
111	Steep slope at edge of field	174	BM

Image Number	Subject	Direction	Photographer
112	M. Lapensée-Paquette shovel testing	162	BM
113	M. Lapensée-Paquette shovel testing	164	BM
114	Wet area	102	BM
115	Wet area	156	BM
116	M. Lapensée-Paquette shovel testing on edge of wet area	324	BM
117	Shovel testing through tall grasses	48	BM
118	Shovel testing treed area in centre of field	104	BM
119	Shovel testing treed area in centre of field	69	BM
120	Shovel testing treed area in centre of field	40	BM
121	N. Kopp shovel testing in treed area in centre of field	78	BM
122	Shovel testing in tall grasses	165	BM
123	Cars parked in edge of field	338	BM
124	Shovel testing through open forest	327	BM
125	Shovel testing through open forest	323	BM
126	S. Hossain shovel testing through open forest	210	BM
127	M. Lapensée-Paquette shovel testing through open forest	274	BM
128	S. Hossain shovel testing through open forest	315	BM
129	Shovel testing through open forest	281	BM
130	Field of winter wheat growing	153	BM
131	Field of winter wheat growing, side of road disturbance	173	BM
132	Shovel testing through open forest	201	BM
133	Shovel testing through open forest	181	BM
134	Shovel testing through open forest	178	BM
135	U. Thompson shovel testing through open forest	161	BM
136	S. Hossain shovel testing through open forest	237	BM
137	U. Thompson shovel testing through open forest	77	BM
138	Shovel testing on edge of field	107	BM
139	Shovel testing on edge of field	141	BM

Image Number	Subject	Direction	Photographer
140	Shovel testing on edge of field	36	BM
141	Field area with barn and silo in the background	312	BM
142	Shovel testing on edge of field	171	BM
143	Shovel testing on edge of field	222	BM
144	C. Pechie at break	39	BM
145	C. Pechie at break	31	BM
146	Looking down towards drainage ditch on edge of field	210	BM
147	Shovel testing on edge of tall grassy area with small trees	274	BM
148	Shovel testing on edge of tall grassy area with small trees	198	BM
149	Crew at break	123	BM
150	Looking down towards drainage ditch on edge of field	235	BM
151	Looking down towards drainage ditch on edge of field	226	BM
152	Shovel testing on edge of field	310	BM
153	Forested area, above Cardinal Creek	268	BM
154	Shovel testing forested area	322	BM
155	Looking down towards creek	229	BM
156	Shovel testing through tall grasses to the east of the barn and silo	11	BM
157	Shovel testing through tall grasses to the east of the barn and silo	329	BM
158	Shovel testing through tall grasses	189	BM
159	Shovel testing through open forest	301	BM
160	Shovel testing through open forest	311	BM
161	Typical test pit	30	BM
162	Typical test pit	136	BM
163	Typical test pit	72	BM
164	Cut grass (golf range area) looking towards long grass	144	BM
165	Shovel testing forrested area	151	BM
166	Shovel testing through cedar forest	149	BM
167	Shovel testing through cedar forest	148	BM

Image Number	Subject	Direction	Photographer
168	Shovel testing through forest	174	BM
169	S. Hossain in forest	159	BM
170	DELETED	120	BM
171	N. Kopp at break	122	BM
172	Shovel testing through open forest	208	BM
173	Shovel testing through open forest	211	BM
174	Shovel testing area to south-east with tall grasses and small trees	223	BM
175	Shovel testing area to south-east with tall grasses and small trees	204	BM
176	U. Thompson Shovel testing area to south-east with tall grasses and small trees	321	BM
177	U. Thompson Shovel testing area to south-east with tall grasses and small trees	324	BM
178	s. Hossain Shovel testing area to south-east with tall grasses and small trees	348	BM
179	U. Thompson Shovel testing area to south-east with tall grasses and small trees	327	BM
180	C. Pechie and N. Kopp Shovel testing area to south-east with tall grasses and small trees	171	BM
181	C. Pechie and N. Kopp Shovel testing area to south-east with tall grasses and small trees	158	BM
182	C. Pechie and N. Kopp Shovel testing area to south-east with tall grasses and small trees	200	BM
183	Densely forested area	180	BM
184	Shovel testing through densely forested area	156	BM
185	Shovel testing through densely forested area	240	BM
186	Shovel testing through densely forested area	240	BM
187	Screen in forested area	137	BM
188	Densely forested area	63.8459	BM

