Geotechnical Engineering

Environmental Engineering

Hydrogeology

Geological Engineering

Materials Testing

Archaeological Studies

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Phase I - Environmental Site Assessment

Proposed Cardinal Creek Village Subdivision Lands Old Montreal Road Ottawa (Cumberland), Ontario

Prepared For

Taggart Group of Companies

Paterson Group Inc.

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Report: PE2392-2



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EXECUTIVE SUMMARY

ASSESSMENT

A Phase I - Environmental Site Assessment was carried out for the proposed Cardinal Creek Village subdivision lands, consisting of properties addressed at 1079 - 1422 Old Montreal Road, 1313-1325 Grand-Chêne Court, as well as additional land with no municipal address, in Lots 25, 26, and 27, Concession 1, in the former Township of Cumberland, now the City of Ottawa, Ontario. The purpose of this environmental assessment was to research the past and current use of the site and adjacent properties and identify any environmental concerns with the potential to have impacted the subject property.

The historical research indicated that the subject site has historically been vacant or used for agricultural purposes, with several residential dwellings along the south side of Old Montreal Road and the farmstead buildings at 1291 Old Montreal Road since at least since 1949.

Geotechnical investigations were conducted on the subject property (with the exception of the nursery property and the single-family residential properties) in 2009 and 2010. Based on the subsurface logs, no visual or olfactory evidence of contamination was observed.

Following the historical review, a site visit was conducted. The subject site is largely vacant, and is occupied by agricultural land or wooded. Single-family residential dwellings are present along both sides of Old Montreal Road and along Grand-Chêne Court. The Word of Life Church is present at 1123-1161 Old Montreal Road (north side) and Laporte Flowers and Nursery is present at 1211 Old Montreal Road. A residential dwelling is also located on the Laporte property, with a residential property further to the north and accessed via Regional Road 174. Farmstead buildings are present east of the nursery, at 1291 Old Montreal Road. Some debris, including a derelict bulldozer, was present in a field adjacent to the farmstead buildings. No significant concerns were identified with respect to the current use of the subject site or immediately adjacent properties.

It is our understanding that the existing farm buildings will be demolished prior to the redevelopment of the subject property, while many, if not all of the residential dwellings along Old Montreal Road, as well as the Word of Life Church and Laporte Flowers and Nursery, will be incorporated into the proposed Cardinal Creek Village subdivision. Based on the foregoing, and with consideration to the recommendations made below, it is our opinion that a Phase II - Environmental Site Assessment is not required for the property at this time.



RECOMMENDATIONS

Site Development

Any water materials encountered on the subject lands should be properly disposed during future redevelopment. Prior to the development of the Laporte nursery lands, which we understand may occur in the future, a more detailed assessment of this property should be carried out.

Water Wells

The house at 1291 Old Montreal Road is believed to be serviced by a private water well. The former residential dwelling located at the southwest corner of the Old Montreal Road and Frank Kenny intersection is considered to have been serviced with a private well. It is recommended that these water wells and any other potable wells encountered during redevelopment, be decommissioned by a licensed contractor, in accordance with Ontario Regulation 903 (Wells) at the time of future site development.

Private Sewage System

The house at 1291 Old Montreal Road and former dwelling mentioned above, are believed to be/have been serviced by private sewage systems. It is recommended that septic tanks associated with these systems and other private sewage systems encountered during redevelopment, be properly decommissioned.

Hazardous Building Materials

A designated substance survey (DSS), for any subject buildings that will be demolished as part of the redevelopment, will be required prior to demolition in accordance with the Occupational Health and Safety Act.

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1.0 INTRODUCTION

At the request of Taggart Group of Companies, Paterson Group conducted a Phase I - Environmental Site Assessment (ESA) of the properties comprising the proposed Cardinal Creek Village subdivision, addressed as 1079-1422 Old Montreal Road, 1313-1325 Grand-Chêne Court, as well as additional lands with no municipal address, in Lots 25, 26, and 27, Concession 1, in the former Township of Cumberland, now the City of Ottawa, Ontario.

This report has been prepared specifically and solely for the above noted project which is described herein. It contains all of our findings and results of the environmental conditions at this site.

