

Geotechnical  
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## Phase I - Environmental Site Assessment

Residential Property  
1003 Prince of Wales Drive  
Ottawa , Ontario

Prepared For

Archworks Design Management Inc.

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September 20, 2013

Report: PE3118-1

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## EXECUTIVE SUMMARY

### Assessment

A Phase I - Environmental Site Assessment was carried out for the residential property located at 1003 Prince of Wales, in 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 property was vacant land prior to being developed with the current residential building between 1950 and 1953. The neighbouring properties were also originally vacant or used for agricultural purposes prior to being developed with their current structures. No concerns were noted with respect to the historical use of the subject or neighbouring properties.

Following the historical review, a site visit was conducted. No concerns were noted with the current use of the subject site. The subject property has remained largely unchanged since the development of the current structure. The neighbouring properties to the north and west are part of the Experimental Farm and have retained their agricultural purpose. To the south are residential properties and to the east is the Rideau Canal. No concerns were noted with respect to the current use of the neighbouring properties.

Based on the results of the assessment, **it is our opinion that a Phase II - Environmental Site Assessment will not be required for the property at this time.**

### Recommendations

Based on the approximate date of construction of the residential structure (1950 to 1953), asbestos containing materials (ACMs) are potentially present in this building. The potential ACMs include the vinyl floor tiles, drywall joint compound, linoleum, ceiling tiles, stucco and plaster finishes. These materials were noted to be in good condition at the time of our inspection and do not represent an immediate concern.

Lead-based paint may be present beneath more recent non-lead based paint products on any remaining original surfaces in the building. It is recommended that original paint be tested for lead content prior to its disturbance. Major work involving lead based paint or other lead containing products must be done in accordance with Ontario Regulation 843, under the Occupational Health and Safety Act.

If the subject structure is to be demolished as part of the future redevelopment of the site, it is recommended that a Designated Substance Survey be conducted. The aforementioned building materials and painted surfaces would be tested for asbestos and lead as part of this survey.

It is our understanding that the site is going to be redeveloped, at which time it will be connected to the municipal water service. During redevelopment of the site, the on-site water well should be decommissioned in accordance with Ontario Regulation 903.

## 1.0 INTRODUCTION

At the request of Archworks Design Management Inc., Paterson Group (Paterson) conducted a Phase I - Environmental Site Assessment (ESA) of the residential property located at 1003 Prince of Wales Drive, in 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

Address: 1003 Prince of Wales Drive, Ottawa, Ontario.

Location: The site is located on the east side of Prince of Wales Drive, north of the intersection with Heron Road, in the City of Ottawa, Ontario. Refer to Figure 1 - Key Plan in the Appendix for the site location.

Latitude and Longitude: 45° 22' 47" N, 75° 42' 12" W

### Site Description:

Configuration: Rectangular.

Area: 2,176 square meters (approximate).

Current Use: The subject site is occupied by one (1) residential building which has two (2) storeys and a basement. The remainder of the site is covered by a mixture of asphalt, grass, brush and trees.

Services: The building has a private well and sewage system. The subject site is located in a municipally serviced neighbourhood.

### **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 general 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**

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.

#### **Federal Records**

- 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.

#### **Provincial Records**

- MOE document titled "Waste Disposal Site Inventory in Ontario".
- MOE Brownfields Environmental Site Registry.
- Office of Technical Standards and Safety Authority, Fuels Safety Branch.

#### **Municipal Records**

- City of Ottawa document entitled "Old Landfill Management Strategy; Phase 1 - Identification of Sites, City of Ottawa, Ontario"; finalised October 2004.
- Intera Technologies Limited Report "Mapping and Assessment of Former Industrial Sites, City of Ottawa".

#### **Local Information Sources**

- Previous Engineering Reports.
- Personal Interviews.

## 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 September 20, 2013, by personnel from the Environmental Division.