Image Number	Subject	Direction	Photographer
189	Shovel testing in tall grasses	167.529	BM
190	Shovel testing in tall grasses	184.529	BM
191	Shovel testing in tall grasses	140.261	BM
192	Shovel testing in tall grasses	158.04900000000001	BM
193	Shovel testing near small cottage	281	BM
194	Shovel testing near small cottage	316	BM
195	Shovel testing near small cottage	40	BM
196	Shovel testing in small forested area	115	BM
197	Looking out from treed area to ploughable field	114	BM
198	N. Kopp shovel testing on edge of field	265	BM
199	K. Best shovel testing on edge of field	206	BM
200	S. Hossain and N. Kopp shovel testing on edge of field	313	BM
201	N. Kopp shovel testing in forested area	216	BM
202	Excavating 1 x1 m unit 5D	130	BM
203	Planview of unit 5D	0	BM
204	Planview of unit 5D	304	BM
205	Excavating 1 x1 m unit 5D	40	BM
206	Excavating 1 x1 m unit 5E	56	BM
207	South Profile of unit 5E	190	BM
208	South Profile of unit 5E	190	BM
209	Planview of unit 5E	15	BM
210	Planview of unit 5E	10	BM
211	S. Hossain and N. Kopp shovel testing in small sumac trees	114	BM
212	Drainage ditch - excluded area	228	BM
213	Drainage ditch and wet area	136	BM
214	Drainage ditch alongside field	266	BM
215	N. Kopp testing in forested area	288	BM
216	S. Hossain testing in long grass area	339	BM

Image Number	Subject	Direction	Photographer
217	N. Kopp testing in long grassy area	300	BM
218	Shovel testing in long grassy area	316	BM
219	Long grassy area with creek to the south	196	BM
220	Long grassy area with creek to the south	179	BM
221	S. Hossain and N. Kopp walking through grubbed area	307	BM
222	Grubbed area	261	BM
223	Grubbed area	273	BM
224	Grubbed area	315	BM
225	Grubbed area	331	BM
226	Grubbed area	18	BM
227	Grubbed area	276	BM
228	Grubbed area	131	BM
229	Grubbed area	74	BM
230	Shovel testing at 1190 HWY 174	101	BM
231	Shovel testing at 1190 HWY 174	102	BM
232	Field walking in Operation 5	250	BM
233	Field walking in Operation 5		BM
234	Field walking in Operation 5		BM
235	Field walking in Operation 5		BM
236	Field walking in Operation 5		BM
237	Field walking in Operation 9		BM
238	Field walking in Operation 13	N	BM
239	Ploughed area near old stone house	E	BM
240	Shed to the west of old stone house	S	BM
241	Field to SE of old stone house	s	BM
242	Shovel testing on lawn at JA Laporte nursery	ne	BM
243	Lawn at JS Laporte nursery	s	BM
244	Disturbed area at JS Laporte nursery	e	BM