2.0 SITE INFORMATION

Addresses: 1079-1422 Old Montreal Road; 1313-1325 Grand-Chêne

Court (as well as land with no civic addresses), Ottawa,

Ontario.

Location: Located to the north and south of Old Montreal Road, west

of Frank Kenny Road/Ted Kelly Lane and east of Cardinal Creek, and bounded to the north by Regional Road 174, in the City of Ottawa, formerly Township of Cumberland, Ontario. Refer to Figure 1 - Key Plan in the appendix for

the site location.

Latitude and Longitude: North portion: 45°29'55" N, 75°27'41" W

South portion: 45°30'06" N, 75°27'51" W

Site Description:

Configuration: Irregular

Legal Description: Part of Lots 25, 26, and 27, Concession 1 and Part of Lot

D, Concession 8, in the former Township of Cumberland

(now City of Ottawa), Ontario



Zoning:

RU (Rural), with areas zoned O1 (Parks and Open Space) along the ravine/creek running east-west through the southern parcel, AG (Agricultural) along Frank Kenny Road, RR7 (Rural Residential) along the western property boundary south of Old Montreal Road, RI (Rural Institutional) along the western property boundary north of Montreal Road and EP (Environmental Protection) along Cardinal Creek on the northwestern portion of the property (north of Old Montreal Road).

Current Use:

The subject site is predominantly vacant, and consists of wooded areas and agricultural fields. Single family residential dwellings are located along both the north and south sides of Old Montreal Road and also further north of Old Montreal Road. Word of Life Church, Laporte Flowers and Nursery, and a farmstead dwelling with several associated buildings are located on the north side of Old

Montreal Road.

Services: The site is located in an area serviced by private wells and

sewage systems. However, any future development will be

serviced with municipal water and sewer.

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3.0 SCOPE OF WORK

The scope of work for this Phase I - Environmental Site Assessment was as follows:		
	Investigate the existing conditions present at the subject site by carrying out a field study and historical review in accordance with CSA Z768-01.	
	Present the results of our findings in a comprehensive report.	
	Provide a preliminary environmental site evaluation based on our findings.	
	Provide preliminary remediation recommendations and further investigative work if contamination is encountered or suspected.	



4.0 METHOD OF INVESTIGATION

4.1 Historical Research

Federal Records

The methodology for the Phase I - Environmental Site Assessment program was carried out in two segments. The first consisted of a historical review which included a brief research of the past use of the site. This portion of the program was carried out by Paterson personnel from the Environmental Division. The following is a list of the key information sources reviewed by our firm.

_ _ _	Air photos at the Energy Mines and Resources Air Photo Library. National Archives. Maps and photographs (Geological Survey of Canada surficial and subsurface mapping). PCB Waste Storage Site Inventory.
	ncial Records
	MOE document titled "Waste Disposal Site Inventory in Ontario". MOE Brownfields Environmental Site Registry. MOE Freedom of Information. Office of Technical Standards and Safety Authority, Fuels Safety Branch.
Muni	cipal Records
	The Corporation of the City of Ottawa. City of Ottawa document entitled "Old Landfill Management Strategy; Phase 1 - Identification of Sites, City of Ottawa, Ontario"; finalised October 2004.
Local	Information Sources
	Previous Engineering Reports.

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4.2 **Field Assessment**

The second segment of the Phase I - ESA consisted of a site visit which included a cursory assessment of the environmental conditions of the subject property. The field assessment was carried out on August 12 and 22, 2011 by personnel from the Environmental Division.

As part of the field assessment, the subject site was inspected for signs of the following:

Evidence of previous or existing fuel storage tanks.
On-site use or storage of hazardous materials.
On-site handling or disposal of liquid or solid waste materials.
Above-ground piping systems, including pumps, valves and joints.
Truck or rail loading or unloading areas.
Electrical conduits, abandoned pipelines or pumping stations.
Remnants of old buildings.
Signs of surficial contamination (ie. staining, distressed vegetation).
Unnaturally discoloured, ponded or flowing waters.
Surficial drainage, wetlands, natural waterways or watercourses through the
properties (i.e. ditches, creeks, ponds, poor drainage).
Any evidence of potable water supply wells or groundwater monitoring wells
(such as leak detection monitoring wells for underground storage tank systems,
or abandoned systems).
Any abnormal odours associated with the site, whether from on-site or off-site
sources.
The presence of any recent soil disturbances such as soil removal, filling, tilling,
grading, etc.
Asbestos containing materials (ACMs).
Urea formaldehyde foam insulation (UFFI).
PCB containing products.
Ozone depleting substances (ODS).
Lead-containing materials.
Current use of neighbouring properties.