As part of the field assessment, the 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:

- |      |  |
|------|--|
| 1945 | The subject site appears to be vacant while the adjacent property to the south is occupied by a residential dwelling. Surrounding lands appear to be vacant or used for agricultural purposes. |
| 1953 | The subject site appears to be occupied by a single structure. The surrounding lands appear to be vacant or used for agricultural purposes.  |
| 1965 | (City of Ottawa website) A single structure is visible on the subject site. Neighbouring properties to the northeast and south can be seen undergoing development.                             |
| 1970 | The subject site is obscured by trees. Carleton University and the Church of Jesus Christ of Latter-Day Saints can be seen to the northeast and south, respectively.                           |
| 1994 | The subject site is obscured by trees. A small residential development is visible on the adjacent property to the south.   |
| 2002 | There are no significant changes to the subject or neighbouring properties.  |
| 2011 | (City of Ottawa website) The subject and neighbouring properties are depicted as they appear today.  |

Laser copies of selected aerial photographs listed above are included in the Appendix.

## **National Archives**

Fire Insurance Plans (FIPs) from 1957 were reviewed for the area of the subject property. The FIPs from 1957 do not cover the subject site but indicate that there were residences and the Green Valley Motor Court just south of the subject site. No concerns were identified during the review of the FIPs.

City directories were reviewed as part of the assessment. The subject site has always been used for residential purposes since development. No concerns were identified in the review of City directories.

## **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 limestone of the Bobcaygeon Formation. Based on the maps, the thickness of overburden ranges from 15 to 25 m of erosional terraces.

## **PCB Inventory**

A search of national PCB waste storage sites was conducted. A PCB site is located opposite the Rideau Canal in Carleton University's maintenance building. Due to the separation distance and orientation to the subject site it is not considered to be a concern.

## **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 waste disposal sites were listed in the database for the subject site or neighbouring properties within a 1 km radius.

A search of the MOE Brownfields environmental site registry was conducted electronically on September 16, 2013 for properties in the vicinity of the subject site. The site itself was not listed in the MOE site registry. No records of site condition were found within 500 m of the subject site.

## **Technical Standards and Safety Authority (TSSA)**

The Technical Standards and Safety Authority (TSSA), Fuels Safety Branch, was contacted by email on September 16, 2013. The response from the TSSA indicated that there are no records for underground/aboveground tanks, historical spills and/or other incidents/infractions for the subject site or neighbouring properties.

The property located at 1125 Colonel By Drive (Carleton University) is reported to have three (3) active underground storage tanks (UST) and eight (8) underground fuel oil tanks. Based on the distance from the subject property, the presence of these tanks does not pose a significant environmental concern to the subject site.

## **City of Ottawa Landfill Document**

The document entitled "Old Landfill Management Strategy, Phase I - Identification of Sites, City of Ottawa", was reviewed. No former or current landfill sites are located within a 1 km radius of the subject site.

## **Former Industrial Sites**

The report titled "Mapping and Assessment of Former Industrial Sites, City of Ottawa" prepared by Intera Technologies Limited was reviewed. The Intera report indicated that there were no former industrial sites within 500 m of the subject property.

## **Other 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.

## **Personal Interviews**

Mr. Jonathan Hobin represented the property owner, Mr. Barry Hobin, during the site visit. Mr. Jonathan Hobin indicated that the property has been owned by his family for the last four (4) years. During this time, work has been done to fix the roof and the well water was tested and cleared as potable. Mr. Hobin noted that his only environmental concern with the property was associated with the potential for mould. No evidence of mould was observed at the time of inspection. The building is heated with natural gas and was previously heated by an oil furnace. The aboveground storage tank (AST) which supplied the furnace with fuel has been removed from the basement.

## 5.2 Exterior Assessment

### Buildings

The subject site is occupied by a two (2) storey residential building. The exterior of the building is finished with stucco and has a sloped shingled roof. A wooden garage and small green house are located on the southern side of the property.

### Site

The subject building occupies the centre of the site with an asphalt driveway in the front and a grassed area in the back. Site drainage consists of infiltration. The site topography and regional topography slope downward to the east towards the Rideau Canal.

