FINAL MODIFIED PHASE I ENVIRONMENTAL SITE ASSESSMENT AND HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSETS
PRINCE EDWARD ISLAND NATIONAL PARK
CAVENDISH, QUEENS COUNTY, PEI

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA FOR PARKS CANADA

JANUARY 13, 2011

PROJECT NO. 121711090 TASK 300.200 – FILE NO. 91801

GLOSSARY OF TERMS

ACMs	Asbestos Containing Materials
AST	Aboveground Storage Tank
C & D	Construction and Demolition
CCME	Canadian Council of Ministers of the Environment
CEPA	Canadian Environmental Protection Act
CSA	Canadian Standards Association
CSRS	Canadian Spatial Reference System
CWS	Canada Wide Standards
EMFs	Electromagnetic Fields
ESA	Environmental Site Assessment
FD	Field Duplicate
LD	Laboratory Duplicate
m bgs	Metres Below Ground Surface
NAD83	North American Datum of 1983
ODSs	Ozone Depleting Substances
PCB	Polychlorinated Biphenyl
PEIDEEF	Prince Edward Island Department of Environment, Energy and Forestry
PEIPT	Prince Edward Island Provincial Treasury
PHC	Petroleum Hydrocarbons
PID	Property Identification
ppm	Parts Per Million
PWGSC	Public Works and Government Services Canada
QA/QC	Quality Assurance / Quality Control
RPD	Relative Percent Difference
SQG	Soil Quality Guideline
SQG_E	Soil Quality Guidelines for Environmental Health
SQG_{HH}	Human Health Soil Quality Guideline
SQG_{PW}	Soil Quality Guidelines for a Potable Site
TPH	Total Petroleum Hydrocarbons
UFFI	Urea Formaldehyde Foam Insulation
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound

EXECUTIVE SUMMARY

Between August 30, 2010 and September 24, 2010, Stantec Consulting Ltd. (Stantec) conducted a Modified Phase I Environmental Site Assessment (ESA) and Hazardous Materials (Hazmat) Survey of fourteen (14) Parks Canada Assets located in the Prince Edward Island National Park property in Cavendish, Queens County, Prince Edward Island. The purpose of the assessment was to identify and characterize potentially hazardous materials on the structures scheduled for demolition and decommissioning.

Based on the information gathered and on observations made during this investigation, the modified Phase I ESA revealed evidence of potential hazardous materials associated with the identified structures. A hazardous material sampling program was conducted to confirm the findings of the modified Phase I ESA, where practical. The findings of the hazardous material survey are presented in Table 1.

Table 1. Summary Table of Findings

Asset No.	Building Type	Lead Paint			Asbestos	
		Surface Area (m^2) Non-detectable	Surface Area (m^2) content <5,000 mg/kg	Surface Area (m^2) leachate >5 mg/L	ACMs	Area (m^2)
Cavendish Grove						
Canteen	-	100	1	-	Tar Paper - roof	190
Maintenance Building	-	10	65	25	Tar – Shed roof	20
					Window Caulk - shed	<1
Art Barn	-	25	180	170	Asphalt Shingle and Adhering Tar	140
Grahams Lane						
404	Visitor Information Centre	-	465	175	-	-
112	Staff House	-	15	-	Siding	130
					Window Caulk	<1
Cavendish Campground						
8087	Kitchen Shelter	-	90	35	-	-
Cavendish East Day Use						
8106	Washroom and Kitchen Shelter	-	70	15	-	-

Asset No.	Building Type	Lead Paint			Asbestos	
		Surface Area (m^2) Non-detectable	Surface Area (m^2) content <5,000 mg/kg	Surface Area (m^2) leachate >5 mg/L	ACMs	Area (m^2)
Route No. 13						
118	Garage	50	-	125	-	-
108	Staff House	-	215	285	Tile Adhesive	15
117	Garage	-	120	5	Window Caulk	<1
106	Staff House	105	385	-	Window Caulk	<1
					Kitchen floor underlay	15
Cavendish Compound						
303	Trades Building	-	700	-	-	-
310	Paint Building	-	75	-	-	-
307	Industrial Storage Building	-	-	75	Tar Paper	450
					Asphalt Shingle	150

Disposal Options

- Paint with no lead detected can be disposed of at a provincially licensed construction and demolition (C&D) disposal facility. The PEI Department of Environment, Energy and Forestry (PEIDEEF) permits materials with a total lead concentration below 5,000 mg/kg to be disposed of at East Prince Waste Management Facility (EPWM) without leachate testing. Waste materials containing lead in concentrations in excess of 5,000 mg/kg must undergo leachate testing. If the leachate contains lead in excess of 5 mg/L those materials must be disposed of outside of PEI. Demolition work should not involve sanding, scraping or otherwise disturbing painted surfaces in a manner to create lead dust. Any activities that may create lead dust should be carried out under controlled conditions with appropriate protection for workers and the environment.

Asbestos Containing Materials (ACMs)

- For the purposes of the current Modified Phase I ESA and Hazmat Survey the asbestos results that indicate trace levels (i.e., < 1%) are considered ACMs due to the inhomogeneous nature of the asbestos distribution in the materials sampled.

- Confirmed ACMs, and all visually similar materials throughout the buildings, should be removed in accordance with Part 49-Asbestos Regulations of the Occupational Health & Safety Act Regulations, R.S.P.E.I. 1988, Cap 0-1.

- ACMs should be removed by a certified contractor and disposed of in a provincially approved manner.

- Asbestos may also be present in the other building materials not accessible during the survey. If potential ACMs are identified they should be sampled and, if found to contain asbestos, should be removed in accordance with the regulations noted above.

Additional Environmental Concerns

The following additional environmental concerns were identified, including:

- Existing heating fuel ASTs associated with the Staff Houses on Route No. 13 (Asset Nos. 108 and 106). The existing heating fuel ASTs should be checked for leaks or any sign of spill or stained areas beneath the tank or associated infrastructure. Decommissioning and disposal of all fuel oil ASTs must be completed according to applicable Provincial and Federal Regulations;

- Potential PCB and mercury containing equipment (i.e., thermostats, light bulbs and light ballasts) were observed in several of the Assets during the site visits. Potential PCB and mercury containing equipment should be confirmed and disposed of according to Federal and Provincial Regulations;

- Potential metal impacts in the soil surrounding the site structures as a result of the identification of lead based paints on the individual building assets;

- If ODSs are identified during the decommissioning activities, they should be dealt with in accordance with the Federal Halocarbon Regulations; and

- Evidence of moisture damage and mold was observed in the Asset No.112 (i.e., Sheppard Cottage), Asset No. 108 (i.e., Staff Housing) and the Art Barn at the time of the site visit.