5.0 FINDINGS OF THE ENVIRONMENTAL ASSESSMENT

5.1 Historical Review

Air Photo Research

Historical air photos from the National Air Photo Library were reviewed. Based on the review, the following observations have been made:

1949

The subject site and adjacent properties are vacant cleared land and appear to be used for agricultural purposes. What appears to be a railway line transects the northern portion of the subject site in an approximate east-west direction. Cardinal Creek borders the property to the west, however a portion of the creek transects the northwestern portion of the site in an approximate northeast-southwest direction. Rural residences are present along the south side of Old Montreal Road, while the existing farmstead is present at 1291 Old Montreal Road, north of Old Montreal Road on the central portion of the subject site. Building structures appear to be present just east of Cardinal Creek, also north of Old Montreal Road. The area to the south of the creek and ravine, located on the southern portion of the site, is wooded.

The property is bordered to the north by Regional Road 174 followed by vacant land and the Ottawa River. Vacant land with a possible farmstead followed by Ted Kelly Lane and Frank Kenny Road are present to the east of the site, with Cardinal Creek to the west. Further east and west are agricultural lands or wooded areas. Agricultural fields and wooded areas are also present to the south of the subject property.

1958

No significant changes have been made to the subject site or surrounding properties.

1970

The property to the west of 1291 Montreal Road appears to have been developed with the present-day greenhouse business. A laneway and possible residential structure is present north of the greenhouse business. Additional residences have been developed along the north and south sides of Old Montreal Road, on the western portion of the subject site. Grand-Chêne Court is present.



What appear to be residential dwellings are present east of Frank Kenney Road along Wilhaven Drive. Residential dwellings are also present along Old Montreal Road, west of the subject site and a possible farmstead is present west of the site, north of Regional Road 174. No other significant changes have been made to the subject site or surrounding properties.

The residential dwellings at 1172, 1176 and 1180 Old Montreal Road are present. Activity appears to have occurred on the southern portion of the property addressed 1208 Old Montreal Road and the property at 1222 Old Montreal Road may be under construction.

Additional residential development has occurred along Ted Kelly Lane. No other significant changes appear to have been made to the subject site or surrounding properties.

1988 (Poor Quality) No significant changes appear to have been made to the subject site or surrounding properties.

(City of Ottawa website) The former rail line on the northern portion of the property has been removed and this land appears to be occupied by a hydro corridor. What appears to be a communications tower is present at 1208 Old Montreal Road. A residential dwelling and associated structures, are now present at the property addressed 1222 Old Montreal Road. A former dwelling at the southwest corner of the Old Montreal Road and Frank Kenny Road intersection is no longer present. The property further to the west, north of Old Montreal Road, appears to have been developed with the present day dairy.

(City of Ottawa website) No significant changes have been made to the subject site or surrounding properties.

(City of Ottawa website) Numerous shrink-wrapped boats are being stored at the farmstead at 1291 Old Montreal Road. The property at 1222 Old Montreal Road has been redeveloped with a large single-family residential dwelling. No other significant changes have been made to the subject site or surrounding properties.

(City of Ottawa website) The subject site and surrounding properties remain unchanged from the previous photograph.

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2011

2002

2005

2008



Laser copies of selected aerial photographs reviewed are included in the appendix.

National Archives

City Directories and Fire Insurance Plans are not available for the area of the subject property.

Natural Resources Canada (NRCAN)

The Geological Survey of Canada website on the Urban Geology of the National Capital Area was consulted as part of this assessment. Based on the information from NRCAN, bedrock in the area of the site consists of Middle Ordovician shale of the Rockcliffe Formation in the northeastern portion of the site, Lower Ordovician dolostone of the Oxford Formation in the northwestern portion of the site, interbedded limestone and dolostone of the Gull River Formation in the central and southwestern portions of the site, and Middle Ordovician limestone of the Bobcaygeon Formation in the eastern and southeastern portions of the site.