Image Number	Subject	Direction	Photographer
245	Disturbed area at JS Laporte nursery	ne	BM
246	Shovel testing at JA Laporte nursery	n	BM
247	Driveway at JA Laporte nursery	s	BM
248	Shovel testing at JA Laporte nursery	nw	BM
249	Disturbed area at JA Laporte nursery	ne	BM
250	Disturbed area along driveway at JA Laporte nursery	SE	BM
251	Shovel testing at JA Laporte nursery	w	BM
252	Front lawn at JA Laporte nursery	n	BM
253	Front lawn at JA Laporte nursery	s	BM
254	shovel testing front lawn at JA Laporte nursery	N	BM
255	Typical test pit	N	BM
256	Typical test pit	N	BM
257	typical test pit	N	BM
258	Shovel testing near permanently wet area on front lawn of JA Laporte nursery	N	BM
259	Front lawn (east side) of JA Laporte nursery	S	BM
260	Front lawn (east side) of JA Laporte nursery	S	BM
261	Disturbed area in front of JA Laporte nursery	NW	BM
262	Disturbed area in front of JA Laporte nursery	N	BM
263	Rear lawn at JA Laporte nursery	E	BM
264	Lawn at rear of JA Laporte nursery	Ne	BM
265	Lawn at rear of JA Laporte nursery	N	BM
266	Lawn at rear of JA Laporte nursery	Se	BM
267	shovel testing at rear of JA Laporte nursery	S	BM
268	House at rear of JA Laporte nursery	S	BM
269	Maple syrup cabin at rear of JA Laporte property	E	BM
270	House at rear of JA Laporte property	SE	BM
271	Permanently wet area at south end of northern field (field south of HWY	W	BM

Image Number	Subject	Direction	Photographer
	174)		
272	Grassy slope behind Van Den Ham house	Sw	BM
273	Pedestrian survey on northern field	NW	BM
274	Pedestrian survey in northern field	W	BM
275	Pedestrian survey in northern field	N	BM
276	Northern ploughed field	E	BM
277	Pedestrian survey in northern field	S	BM
278	Permanently wet area in northern field	N	BM
279	Permanently wet area in northern field	Nw	BM
280	Top of slope down to HWY 174	N	BM
281	Slope up towards Van Den Ham house	S	BM
282	Northern field looking towards Van den Ham house	S	BM
283	Permanently wet area ay base of slope from Van den Ham house	Se	BM
284	Pedestrian survey in northern field (adjacent to Jabbour property)	E	BM
285	Ploughed field east of Jabbour property	N	BM
286	Pedestrian survey in northern field, showing slope down towards HWY 174	E	BM
313	Laporte front yard behind nursery	E	BM
314	Laporte house	N	BM
315	Shovel testing maple forest behind Laporte nursery	E	BM
316	Shovel testing maple forest behind Laporte nursery	E	BM
317	Shovel testing yard beside Laporte house	N	BM
318	Maple shack by Laporte house	NE	BM
319	Pathway alongside Laporte house	S	BM
320	back lawn at Laporte house	W	BM
321	back of Laporte nursery	S	BM
322	Back of Laporte nursery	SE	BM
323	Back of Laporte nursery	S	BM

Image Number	Subject	Direction	Photographer
324	John shovel testing on Laporte property	SE	BM
325	Nadine shovel testing on Laporte property	E	BM
326	back of sugar shack on Laporte property	W	BM
327	Slope down from top of Laporte property	N	BM
328	Maple trees on back of Laporte property	NW	BM
329	Maple trees on back of Laporte property	N	BM
330	John shovel testing on lower area of Laporte property	S	BM
331	Nadine shovel testing on lower portion of Laporte property	W	BM
332	Wet area on lower portion of Laporte property	N	BM
333	Wet area on lower portion of Laporte property	N	BM
334	Roadway leading down slope of Laporte property	N	BM
335	Crew on roadway that leads down through Laporte property	S	BM
336	Slope along backside of Laporte property	W	BM
337	Field walking on south side of Old Montreal Road	W	BM
338	Ploughed field on south side of Old Montreal Road	W	BM
339	Ploughed field on south side of Old Montreal Road	SW	BM
340	Ploughed field south of Old Montreal Road	S	BM
341	Pedestrian survey on fields south of Old Montreal Road	NW	BM
342	Pedestrian survey on field south of Old Montreal Road	W	BM
343	north edge of fields along Old Montreal Road	NE	BM
344	Pedestrian on north edge of ploughed fields south of Old Montreal Road	W	BM
345	Ploughed fields to the south of Old Montreal Road	S	BM
346	Pedestrian survey on south side of Old Montreal Road	SE	BM
347	Ploughed field to the south of Old Montreal Road	N	BM
348	Ploughed field to the south of Old Montreal Road	N	BM
349	Pedestrian survey on fields south of Old Montreal Road	N	BM
350	Pedestrian survey on fields south of Old Montreal Road	N	BM
351	forested area with steep slope	S	BM