- For due diligence it is recommended that the two existing drilled wells for the Graham's Lane site, and the one used for the Cavendish East Day Use Facility be decommissioned. Please note that based on information provided by Parks personnel Stantec's understanding is that the wells are scheduled to be decommissioned.

Please note that the Hazmat survey was specific to asbestos and lead based paint. Based on the age of the buildings, there is potential for other hazardous building materials (i.e., mercury, UFFI, etc.); however, none were identified at the time of the assessment. In the event that other hazardous building materials are identified during decommissioning and demolition activities, that were not addressed in this assessment, the contractor should test (if applicable) and take proper precautions with regard to disposal.

During decommissioning/demolition activities of the site structures, the contractor should be aware of the potential for exposure to mold and must ensure that proper handling methodology are used for due diligence and safety purposes.

The statements made in this Executive Summary are subject to the same limitations included in Section 5.0 (Closure), and are to be read in conjunction with the remainder of this report.

TABLE OF CONTENTS

List of Tables **Page No.**

List of Appendices

1.0 INTRODUCTION

Stantec Consulting Ltd. (Stantec) was commissioned by Public Works and Government Services Canada (PWGSC), on behalf of Parks Canada, to complete a Modified Phase I ESA and Hazardous Materials (Hazmat) Survey for the structures scheduled for demolition within Cavendish, Prince Edward Island National Park, Queens County, Prince Edward Island (Drawing No. 1, **Appendix A**).

1.1 Objectives

This work had the following general objectives:

- To conduct a Modified Phase I ESA to identify and document potential sources of contamination in relation to site structures to be decommissioned and demolished;

- Complete a Hazmat Survey of the buildings to be decommissioned/demolished in order to complete the following:

    - Identify, assess and quantify the hazardous materials that are associated with the identified structures; and

    - Provide the necessary information required to develop a decommissioning and demolition plan for the identified structures.

1.2 Assessment Standards

1.2.1 Asbestos

The Province of PEI regulates the use and disposal of asbestos containing materials through legislation, codes and guidelines. In general, asbestos containing materials with asbestos content over 1% must be managed appropriately in accordance with Part 49-Asbestos Regulations of the Occupational Health and Safety Regulations RSPEI 1988, Cap 0-1.

1.2.2 Paint

In 1976, the lead content in interior paint was limited to 0.5% by weight under the federal Hazardous Products Act. Health Canada has established home renovation guidelines of 1 mg/cm^2 for children and pregnant women, and 5 mg/cm^2 as constituting heavily leaded paint.

All consumer paints produced and imported into Canada are virtually lead free as of 1991. In 2005, the above guidelines were replaced by the Surface Coating Materials Regulations (published in the Canada Gazette Part II, Vol. 139, No. 9 (SOR/2009-109) on April 19, 2005). In the Surface Coating Materials Regulations, production of surface coating products was limited when dry to 0.06% (600 mg/kg) lead.

These guidelines apply to the production of all surface coating materials including paint; however, they do not apply to old paint (manufactured prior to April 19, 2005).

The USEPA have identified lead levels in paint chips exceeding 5,000 mg/kg or 1 mg/cm^2 as indicative of "lead-based paint" and recommends precautions for sensitive individuals (such as children and pregnant women) during renovations or if the paint is peeling or in otherwise poor condition. Health Canada also recommends similar precautions, but does not refer to a specific lead concentration to define lead-based paint.

PEIDEEF has established guidelines that restrict certain materials from municipal landfills and C&D waste disposal sites. The PEIDEEF suggests that materials with a total lead concentration exceeding 5,000 mg/kg undergo leachate testing to determine whether the leachate exceeds the Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations limit of 5 mg/L for lead. The tested material may consist of paint and substrate if the paint is in good condition, or paint chips only, if the paint is peeling or in poor condition.

Materials with a total lead concentration below 5,000 mg/kg do not require leachate testing, and may be disposed of at an approved provincial disposal site. Materials with a total lead concentration exceeding 5,000 mg/kg, but under the leachate regulatory limit of 5 mg/L can be disposed of at an approved provincial disposal site.

If the material has a lead leachate concentration above 5 mg/L and it is to be sent for disposal, it is considered "lead leachate toxic" and must be disposed of at an approved facility. There are currently no facilities in Prince Edward Island capable of accepting lead leachate toxic materials and out-of-province disposal is required. Lead leachate toxic paint that becomes separated from its substrate (*i.e.* loose chips and flaking) is considered a "leachable toxic" dangerous good.

2.0 MODIFIED PHASE I ENVIRONMENTAL SITE ASSESSMENT

2.1 Scope of Work

The purpose of the Phase I ESA was to identify any actual or potential environmental contaminants associated with the subject property which may exist as a result of current or past activities. The Modified Phase I ESA consisted of the following:

- records review;
- interviews with personnel associated with the subject properties;
- a site visit; and
- an evaluation of information and preparation of the report provided herein.

2.2 Methodology

2.2.1 Records Review

The applicable search distance for the records review included the subject property only or, if applicable, where the potential for environmental contamination to impact the subject property was apparent (*e.g.*, petroleum product storage in the immediate area). A list of records reviewed is provided in **Appendix B**.

2.2.2 Previous Environmental Reports

The following environmental study was used to assist in the modified Phase I ESA and Hazmat:

- Jacques Whitford Limited (File No. 91842) Final Phase I/II ESA Parks Canada - Cavendish Compound, Queens County, Prince Edward Island - PWGSC, March 2010.

2.2.3 Interviews

Mr. Paul Ayles, acting Environmental Protection Officer and Geomatics Technician (Charlottetown, PE) was interviewed by Ms. Danya MacGillivray of Stantec. Results of the interview are provided in **Appendix B**. Information obtained from the interview is discussed in the relevant sections of the report.