Based on the mapping, two shallow bedrock ridges are present, one north and one south of Old Montreal Road, both running in an east-west direction. Drift thickness in the vicinity of these ridges is 0 to 1 m, with thicker overburden deposits up to 25 m present in the central and southwestern portions of the site. Overburden soils consist of offshore marine sediments in the northern and western portions of the site, glacial till in central portions of the site, and near shore marine sediments in the central and eastern portions of the site.

PCB Inventory

A search of national PCB waste storage sites was conducted. No PCB waste storage sites are located within 1 km of the subject property.

Technical Standards and Safety Authority (TSSA)

The TSSA, Fuels Safety Branch in Toronto, was contacted on August 22, 2011 and again on November 7, 2012, to inquire about current and former underground storage tanks, spills and incidents for the subject site and neighbouring properties. There are no underground storage tanks (USTs) recorded in the TSSA registry for the subject property. No neighbouring properties are registered with the TSSA.



Ontario Ministry of Environment (MOE)

The Ontario Ministry of Environment document entitled "Waste Disposal Site Inventory in Ontario, 1991" was reviewed as part of the historical research. This document includes all recorded active and closed waste disposal sites, industrial manufactured gas plants and coal tar distillation plants in the Province of Ontario. No active or closed waste disposal sites or other industrial properties are located in the vicinity of the subject site.

A search of the MOE Brownfields environmental site registry was conducted as part of this assessment. No record of site conditions (RSC) were listed in the data base for the subject site or neighbouring properties within a 1 km radius.

A requisition form was sent to the MOE requesting a search into regulatory infractions, legal undertakings against Laporte Flowers and Nursery, spill occurrences, existing waste generator numbers, and waste registrations at this specific property and neighbouring sites. A response had not been received at the time of writing this report, however the client shall be notified should any potential environmental concerns arise.

The MOE search is not considered to be an exhaustive search, and is subject to any matters that an examination of the site and neighbouring lands may reveal.

City of Ottawa Old Landfill Document

The document prepared by Golder Associates entitled "Old Landfill Management Strategy, Phase I - Identification of Sites, City of Ottawa", was reviewed. No former landfills were identified within a 1 km radius of the subject property.

Previous Engineering Reports

Paterson has conducted various environmental assessments in the vicinity of the subject property. A review of our files did not indicate any environmental concerns with respect to the subject land.

Geotechnical investigations were conducted on the subject site (with the exception of the Laporte Nursery and single-family residential properties) by Paterson in 2009 and 2010. No signs of environmental contamination or deleterious fill material were observed throughout the course of the investigations.



5.2 Exterior Assessment

Buildings

The subject site is largely vacant. The Church property addressed as 1123-1161 Old Montreal Road is occupied by a one (1) storey slab-on-grade church building. The building is finished on the exterior with metal siding and a sloped, metal roof. A two (2) storey barn is also present on the site. The barn is finished on the exterior with wood and has a sloped metal roof.

The Laport Nursery property addressed 1211 Old Montreal Road, is occupied by two (2) metal sided commercial structures as well as numerous plastic covered, steel frame greenhouse structures with chimneys. A residential dwelling is also present north of the these structures.

Several buildings associated with the former farmstead at 1291 Old Montreal Road are present on the subject site. The farmstead consists of a two-storey wood frame house with an asphalt shingle roof, several wood-frame sheds with asphalt shingle roofs and wooden siding, and a metal-sided storage shed. All the sheds appear to be slab-ongrade structures.

The residential dwellings located along Old Montreal Road and Grand-Chêne Court are a combination of one- and two-storey structures constructed with concrete foundations. Exterior finishes are a combination of vinyl siding, brick and stone facade, with peaked roofs covered with asphaltic shingles. Private garages and/or storage structures are associated with the dwellings. A residential property, accessed via Regional Road 174, is also present further north of the Laporte nursery. The property consists of a residential dwelling and a former barn which has been converted to a storage space. The dwelling is a two-storey structure constructed with a concrete foundation and finished on the exterior with what appears to be a decorative plaster finish and a peaked roof with asphaltic shingles.