### Potential Environmental Concerns

#### Fuels and Chemical Storage

No above ground storage tanks (ASTs) or signs of underground storage tanks (USTs) were observed on the exterior of the subject property at the time of the investigation. No hazardous chemicals, spills or stains were observed at the time of the investigation.

#### Waste Management

Solid, non-hazardous waste and recyclables are stored and collected curbside on a weekly basis by the city. No concerns were identified with respect to waste management practices at the subject site.

#### Polychlorinated Biphenyls (PCBs)

No sources of PCBs were observed on the exterior of the subject site, however there is a pole mounted transformer adjacent to the northwest corner of the property. The transformer appears clean and new with no visible stains or stressed vegetation surrounding the pole. No concerns regarding PCBs were identified at the time of the site visit.

## 5.3 Interior Assessment

A general description of the interior of the subject buildings are as follows:

- The floors are primarily a mixture of hardwood, linoleum, ceramic tiles, vinyl tiles (225 mm x 225 mm) and concrete.
- The walls consisted mainly of plaster and 1950s style drywall.
- The ceilings consisted of a mixture of drywall, plaster and stick-on tiles.
- Lighting throughout the building was provided by a mixture of incandescent and fluorescent light bulbs.

### Potentially Hazardous Building Products

#### **Asbestos Containing Materials (ACMs)**

Based on the date of construction of the building (1950 to 1953), asbestos containing materials may have been used during construction and may still be present within the structure. Potential ACMs observed are the vinyl floor tiles, drywall joint compound, linoleum, ceiling tiles, stucco and plaster finishes. The above noted potential ACMs were noted to be in good condition at the time of the assessment.

#### **Lead-Based Paint**

Based on the date of construction of the building (1950 to 1953), lead-based paint may be present beneath more recent paints, on any original or older painted surfaces. Painted surfaces were observed to be in good condition at the time of the site inspection.

#### **PCBs**

There were no concerns with respect to PCBs identified at the time of the site inspection.

#### **Urea Formaldehyde Foam Insulation (UFFI)**

UFFI was not observed during the site investigation. However, wall cavities were not inspected for insulation type. Exposed fibreglass insulation was observed in a closet on the second floor.

## **Other Potential Environmental Concerns**

### **Fuels and Chemical Storage**

No vent and fill pipes or signs indicating the presence of an underground storage tank was observed on the interior of the subject building. A painted outline of an aboveground storage tank was observed near suspected vent and fill pipes protruding from the basement's southern concrete foundation wall. No unusual visual or olfactory observations were noted at the time of our site visit. The presence of this former aboveground furnace oil storage tank does not pose a concern to the subject property.

Chemical storage on the subject site was limited to commercially available household cleaning products and some jerry cans in the garage. These products were stored properly and no concerns were noted regarding these products.

### **Wastewater Discharges**

The liquid discharged from the subject building includes the washwater and sewage from the building. The subject site discharges into a private sewage system. No sump pit was observed at the time of the inspection. No concerns were identified with respect to wastewater discharges at the subject site.

### **Potable Water Well**

Paterson were informed that the residence on site is serviced with an on-site water well. The well appears drilled and is located on the south side of the residence next to the garage.

### **Ozone Depleting Substances (ODSs)**

A potential source of ODSs observed on site was the refrigerator. This appliance should be regularly serviced by a certified contractor.

## 5.4 Adjacent Properties

Land use adjacent to the subject site was as follows:

- North - Vacant land that is part of the Experimental Farm;
- South - Residential buildings followed by the Church of Jesus Christ of Latter-Day Saints;
- East - Rideau Canal and Rideau River;
- West - Prince of Wales Drive followed by the Experimental Farm.

The environmental impact from the current use of the neighbouring properties upon the subject site is considered to be low. Land use adjacent to the subject site is illustrated on Drawing No. PE3118-1 - Site Plan in the Appendix.