2.2.4 Site Visit

The site visit was completed on September 1 and 9, 2010 by Stantec personnel. The subject buildings and readily visible portions of the property around the buildings were examined for the presence of actual or potential environmental contamination. Weather conditions at the time of the site visits were sunny and humid. It should be noted that only a limited area (kitchen) of the interior of Asset No. 112 (Sheppard Cottage) was accessed due to safety concerns. However, the majority of the interior (as seen from the kitchen entrance) appeared to be wood panelling without paint and representative asbestos samples were collected from the kitchen area.

2.3 Site Description

Cavendish area is owned by Parks Canada and is located in the Prince Edward Island National Park. Established in 1937, the Prince Edward Island National Park is located along a 40 km stretch of the North Shore of PEI in Queens County and features sand dunes, sandstone cliffs, beaches, barrier islands, wetlands and forests, and plays host to a variety of plants, animals and many archeological finds. The Park also features several historical sites and cultural resources. The assets scheduled for decommissioning and demolition from the Parks Canada facilities at Cavendish include:

- three former staff housing buildings (Asset Nos. 112, 108 and 106);
- maintenance and storage garages (Asset Nos. 117,118, 307, 310, 303, Art Barn and Maintenance Building);
- kitchen/washroom facilities (Asset Nos. 8087 and 8106);
- a canteen (Asset No. Canteen); and
- a visitor's information centre (Asset No. 404).

Refer to Drawing Nos. 1 and 2 **Appendix A** for the site location plan and site plan, respectively.

2.3.1 Subject Property Description

Cavendish Grove

The three assets located in Cavendish Grove are located north of Route No. 6 in Cavendish. Refer to Drawing No. 3, **Appendix A** for locations and photos of the Canteen, Maintenance Building and Art Barn. Note that the shed located immediately adjacent to the Maintenance Building was also sampled during the site visit as the Parks Canada project manager indicated that this building was scheduled to be decommissioned and demolished as well. The site investigation was carried out in an approximate two portion of the twenty-seven acres parcel identified as PID No. 233122. The Cavendish Grove site is located in a predominantly mixed seasonal commercial (i.e., tourist operations), agricultural and residential area in the Community of Cavendish. The site is surrounded by regenerating forest to the east, agricultural land use to the west, north, and south east, and with a restaurant and retail building to the south (i.e., north side of Route No. 6). The site is currently owned by the Government of Canada and occupied by Parks Canada, which maintains seasonal walking/cross country skiing trails in the area. It should be noted that the Cavendish Grove property used to be occupied by the season tourist operation known as Rainbow Valley that operated as a family event park.

Grahams Lane

The assets associated with Graham's Lane in Cavendish are identified as Parcel Nos. 545848 and 231829 and consist of 31.4 acres. Refer to Drawing No. 3, **Appendix A** for locations and photos of the Asset No. 404 - Visitor's Information Centre (VIC) and Asset No. 112 - Sheppard Cottage. The site investigation was carried out for the buildings located on each property. The Grahams Lane site is located in a predominantly seasonal commercial (i.e., tourist operations) agricultural and residential area in the Community of Cavendish. The site is surrounded by regenerating forest to the north and east, and residential cottages and/or commercial cottages to the south and west (i.e., across Grahams Lane). Agricultural properties are located to the southwest and northwest of the properties. The sites are currently owned by the Government of Canada and occupied by Parks Canada.

Cavendish Campground

The asset associated with the Cavendish Campground is located north of Grahams Lane in Cavendish. The Cavendish Campground consists of an area of approximately sixty acres of the Prince Edward

Island National Park property identified as Parcel No. 232405. Refer to Drawing No. 3, **Appendix A** for the location and photo of the Asset No. 8087 - Kitchen Shelter. The Cavendish Campground site is located along the north shore of PEI and is surrounded by regenerating forest to the west, south and east with the Gulf of St Lawrence bordering the property to the north. The site is currently owned by the Government of Canada and occupied by Parks Canada, which operates the area as a campground.

Cavendish East Day Use Facility

The asset associated with the Cavendish East Day Use Facility is located on the north shore of PEI along the Gulf Shore Parkway at the intersection of Route No. 13 in Cavendish. The site investigation was carried out on an approximately 0.5 acre portion of the Prince Edward Island National Park property identified as Parcel No. 232405. Refer to Drawing No. 3, **Appendix A** for the location and photo of the Asset No. 8106 - Kitchen Shelter/Washroom Facility. The Cavendish East Day Use Facility is located in a predominantly recreational area in the Community of Cavendish. The site is surrounded by beach to the north and undeveloped recreational land and regenerating forest to the west, south and east. The site is currently owned by the Government of Canada and occupied by Parks Canada, which operates the area as a Day Use Facility.

Route 13

The assets located west of Route No. 13 in Cavendish include two staff houses and associated garages. The site investigation was carried out on an approximate 0.5 acre portion of the Prince Edward Island National Park property identified as Parcel No. 232405. Refer to Drawing No. 3, **Appendix A** for the locations and photos of the Asset No. 108 - Staff House, Asset No. 118 - Garage, Asset No. 106 - Staff House and Asset No. 117 - Garage. The Staff House site is located in a predominantly recreational area in the Community of Cavendish. The site is surrounded by the Green Gables Golf Course to the west, north, and south with the Marco Polo Campground and agricultural properties to the east (i.e., across Route No. 13). The site is currently owned by the Government of Canada and occupied by Parks Canada.

Cavendish Compound

The assets associated with the Cavendish Compound are located north of Route No. 6 in Cavendish. The site investigation was carried out in the Cavendish Compound on an approximate two acre portion of the Prince Edward Island National Park property identified as Parcel No. 232405. Refer to Drawing No. 3, **Appendix A** for locations and photos of the Asset No. 303 - Trade's Building, Asset No. 307 - Industrial Storage Building and Asset No. 310 - Paint Storage Building. The Cavendish Compound site is located in a predominantly recreational area in the Community of Cavendish. The site is surrounded by the Green Gables Golf Course to the west, north, and east with Green Gables (which is part of L.M. Montgomery's Cavendish National Historic Site of Canada), and continuation of the Green Gables Golf Course to the south (i.e., across Route No. 6). The site is currently owned by the Government of Canada and occupied by Parks Canada, which operates the facility as a maintenance and storage yard.

2.3.2 Water Supply/Groundwater Usage

The subject properties are not located within a Well Field or Watershed Protected Area. The subject properties are considered potable sites. The water supply and septic services for each of the sites are as follows:

Cavendish Grove

A deep water well is reported to be located on site (i.e., location and date of construction is unknown) and it is assumed that the assets requiring septic are serviced the Cavendish Municipal system. The new washroom facility installed following Parks Canada acquisition of the property is serviced by the Cavendish Municipal Sewage Treatment Facility, which utilizes four lagoons located to the northwest of the site.