Interior assessments of the buildings were not completed as a part of this assessment.



Site

The portions of the subject site to the north of Old Montreal Road consist mainly of agricultural fields, some of which are planted with crops, and some of which are fallow. Wooded areas are present along Regional Road 174 and along the shallow bedrock ridge in the central and eastern portions of the north half of the site. A hydro corridor transects the northern portion of the property in an approximate east-west direction, along the former rail line. Wooded areas are also present on the northwestern portion of the property, north and south of the corridor and south of the portion of Cardinal Creek which transects the site in an approximate northeast-southwest direction. South of Old Montreal Road, the site consists of agricultural fields, with wooded portions adjacent to and south of the creek which runs in an east-west direction across the south portion of the site.

Site topography is generally controlled by bedrock topography, which generally slopes downward towards the Ottawa River to the north. Various localized rises and depressions are present, with agricultural drainage ditches being present along former lot lines, as well as the aforementioned creek. Site drainage consists primarily of infiltration, with some runoff to drainage ditches.

Potential Environmental Concerns

☐ Fuels and Chemical Storage

A derelict bulldozer was observed in an open field adjacent to the farmstead at 1291 Old Montreal Road. No staining was observed on the ground surface in the vicinity of the bulldozer. No fuels or chemicals or signs of staining, were observed on the exterior of the subject property at the time of the site assessment.

Interior site inspections were not conducted at the time of the site visit and should be inspected later, prior to the redevelopment of the various parcels of land.



■ Waste Management

Along with the aforementioned bulldozer, various debris was observed in the field adjacent to the farmstead at 1291 Old Montreal Road. Domestic waste from the farmstead, Word of Life Church, Laporte Flowers and Nursery and the various single family residential dwellings located along Old Montreal Road, is collected by the City of Ottawa. No other waste storage or management was observed on-site.

□ Polychlorinated Biphenyls (PCBs)

No concerns were identified with respect to PCBs on the exterior of the subject properties.

□ Private Services

Potable water wells and private septic systems may be present on the subject property. If encountered during the redevelopment of the site, they should be properly decommissioned with the wells being decommissioned by a licenced contractor.

5.3 Adjacent Properties

Land use adjacent to the subject site was as follows:

_	North -	Regional Road 174, followed by the Ottawa River;
	East -	Vacant/wooded land and residential followed by Ted Kelly Lane
		and Frank Kenny Road;
	South -	Agricultural and rural residential;
	West -	Cardinal Creek followed by residential, vacant and commercial
		land

The current use of the immediately adjacent properties and neighbouring properties is not considered to pose a concern to the subject site. Current land use adjacent to the subject property is illustrated on Drawing No. PE2392- 2 - Site Plan appended to this report.



6.0 ASSESSMENT AND RECOMMENDATIONS

6.1 Assessment

A Phase I - Environmental Site Assessment was carried out for the proposed Cardinal Creek Village subdivision lands, consisting of properties addressed at 1079 - 1422 Old Montreal Road, 1313-1325 Grand-Chêne Court, as well as additional land with no municipal address, in Lots 25, 26, and 27, Concession 1, in the former Township of Cumberland, now the City of Ottawa, Ontario. The purpose of this environmental assessment was to research the past and current use of the site and adjacent properties and identify any environmental concerns with the potential to have impacted the subject property.

The historical research indicated that the subject site has historically been vacant or used for agricultural purposes, with several residential dwellings along the south side of Old Montreal Road and the farmstead buildings at 1291 Old Montreal Road since at least since 1949.

Geotechnical investigations were conducted on the subject property (with the exception of the nursery property and the single-family residential properties) in 2009 and 2010. Based on the subsurface logs, no visual or olfactory evidence of contamination was observed.

Following the historical review, a site visit was conducted. The subject site is largely vacant, and is occupied by agricultural land or wooded. Single-family residential dwellings are present along both sides of Old Montreal Road and along Grand-Chêne Court. The Word of Life Church is present at 1123-1161 Old Montreal Road (north side) and Laporte Flowers and Nursery is present at 1211 Old Montreal Road. A residential dwelling is also located on the Laporte property, with a residential property further to the north and accessed via Regional Road 174. Farmstead buildings are present east of the nursery, at 1291 Old Montreal Road. Some debris, including a derelict bulldozer, was present in a field adjacent to the farmstead buildings. No significant concerns were identified with respect to the current use of the subject site or immediately adjacent properties.