Image Number	Subject	Direction	Photographer
352	forested area with steep slope	S	BM
353	Forested area with slope	SW	BM
354	Steep slope looking down towards creek	S	BM
355	Steep slope looking down towards creek	SW	BM
356	Forested area with steep slope	S	BM
357	Gravel roadway and storage area	W	BM
358	Gravel roadway and storage area	W	BM
359	Ploughed field south of Old Montreal Road	SW	BM
360	Pedestrian survey on fields south of Old Montreal Road	W	BM
361	Ploughed field south of Old Montreal Road	N	BM
362	Forested area with steep slope	S	BM
363	Ploughed field south of Old Montreal Road	SE	BM
364	Ploughed field south of Old Montreal Road	SW	BM
365	Lightly forested area on south side of Old Montreal Road	SE	BM
366	Lightly forested area with slope	S	BM
367	Lightly forested area with slope	S	BM
368	roadway into grubbed area	W	BM
369	quarried bedrock	SE	BM
370	Grubbed area	W	BM
371	Grubbed area	N	BM
372	Grubbed area	W	BM
373	Grubbed area	W	BM
374	Exposed subsoil in grubbed area	S	BM
375	Wet area in grubbed area with subsoil	S	BM
376	Grubbed area	S	BM
377	Grubbed area	S	BM
378	Grubbed area	N	BM
379	Grubbed area	E	BM

Image Number	Subject	Direction	Photographer
380	Grubbed area	SE	BM
381	Grubbed area	S	BM
382	Grubbed area	S	BM
383	Grubbed area	S	BM
384	Grubbed area	E	BM
385	Ploughed field on north side of Old Montreal Road	SW	BM
386	Ploughed field on north side of Old Montreal Road	N	BM
387	Ploughed field on north side of Old Montreal Road	NW	BM
388	Ploughed field on north side of Old Montreal Road	N	BM
389	Ploughed field on the edge of Old Montreal Road	SW	BM
390	Hydro line at base of ridge	SW	BM
391	Hydro line at base of ridge	W	BM
392	Hydro line at base of ridge	W	BM
393	Chris test pitting in Operation 17	N	BM
394	Forested steep slope in operation 17	N	BM
395	Forested steep slope in operation 17	NW	BM
396	Cardinal Creek	W	BM
397	Cardinal Creek in Operation 17 area	N	BM
398	Forested steep slope area	NE	BM

Appendix C: Map Catalogue

Map Number	Description	Created By
1	Study Area	B. Mortimer
2	Concept Development Plan	B. Mortimer
3	Operation Areas	B. Mortimer
4	Operation Area 3	B. Mortimer
5	Operation Area 4, 7 and 12	B. Mortimer
6	Operation Area 5	B. Mortimer
7	Operation Area 5 Stone house Detail	B. Mortimer
8	Operation Area 11	B. Mortimer
9	Operation Area 13	B. Mortimer
10	Operation Area 14	B. Mortimer
11	Operation Areas 15 and 17	B. Mortimer
12	Operation Area 16	B. Mortimer

Appendix D: Document Catalogue

Project	Description	Created By
PA1001	Cardinal Creek Field Notes Stage 2 (scanned to PDF "PA1001 – Cardinal Creek Stage 2 - Field Notes.pdf")	B. Mortimer