Grahams Lane

The Visitor's Information Centre (VIC) and Sheppard Cottage are serviced by individual wells and septic fields which would have been installed along with the assets in the early 1980's and 1972, respectively.

Cavendish Campground

The campground obtains potable water from two wells that were reported to be drilled in 1959 and are located within the campground property with septic service being provided by the Cavendish Municipal system. The treatment lagoons were constructed sometime in the 1980s are located immediately south of the campground, across Grahams Lane. Prior to the use of the treatment lagoons, the sewer was discharged to Clarke's Pond, located to the east of the campground

Cavendish East Day Use Facility

The Cavendish East Day Use Facility is serviced by an individual well and septic field which would have been installed along with the asset in 1986.

Route 13

These assets are serviced by individual wells and septic fields. Asset No. 108 was constructed in 1948 and it is assumed the services were installed at that time. Asset No. 106 was reportedly constructed in 1956; however, does not appear in the 1958 aerial photograph. It is assumed that the buildings at this location were moved to the site sometime between 1958 and 1974 and the drilled well would have been installed in conjunction with the building relocation.

Cavendish Compound

The site is serviced by a potable well located on the northern portion of the property with septic services provided by the Cavendish Municipal system. It is assumed that the potable well was installed in the early 1940s with the development of the Green Gables Golf Course and compound.

2.3.3 Soil, Topography and Drainage

Based on an available surficial geology map, (J. I. MacDougall, C. Veer and F. Wilson, 1988) the native surficial soils of the area consist of glacial till deposits, principally comprised of sand and silt. A site-specific determination would be required in order to obtain detailed soil profile and permeability information.

Based on an available bedrock geology map, bedrock in the area of the subject property consists of Upper Paleozoic (Pictou Group) Lower Permian Megacyclic Sequence IV, which is made up of redbeds; conglomerate and sandstone (H.W. van de Poll, 1977).

The ground cover of the subject sites consist of grass, regenerating white spruce, peripheral forest and/or native ground covers. Storm water is anticipated to drain from the site by infiltration and/or overland flow.

Based on an available topographic maps and the observed site topography, it was determined that the regional topography is generally north/northwest towards New London Bay and the Gulf of St Lawrence. The site topography and anticipated groundwater flow directions for each of the investigation areas is outlined as follows:

Cavendish Grove

- Northeast toward Lake of Shining Waters and the Gulf of St. Lawrence

Grahams Lane

- Northwest towards the Gulf of St. Lawrence

Cavendish Campground

- Northwest towards the Gulf of St. Lawrence

Cavendish East Day Use

- West toward Lake of Shining Waters

Route 13

- West towards an un-named tributary to the Lake of Shining Waters

Cavendish Compound

- West towards an un-named tributary to the Lake of Shining Waters

2.3.4 On-Site Buildings and Structures

There are currently fourteen assets scheduled for decommissioning and demolition (Drawing No. 3, **Appendix A**). A summary of the property and building information is presented in Table 2.

Table 2. Summary of Current Lot Information and Building Information

	Property Description		
Cavendish Grove			
Area	27 acres identified as Parcel No. 233122		
Services: Sewer, Water, Electricity	• Water is supplied by an on-site deep well • Septic sewer services provided by Cavendish Municipal Sanitary sewer • Electricity is supplied by Maritime Electric Company, Limited via private underground lines		
Building Description	**Canteen**	**Maintenance Building**	**Art Barn**
Date Constructed	1990s	1980s/1990s	Prior to 1935
Area	145 m^2	81 m^2 (and shed 12 m^2)	80 m^2
Number of Storeys	1	2	2
Foundation	None	Concrete Slab	Concrete
Basement	None	None	None
Interior Finish	Wood	Wood	Wood
Insulation	Yes	None	None
Exterior Finish	Wood	Wood	Wood
Roofing Materials	Asphalt Shingles	Asphalt Shingles	Asphalt Shingles
Grahams Lane			
Area	31.4 acres identified as Parcel Nos. 545848 and 231829		
Services: Sewer, Water, Electricity	• Water is supplied by individual wells • Septic sewer services provided by private individual septic systems • Electricity is supplied by Maritime Electric Company, Limited via private aboveground lines		

Table 2. Summary of Current Lot Information and Building Information

Building Description	Asset No. 404 (Visitor Information Center)	Asset No. 112 (Staff House)
Date Constructed	1950 (located to site in early 1980's)	1972
Area	126 m^2	115 m^2
Number of Storeys	1	1
Foundation	Concrete	Concrete
Basement	None	None
Interior Finish	Wood	Wood
Insulation	None	Yes
Exterior Finish	Wood	Asbestos Siding
Roofing Materials	Asphalt Shingles	Asphalt Shingles
Cavendish Campground		
Area	60 acres of the property identified as Parcel No. 232405	
Services: Sewer, Water and Electricity	• Water is supplied by two individual wells • Septic sewer services provided by the Cavendish Municipal Sanitary sewer • Electricity is supplied by Maritime Electric Company, Limited via private aboveground lines	
Building Description	**Asset No. 8087 (Kitchen Shelter)**	
Date Constructed	1959	
Area	55 m^2	
Number of Storeys	1	
Foundation	Concrete Slab	
Basement	None	
Interior Finish	Wood	
Insulation	None	
Exterior Finish	Wood Siding	
Roofing Materials	Asphalt Shingles	
Cavendish East Day Use Facility		
Area	40 acres of the property identified as Parcel No. 232405	
Services: Sewer, Water and Electricity	• Water is supplied by and individual well • Septic sewer services provided by individual septic systems • Electricity is supplied by Maritime Electric Company, Limited via private underground lines	
Building Description	**Asset No. 8106 (Washroom/Kitchen Shelter)**	
Date Constructed	1986	
Area	74 m^2	
Number of Storeys	1	
Foundation	Concrete Slab	
Basement	None	
Interior Finish	Wood	
Insulation	None	
Exterior Finish	Wood Shingles	
Roofing Materials	Wood Shingles	