It is our understanding that the existing farm buildings will be demolished prior to the redevelopment of the subject property, while many, if not all of the residential dwellings along Old Montreal Road, as well as the Word of Life Church and Laporte Flowers and Nursery, will be incorporated into the proposed Cardinal Creek Village subdivision. Based on the foregoing, and with consideration to the recommendations made below, it is our opinion that a Phase II - Environmental Site Assessment is not required for the property at this time.

6.2 Recommendations

Site Development

Any water materials encountered on the subject lands should be properly disposed during future redevelopment. Prior to the development of the Laporte nursery lands, which we understand may occur in the future, a more detailed assessment of this property should be carried out.

Water Wells

The house at 1291 Old Montreal Road is believed to be serviced by a private water well. The former residential dwelling located at the southwest corner of the Old Montreal Road and Frank Kenny intersection is considered to have been serviced with a private well. It is recommended that these water wells and any other potable wells encountered during redevelopment, be decommissioned by a licensed contractor, in accordance with Ontario Regulation 903 (Wells) at the time of future site development.

Private Sewage System

The house at 1291 Old Montreal Road and former dwelling mentioned above, are believed to be/have been serviced by private sewage systems. It is recommended that septic tanks associated with these systems and other private sewage systems encountered during redevelopment, be properly decommissioned.

Hazardous Building Materials

A designated substance survey (DSS), for any subject buildings that will be demolished as part of the redevelopment, will be required prior to demolition in accordance with the Occupational Health and Safety Act.



7.0 STATEMENT OF LIMITATIONS

This Phase I - Environmental Site Assessment report has been prepared in general accordance with the agreed scope-of-work and the requirements of CSA Z768-01. The conclusions presented herein are based on information gathered from a limited historical review and field inspection program. The findings of the Phase I - ESA are based on a review of readily available geological, historical and regulatory information and a cursory review made at the time of the field assessment. The historical research relies on information supplied by others, such as, local, provincial and federal agencies and was limited within the scope-of-work, time and budget of the project herein.

Should any conditions be encountered at the subject site and/or historical information that differ from our findings, we request that we be notified immediately in order to allow for a reassessment.

This report was prepared for the sole use of Taggart Group of Companies. Permission and notification from Taggart Group of Companies and Paterson will be required to release this report to any other party.

Paterson Group Inc.

Karyn Munch, P.Eng.

Kaup Munch:

Mark D'Arcy, P.Eng

M. S. D'ARCY M.

Report Distribution:

- ☐ Taggart Group of Companies (6 copies and 1 pdf)
- ☐ Paterson Group Inc. (1 copy)