## 6.0 ASSESSMENT AND RECOMMENDATIONS

### 6.1 Assessment

A Phase I - Environmental Site Assessment was carried out for the residential property located at 1003 Prince of Wales, in 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 property was vacant land prior to being developed with the current residential building between 1950 and 1953. The neighbouring properties were also originally vacant or used for agricultural purposes prior to being developed with their current structures. No concerns were noted with respect to the historical use of the subject or neighbouring properties.

Following the historical review, a site visit was conducted. No concerns were noted with the current use of the subject site. The subject property has remained largely unchanged since the development of the current structure. The neighbouring properties to the north and west are part of the Experimental Farm and have retained their agricultural purpose. To the south are residential properties and to the east is the Rideau Canal. No concerns were noted with respect to the current use of the neighbouring properties.

Based on the results of the assessment, **it is our opinion that a Phase II - Environmental Site Assessment will not be required for the property at this time.**

### 6.2 Recommendations

Based on the approximate date of construction of the residential structure (1950 to 1953), asbestos containing materials (ACMs) are potentially present in this building. The potential ACMs include the vinyl floor tiles, drywall joint compound, linoleum, ceiling tiles, stucco and plaster finishes. These materials were noted to be in good condition at the time of our inspection and do not represent an immediate concern.



Lead-based paint may be present beneath more recent non-lead based paint products on any remaining original surfaces in the building. It is recommended that original paint be tested for lead content prior to its disturbance. Major work involving lead based paint or other lead containing products must be done in accordance with Ontario Regulation 843, under the Occupational Health and Safety Act.

If the subject structure is to be demolished as part of the future redevelopment of the site, it is recommended that a Designated Substance Survey be conducted. The aforementioned building materials and painted surfaces would be tested for asbestos and lead as part of this survey.

It is our understanding that the site is going to be redeveloped, at which time it will be connected to the municipal water service. During redevelopment of the site, the on-site water well should be decommissioned in accordance with Ontario Regulation 903.

## 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 Archworks Design Management Inc. Permission and notification from Archworks Design Management Inc. and this firm will be required to release this report to any other party.

### Paterson Group Inc.



Xavier Redhead, B.Eng.



Mark S. D'Arcy, P.Eng.



### Report Distribution:

- Archworks Design Management Inc. (2 copies and 1 PDF copy)
- Paterson Group Inc. (1 copy)