Table 2. Summary of Current Lot Information and Building Information

Route 13		
Area	0.5 acres identified as Parcel No. 232405	
Services: Sewer, Water and Electricity	• Water is supplied by individual wells • Septic sewer services provided by individual septic systems • Electricity is supplied by Maritime Electric Company, Limited via private aboveground lines	
Building Description	**Asset No. 108 (Staff House)**	**Asset No. 118 (Garage)**
Date Constructed	1948	1950
Area	66 m^2	47 m^2
Number of Storeys	1	2
Foundation	Concrete	Concrete
Basement	Yes	None
Interior Finish	Plaster/rock board	Wood
Insulation	Yes	None
Exterior Finish	Wood	Wood
Roofing Materials	Asphalt Shingles	Asphalt Shingles
Building Description	**Asset No. 106 (Staff House)**	**Asset No. 117 (Garage)**
Date Constructed	1956 (relocated to site between after 1958 and 1974)	1950 (relocated to site between 1958 and 1974)
Area	99 m^2	55 m^2
Number of Storeys	1	1
Foundation	Concrete	Concrete
Basement	Yes	None
Interior Finish	Plaster/rock board	Wood
Insulation	Yes	None
Exterior Finish	Vinyl	Vinyl
Roofing Materials	Asphalt Shingles	Asphalt Shingles

Cavendish Compound			
Area	2 acres identified as Parcel No. 232405		
Services: Sewer, Water and Electricity	• Water is supplied by an individual well • Septic sewer services provided by the Cavendish Municipal Sanitary sewer • Electricity is supplied by Maritime Electric Company, Limited via private underground lines		
Building Description	**Asset No. 303**	**Asset No. 307**	**Asset No. 310**
Date Constructed	Late 1960s/ early 1970s	1950s	1950s
Area	175 m^2	100 m^2	45 m^2
Number of Storeys	1	2	1
Foundation	Concrete Slab	Concrete Slab	None
Basement	None	None	None
Interior Finish	Cinderblock/wood/drywall	Wood	Wood
Insulation	Yes	None	None
Exterior Finish	Cinderblock	Wood	Wood
Roofing Materials	Asphalt Shingles	Asphalt Shingles	Asphalt Shingles

2.4 Historical Land Use

2.4.1 Subject Property

Historical information describing the subject property was obtained from a variety of sources as detailed in **Appendix B**. A summary of historical land uses for the subject property is provided in Table 3.

Table 3. Historical Information for the Subject Property

Period/Date	Land Use	Sources of Information
Cavendish Grove		
1935 - 1958	The Cavendish Grove site is farmland-agricultural fields and remains relatively unchanged. The art barn is visible in the 1935 and 1958 aerial photos. A small creek is visible to the south of the property.	Aerial photos
1974	By 1974 the Rainbow Valley amusement park was established at the site. The creek to the south of the site has been made into two Ponds for use of paddle boats as part of the Rainbow Valley operation.	Aerial photos
1990 - 2000	By 1990 the Rainbow Valley amusement park has had several additional buildings and structures incorporated at the site and have expanded north and west of the original area. The parking area to the south of the ponds has been expanded east and west. By 2000 the amusement park remains relatively unchanged, the Canteen and the Maintenance Building are apparent in the photo.	Aerial photos
2006	Parks Canada Acquires the site – the amusement park is dismantled and is converted to a seasonal day park with walking/biking trails and cross country ski trails.	Site Visit and Interview
Grahams Lane		
1935 - 1958	The subject sites on Grahams Lane are farmland-agricultural fields and remains relatively unchanged. A farm is visible to the west of the property, across Grahams Lane.	Aerial photos
1974	The sites remain relatively unchanged, with the exception of the addition of Sheppard Cottage to the SE corner of the site. The staff house was reportedly erected in 1972. One of the buildings for the current privately owned cottages is apparent across Grahams Lane.	Aerial photos and Interview
1990	By 1990, the VIC is apparent at the NW corner of the site. Although built in 1950, this building originated from another site and was moved once before being placed in its current location around 1980. Sheppard Cottage remains unchanged. The first two of four sewage lagoons (installed in 1980 by Parks Canada and taken over by the municipality in 1990) are apparent and located approximately 300 m NE of the site. The former agricultural fields to the north, east and south are beginning to regenerate with old field white spruce.	Aerial photos and Interview

Table 3. Historical Information for the Subject Property

Period/Date	Land Use	Sources of Information
2000	The site remains relatively unchanged with the exception of the amount of forest regeneration. The sewage lagoon now includes an addition of two more lagoons. The privately owned cottages to the west of the site have had several additions.	Aerials photos
Cavendish Campground		
1935-1958	In the 1935 aerial photo, the subject is a mix of agricultural fields and forested land. By 1958, the majority of the site was regenerated old field white spruce.	Aerial photos
1959	In 1959 the Campground was established at the site.	Interview
1959-2010	The site continues to operate as a campground with the addition and deletion of select buildings over time (i.e., kitchen shelters, change houses, washroom facilities, etc). The subject Asset No. 8087 (i.e., Kitchen Shelter) is apparent in the 1974, 1990 and 2000 aerial photographs.	Aerial photos, Interview and Site visit
Cavendish East Day Use Facility		
1935-1974	The site is operated by Parks Canada as a beach complex (associated with the golf course – established in the early 1940s). In the 1935 aerial, the site is cleared, several small buildings area apparent, and the area to the west, south and east are agricultural land. By 1958, the golf course is apparent and the site has several parking lots and the beach cottages and complex buildings are apparent. The vegetation in the area has started to regenerate. By 1974, an additional parking area is apparent to the NE of the site.	Aerial photos and Interview
1990-2010	By 1990, the beach complex cottages have been removed and the current Day Use Facility includes Washroom/Kitchen Shelter (i.e., Asset No. 8106) was erected at its current location (1986). The site remains relatively unchanged in the 2000 aerial photo, with the exception of the addition of a playground SE of the buildings and the amount of regeneration of the old field white spruce. In 2010, the site continues to operate as a Day Use Facility, complete with walking trails.	Aerial photos, Interview and site visit.
Route 13		
1935	The site is cleared agricultural fields. A creek is visible to the west of the site.	Aerial photos
1958	Assets Nos. 108 (Staff House) and 118 (Barn) are apparent in the 1958 aerial photo and were reportedly constructed in 1948 and 1950 respectively. The area to the north, and future location of Assets Nos. 106 and 117 is regenerating forest habitat. The golf course is visible to the west and the areas to the east remain agricultural.	Aerial photos and Interview