APPENDIX

AERIAL PHOTOGRAPHS

FIGURE 1 - KEY PLAN

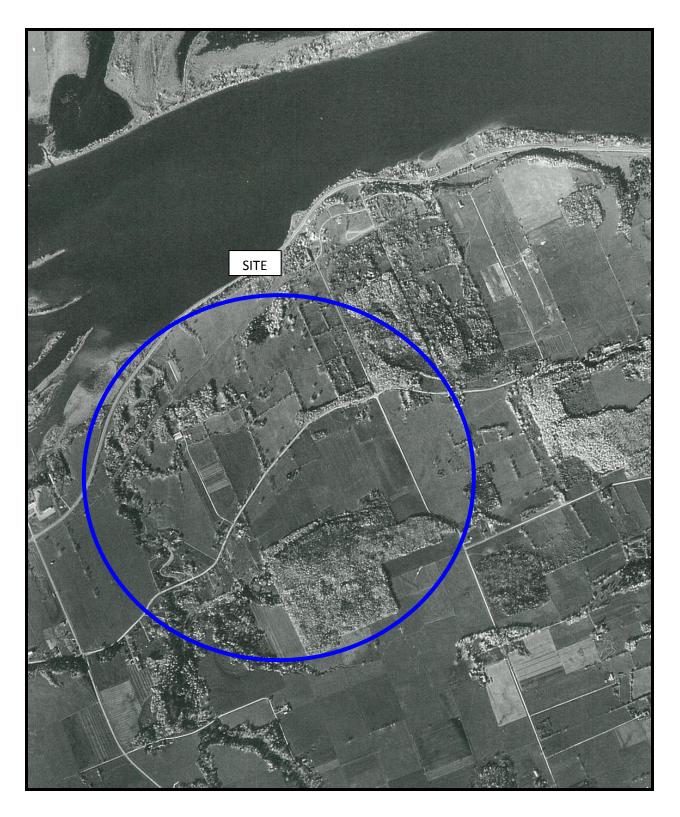
DRAWING NO. PE2392-2 - SITE PLAN



AERIAL PHOTOGRAPH 1949



AERIAL PHOTOGRAPH 1958



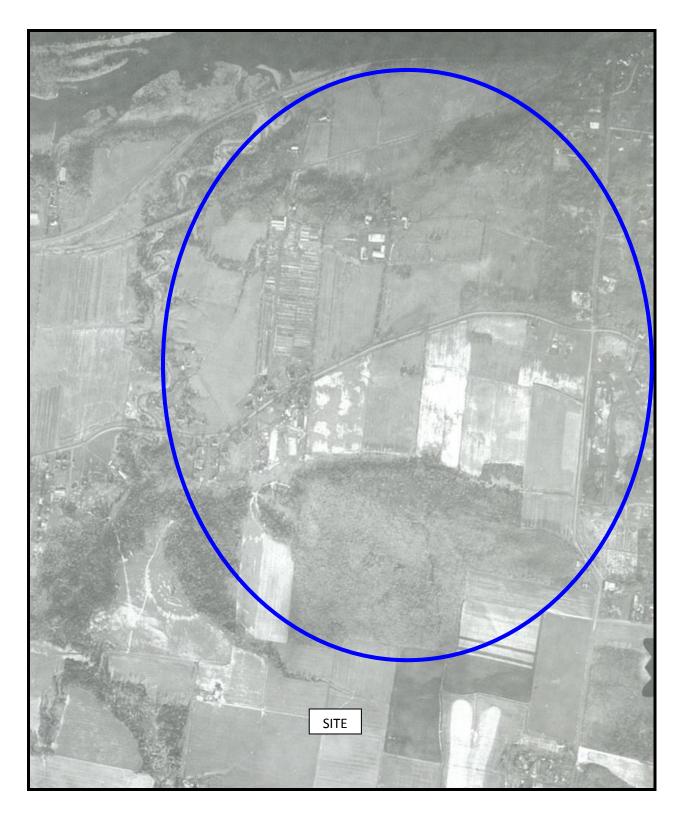
AERIAL PHOTOGRAPH 1970

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AERIAL PHOTOGRAPH 1979

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AERIAL PHOTOGRAPH 1988

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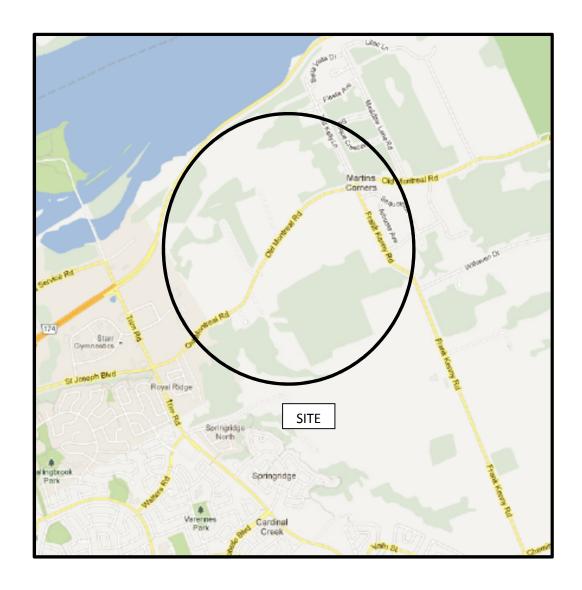


FIGURE 1 KEY PLAN

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