# **APPENDIX**

**AERIAL PHOTOGRAPHS**

**FIGURE 1 - KEY PLAN**

**DRAWING NO. PE3118-1 - SITE PLAN**



AERIAL PHOTOGRAPH  
1945



AERIAL PHOTOGRAPH  
1953



AERIAL PHOTOGRAPH  
1970



AERIAL PHOTOGRAPH  
1994



AERIAL PHOTOGRAPH  
2002



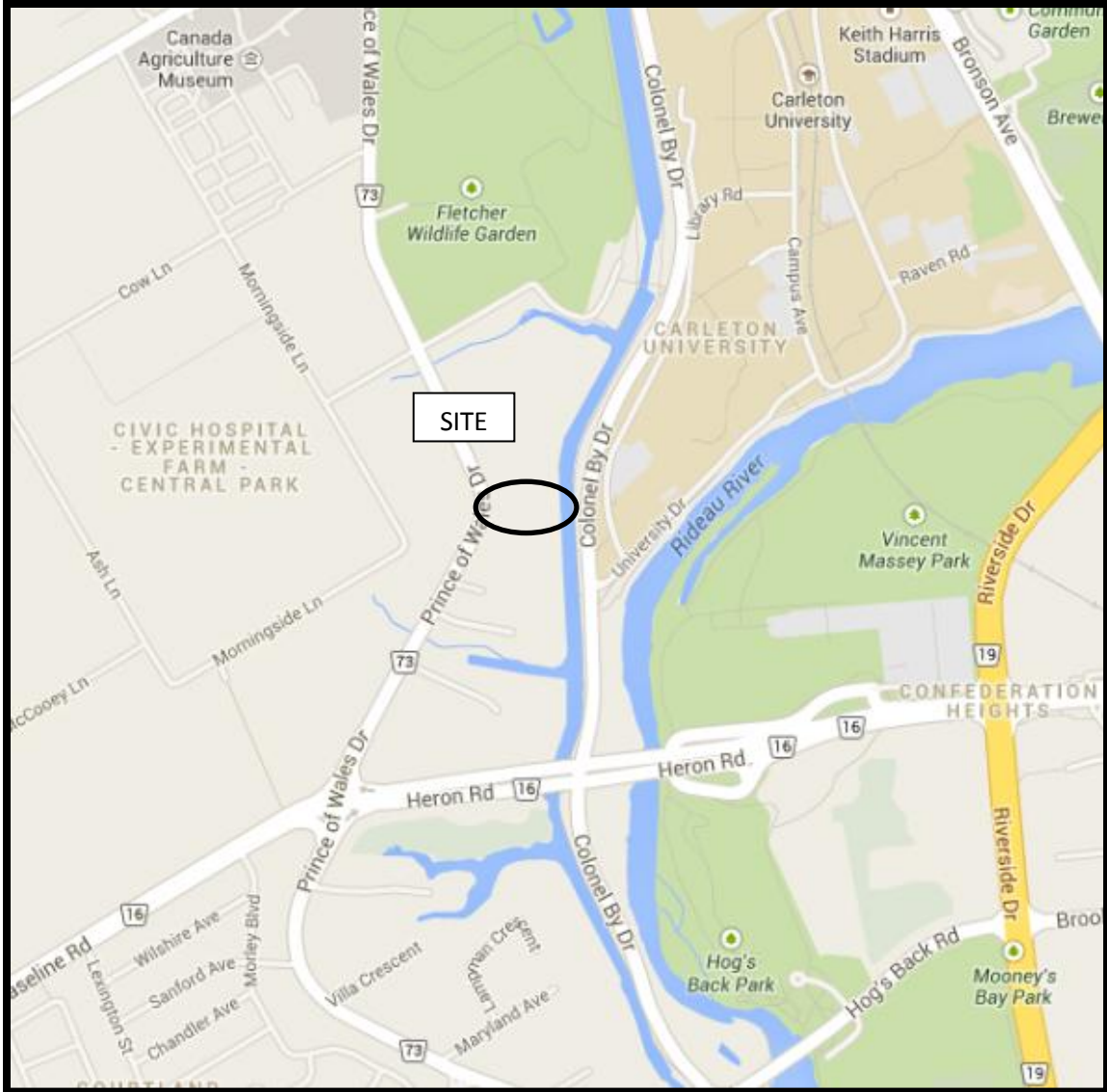
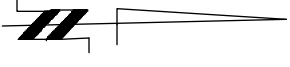