Table 3. Historical Information for the Subject Property

Period/Date	Land Use	Sources of Information
1974	Assets Nos. 106 (Staff House) and 117 (Garage) area apparent in the 1974 aerial photo. According to the Park Canada database, these buildings were erected in 1956 and 1950, respectively, although are not visible and the site is not cleared in the 1958 aerial. It is possible these buildings were relocated to their current location. The areas immediately adjoining the staff houses have vegetative cover consisting of regenerating old field white spruce. The golf course remains to the north and west, and the Marco Polo Campground has been established to the east, across Route No. 13. Some agricultural land also remains to the east.	Aerial photos and Interview
1990-2010	The sites and surrounding properties remain relatively unchanged from 1974 to present day, with the exception of the addition of structures and facilities on the properties located across Route No. 13.	Aerial photos, Interview and Site Visit.
Cavendish Compound		
1935	The site was developed by 1935, the driveway and a couple of buildings apparent in the 1935 aerial photo.	
1940 -2010	The Green Gables Golf Course was established in the early 1940s and the Compound operated as a maintenance and storage area for the Park, campground, beach and golf facilities. Between 1958 and 2000, several structures were added to the Compound, as required. Reportedly, in November 1990, two USTs were replaced (4,500 L diesel and 2,270 L gasoline) – the tanks that were removed were not classified as "leakers" and were removed under the supervision of PEIDEEF. In 2001 and 2010 a Phase II ESA was conducted for this area and determined that the soil and groundwater in the vicinity of the tanks had concentrations of petroleum hydrocarbons below the laboratory method detection limits and additional assessment was not recommended.	Aerial Photos, Interview and Site Visit

No other potential sources of environmental contamination from historical activities on the subject property were identified during the historical review.

2.5 Site Visit and Evaluation of Findings

2.5.1 Fuel Storage and Handling

The PIDs numbers associated with the different sites are as follows:

- PID No. 232405 Cavendish Campground, Cavendish Compound, Route 13 and Cavendish East Day Use Facility;
- PID No. 233122 Cavendish Grove;

- PID No. 545848 Graham's Lane (VIC); and
- PID No. 231829 Graham's Lane (Staff House)

The PEIDEEF requests completed for PID No. 232405 was conducted in a previous report (JWL, March 2010), and reported the following tanks registered at the Cavendish Compound property:

- On November 1, 1990, one (1) 1970 4,500-Litre underground petroleum storage tank was removed under PEIDEEF supervision ("Facility Name" was identified as "Cavendish Park Maintenance Shop"). The tank was classified as a non-leaker. The tank removal was completed to the satisfaction of the Department.

- On November 9, 1990, one (1) 1984 2,270-Litre underground petroleum storage tank was removed under PEIDEEF supervision ("Facility Name" was identified as "Cavendish Park Maintenance Shop"). The tank was classified as a non-leaker. The tank removal was completed to the satisfaction of the Department.

- One (1) 1990 4,546-Litre diesel underground storage tank and one (1) 1990 2,273-Litre gasoline underground storage tank are on record with PEIDEEF. These were observed to the south of Asset No. 303 at the time of the site visit for the current investigation.

The Department has no records on file for any non-compliance environmental issues, outstanding charges or Ministerial Orders, or operating air quality permits for the above mentioned property.

Also documented in the previous report, was two ASTs identified on the property on the west side of Asset No. 303. One was 1,136 L fibreglass tank and the second was a steel tank situated in a concrete containment cell with a wooden enclosure. This steel tank had been reportedly decommissioned and removed from the site in 2009.

The identification of the above noted former and present petroleum underground storage tanks (USTs) was considered a potential environmental concern to the subject site. The potential environmental concerns were addressed with the completion of a Phase I/II ESA by Jacques Whitford in 2010 (Jacques Whitford, March 2010).

No other current or historical activities, operations or tenants on the site property were identified within the PEIDEEF letter that would be considered a potential environmental concern.

The PEIDEEF request completed for PID 233122, 545848 and 231829 indicated that the Department had no records on file for any non-compliance environmental issues, outstanding charges or Ministerial Orders, underground petroleum storage tanks or operating air quality permits related to the subject property.

2.5.2 Chemicals

Chemicals were not identified in the subject assets during the site visit with the exception of small quantities of chemicals (i.e., fertilizer, aerosol cans, paint, washer fluid, gasoline jerry cans etc.) stored in the Industrial Storage Shed and/or Trades Building for use at the golf course and Day Use Facilities. None of the chemicals were present in volumes that would constitute a concern for environmental contamination of the site and/or were addressed during previous investigations at the site. However, for due diligence, it is recommended that the storage of these chemicals follow best management practices to meet current provincial and federal standards.

2.5.3 Waste Disposal

Waste is not generated at most of the sites. Where the sites are currently active, the waste generated on the site is transferred by local sanitation contractors and/or Parks Canada personnel for appropriate disposal. On-site disposal areas or burn areas were not identified during the site visit, records review or interviews.

2.5.4 Spill and Stain Areas

No spills or stained areas were observed on site during the site reconnaissance nor were any others reported during the records review or interviews.

2.5.5 Lead and/or Lead Based Paint

Based on the age of the buildings, lead and/or lead based paint may be present on the sites. Representative samples were collected at the time of the site visit for the purpose of laboratory analysis and the results are further discussed in Section 3.4.

2.5.6 Mercury

Significant sources of mercury containing materials were not identified on the subject properties at the time of the site visit, or during the records review or interviews with the exception of the following:

- Mercury containing thermostat - Asset No. 108 (i.e., Staff Housing); and
- Mercury containing fluorescent light bulbs - Asset No.108 (i.e., Staff Housing), Asset No. 106 (i.e., Garage), Maintenance Barn and Canteen

2.5.7 Pesticides

Evidence of pesticide related contamination was not identified and/or was identified and addressed in previous reports and is not an environmental concern.

2.5.8 Wastewater Effluent

Wastewater effluent is not produced nor discharged at the subject properties.

2.5.9 Air Emissions

Sources of air emissions that are suspected to result in residual contamination to the property were not identified on the Site. Further, no strong, pungent, or unusual odours were identified during the site visit.

2.5.10 Polychlorinated Biphenyls

Lamp Ballasts

Fluorescent light fixtures were observed in the following assets - Asset No. 108 (i.e., Staff House), Asset No. 106 (i.e., Garage), Maintenance Barn, Canteen and Asset No. 404 (i.e., VIC). Based on the ages of the buildings, they may contain PCBs.

Transformers

All the transformers in the Prince Edward Island National Park were converted to have non-PCB containing oils in 1999.

2.5.11 Asbestos Containing Materials

Several potential ACMs were observed during the site visit and documented during the interviews. Representative samples were collected at the time of the site visit for the purpose of laboratory analysis and the results are further discussed in Section 3.5.

2.5.12 Urea Formaldehyde Foam Insulation

Evidence of UFFI was not observed during the site visit nor identified in the records review.

2.5.13 Ozone Depleting Substances

No equipment or appliances that could contain ODSs were observed on the subject property during the site visit. However, should ODSs be identified during the decommissioning activities, they should be dealt with in accordance with the Federal Halocarbon Regulations.

2.5.14 Mold

Evidence of moisture damage and mold was observed in the Asset No.112 (i.e., Sheppard Cottage), Asset No. 108 (i.e., Staff Housing) and the Art Barn at the time of the site visit. Mold was not observed in any of the other assets assessed during the site visit.

During decommissioning/demolition activities of the site structures, the contractor should be aware of the potential for exposure to mold and must ensure that proper handling methodology are used for due diligence and safety purposes.

2.5.15 Electromagnetic Fields

High-tension transmission lines or electrical substations which could generate significant electromagnetic fields were not identified near the subject property.

2.5.16 Noise and Vibration

Major sources of noise or vibration were not identified on the property or adjoining properties at the time of the site visit, nor were they identified in the records review.

2.5.17 Radon

Testing for radon gas or its breakdown products has not been completed on the subject property. However, based upon the local geology (i.e., sandstone bedrock), and lack of any basements in on-site buildings, significant levels of radon gas or its breakdown products are not expected.

2.5.18 Other Areas of Concern

Based on the results of the analysis conducted for the paint sampling (Section 3.4), lead paint has been identified at the sites. Based on Stantec's experience with other Parks Canada sites, there is the potential for metals impacts in the soil adjacent to the Site buildings (i.e., drip line and extending out from the building footprint). Note that the soil extending out from the building footprints at the Cavendish Compound have previously been investigated and the results of those soil sampling programs are provided under separate cover (Jacques Whitford Phase I/II ESA, March 2010). The soil sampling results from the previous site assessment (Jacques Whitford Phase I/II ESA, March 2010) indicate that the concentrations of metals (i.e. arsenic, lead, nickel and zinc) in the soil surrounding asset No. 307, at the Cavendish Compound, exceed the CCME commercial criteria. The soil sampling results for the remaining two assets scheduled for decommissioning and demolition at the Cavendish Compound (Asset Nos. 303 and 310) do not exceed the applicable CCME commercial criteria.

3.0 HAZARDOUS MATERIALS SURVEY

3.1 Scope of Work

The Hazmat survey was conducted to identify and quantify the hazardous materials that were associated with the structures identified for decommissioning and demolition. The hazardous substances which were investigated included lead paint and asbestos (i.e., non-friable and friable). The Hazmat survey included an assessment of both friable and non-friable asbestos building materials. The term friable is applied to a material that can be readily reduced to dust or powder by hand or moderate pressure. Asbestos materials that are friable have a much greater potential to release airborne asbestos fibres when disturbed. Any identified mercury or PCB containing equipment was documented and reported in the Phase I portion of this assessment.

3.2 Methodology

3.2.1 Paint Sampling Program

Paint sampling of the structures was conducted with paint analyzed for lead. Samples were submitted to Maxxam Analytics (Maxxam) in Bedford, Nova Scotia. Maxxam is accredited by the SCC for each of the analysis methods utilized and has in-house QA/QC programs to govern sample analysis.

A minimum of 10 g of paint was attempted to be collected from each area sampled (different coloured paint). The lab weighed each paint sample and the areal extent of the samples was measured in the field. For samples exceeding 5,000 mg/kg lead, leachate testing for lead was conducted. The approximate areal extent of each paint colour was also measured in the field.

3.2.2 Asbestos Sampling Program

Suspect asbestos-containing building materials were collected, stored in a clean plastic bag, and submitted for asbestos analysis using Polarized Light Microscopy (PLM) and/or Transmission Electron Microscopy (TEM). Samples were submitted to AmeriSci Boston (AmeriSci), located in Weymouth, Massachusetts. AmeriSci is certified under the National Voluntary Laboratory Accreditation Program (NVLAP) to perform asbestos analysis of bulk samples (NVALP Lab #102079-0). Please note that AmeriSci has scope of accreditation to ISO/IEC Standard 17025 as certified by NVLAP.

3.2.3 Field and Laboratory Analytical Program

The field and laboratory analytical program is summarized in Table 4. Laboratory reports are presented in **Appendix D**.

Table 4. Field and Laboratory Program

Analytes	Matrix	Sample Locations	Samples Submitted	Sample IDs	QA/QC Samples		
					Original	Field Dup	Lab Dup
Lead in Paint	Paint chips	49	53 including 4 QA/QC	PS-1 to PS-49	PS-2 PS-9 PS-17 PS-36 PS-41	DUP1 DUP2 DUP3 - DUP4	PS-2 LD PS-9 LD DUP3 LD PS-36 LD -
Asbestos	Bulk Materials	46	49 including 3 QA/QC	AS-1 to AS-45	AS-3 AS-8 AS-12	DUPA DUPB DUPC	- - -

3.2.4 Quality Assurance/Quality Control Sampling Program

The QA/QC sampling was conducted on approximately 10% of parameters that were analyzed. QA/QC was addressed by collecting field duplicates. The results of this testing were used to evaluate the reliability of the sampling. QA/QC results are provided in Section 3.8.

3.3 Field Observations

The sample locations for the asbestos and paint samples are shown on Drawings Nos. 4 to 17 in **Appendix A**. Photographs of each building are provided in **Appendix C** and the field observations (i.e., estimated area of painted surfaces, descriptions of asbestos samples and sample locations) are provided in the appropriate Tables in **Appendix D**.

3.4 Laboratory Analysis Results for Lead in Paint

Laboratory analytical results for lead concentrations in paint and paint leachate from the structures in Cavendish are presented in Table D-1 in **Appendix D**, along with an estimate of the area of each painted surface.