FIGURE 1  
KEY PLAN



#711 HERON ROAD  
VACANT

#930 CARLING AVENUE  
VACANT

● HYDRO  
POLE-MOUNTED  
TRANSFORMER

#930 CARLING AVENUE  
EXPERIMENTAL FARM

PRINCE OF WALES DRIVE

LANDSCAPED

ASPHALTIC  
CONCRETE  
DRIVEWAY

LANDSCAPED

#1003  
PRINCE OF  
WALES DRIVE

RETAINING WALL

2-STOREY  
WOOD DECK

SEPTIC  
TANK

RETAINING WALL

BRUSH AND TREED

⊙ POTABLE WELL

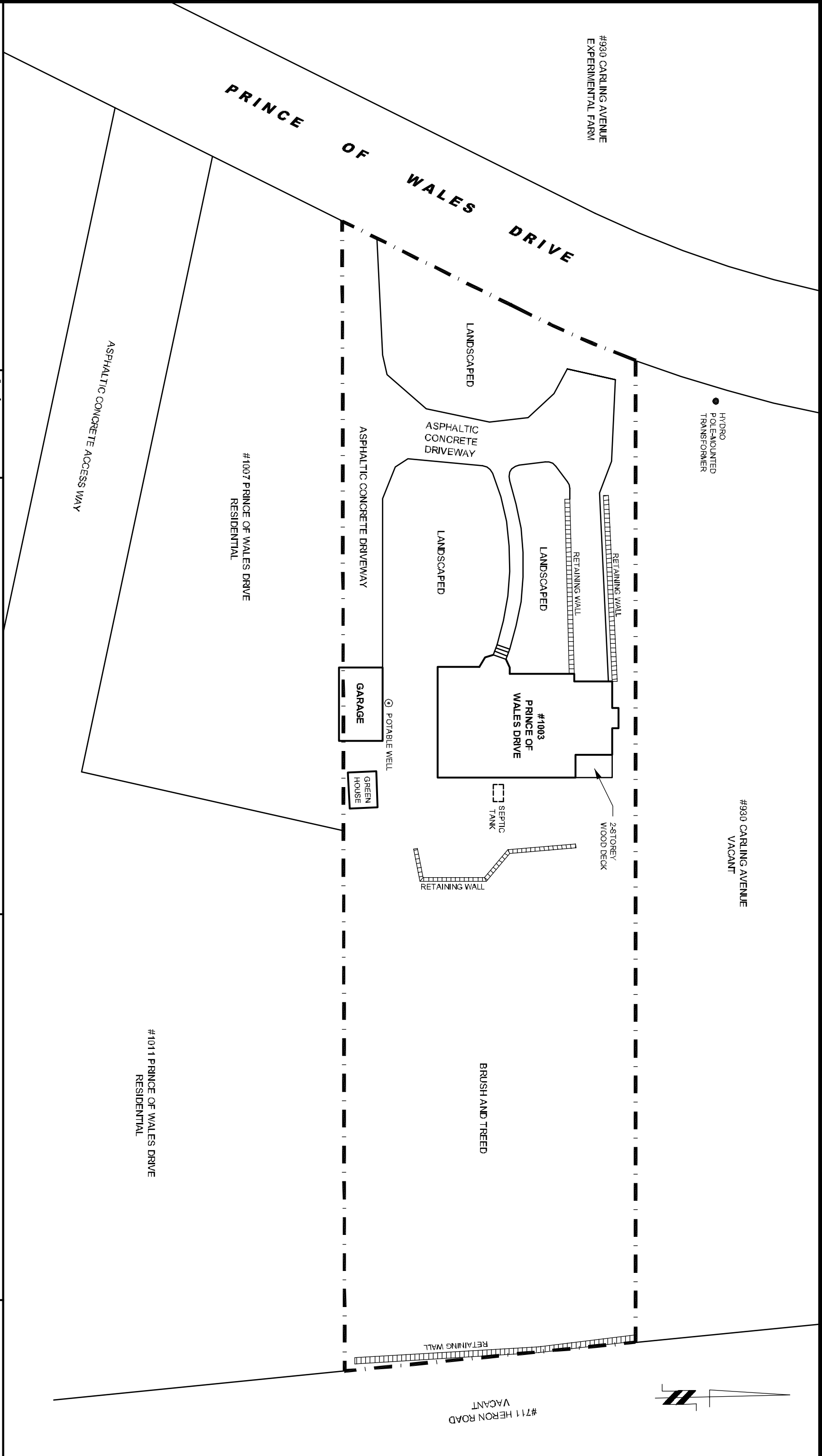
GARAGE

GREEN  
HOUSE

#1007 PRINCE OF WALES DRIVE  
RESIDENTIAL

#1011 PRINCE OF WALES DRIVE  
RESIDENTIAL

ASPHALTIC CONCRETE ACCESS WAY



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

Scale:	1:300
Des.:	XR
Dwn:	MPG
Chkd:	MSD

ARCHWORKS DESIGN MANAGEMENT INC.  
PHASE I - ENVIRONMENTAL SITE ASSESSMENT  
1003 PRINCE OF WALES DRIVE  
OTTAWA, ONTARIO

# SITE PLAN

Dwg. No.	<b>PE3118-1</b>
Report No.:	PE3118-1
Date:	09/2013