Lead in Paint Samples
• 53 submitted including 4 QA/QC
• 14 exceeded 5,000 mg/kg
• 8 submitted for lead leachate analysis
• 7 exceeded lead leachate criteria
• [Pb] nd - 67,000 mg/kg
• [Pb] leachate 2.1 - 67 mg/L

Seventeen (17) of the fifty-three (53) paint samples submitted for analysis contained lead in concentrations greater than 5,000 mg/kg. Of these seventeen (17) samples, additional analysis was requested on eight (8) samples for lead leachate analysis. Samples were selected that had enough paint remaining from the original sample to run the leachate test. The paint sample results exceeded the lead leachate criteria for seven (7) of eight (8) paint samples submitted for lead leachate analysis.

3.4.1 Historical Results – Lead Paint Cavendish Compound

A Phase I/II ESA conducted at the Cavendish Compound in 2010 quantified the lead content of the paints used on the buildings within the compound. Based on the lead content results, samples were collected during the current assessment for lead leachate analysis for the paints that had a lead content greater than 5,000 mg/kg. In total, three (3) paint samples were collected for lead leachate analysis. The paint sample results exceeded the lead leachate criteria for all the paint samples submitted for analysis.

Lead Leachate in Paint Samples based on previous results
• 3 submitted for analysis
• 3 exceeded lead leachate criteria
• [Pb] leachate 16 - 37 mg/L

3.5 Laboratory Analysis Results for Asbestos

Laboratory analytical results for the asbestos samples collected from the structures in Cavendish is presented in Table D-2 in **Appendix D**, along with the description of the material and the sample location.

Asbestos Samples
• 49 submitted including 3 QA/QC
• 6 contained >1% asbestos
• 7 contained trace asbestos

Based on the results provided, asbestos was identified (material with 1% or more by volume of asbestos) in eight (8) of the forty-nine (49) samples collected from the assets in Cavendish (i.e., AS-6, AS-8/DUP B, AS-12/DUPC, AS-26, AS-32 and AS-38). ACMs included siding, tile adhesive, tile underlay, tar paper and adhering tar. Trace chrysotile asbestos (<1%) was also identified in seven (7) samples (i.e., AS-2, AS-7, AS-8, AS-16, AS-29, AS-30 and AS-37) and consisted of window grout, asphalt shingles and tar paper.

3.6 Quality Assurance / Quality Control Discussion

Results of the QA/QC sampling are provided in Table 5.

Table 5. Summary of QA/QC Sampling

Duplicate Type	Analysis	Range of %RPD	Number of Analytes within ±40% RPD	Acceptable Duplicate Correlation
Field Duplicates	lead	0% to 27%	4 of 4	Yes
Laboratory Duplicates	lead	0% to 2%	4 of 4	Yes
Field Duplicates	asbestos	0%	3 of 3	Yes

In general, the duplicate results agree closely with their corresponding samples and confirm the representativeness of the sampling procedures. There are no firm guidelines for the degree of correlation expected between duplicates due to natural heterogeneity and contaminant distribution. However, the values noted above are considered to indicate an acceptable duplicate correlation.

All individual parameters in the duplicates were classified the same (either above or below guidelines). The overall data quality is considered acceptable.

3.7 Discussion

Paint with no lead content may be disposed of at a provincially licensed C&D facility. Lead containing paint with concentrations below 5,000 mg/kg may be disposed of at the East Prince Waste Management (EPWM) facility located in Wellington, Prince County, PEI. Where enough sample remained, paint samples containing a lead concentration greater than 5,000 mg/kg were submitted for leachate analysis. Although all the paint samples were not analyzed for leachate, there is a large enough representation from the site to identify that any sample containing > 5,000 mg/kg exceeded the lead leachate criteria of 5 mg/L as all the samples available for leachate analysis exceeded the leachate criteria with the exception of one (i.e., Art Barn located at the Cavendish Grove). It should be noted that based on the age of the Art Barn (i.e., pre-1935) and the limited area tested it is recommended and deemed applicable to consider that the exterior wall paint on the Art Barn would have a lead leachate content above 5 mg/L sample. The majority of the paints sampled (not including paint with non-detectable levels of lead identified) will require disposal at EPWM, with the exception of the paints (approximate surface areas indicated) identified as follows, which will require disposal out of province:

<u>Cavendish Grove</u>

- Maintenance Building - Exterior red walls (i.e., Shed - 25 m^2)
- Art Barn – Exterior white walls (155 m^2) and interior blue counter base (2nd floor -15 m^2)

<u>Grahams Lane</u>

- Asset No. 404 (i.e., VIC) - Exterior white walls (160 m^2) and exterior beige trim (15 m^2)

<u>Cavendish Campground</u>

- Asset No. 8087 (i.e., Kitchen Shelter) - Exterior green trim (5 m^2) and interior grey walls (30 m^2)

<u>Cavendish East Day Use</u>

- Asset No. 8106 (i.e., Washroom/Kitchen Shelter) - Yellow doors (15 m^2)

<u>Route 13</u>

- Asset No. 108 (i.e., Staff House) - Exterior grey foundation (20 m^2), interior beige walls (250 m^2) and exterior brown cover on oil tank (15 m^2)
- Asset No. 118 (i.e., Storage Barn) - Exterior white walls (120 m^2) and exterior beige trim (5 m^2)

- Asset No. 117 (i.e., Storage Garage) - Exterior white trim (5 m^2)

Cavendish Compound

- Asset No. 307 (i.e., Industrial Storage Building) - Exterior white walls (250 m^2) and beige trim (5 m^2) and interior white trim (2 m^2)

For the purposes of this report the asbestos results that indicate trace levels (i.e., < 1%) are considered ACMs due to the inhomogeneous nature of the asbestos distribution in the materials sampled. The asbestos containing materials (including estimated volumes) are identified as follows:

Cavendish Grove

- Canteen – Tar paper on roof (190 m^2)
- Maintenance Building – Tar on shingles for roof (shed) (20 m^2) and window caulk (shed)(<1 m^2)
- Art Barn – Asphalt Shingles and adhering tar (140 m^2)

Grahams Lane

- Asset No. 112 (i.e., Sheppard Cottage) - Siding (130 m^2) and window caulk (<1 m^2)

Route 13

- Asset No. 108 (i.e., Staff House) - Wall tile adhesive (15 m^2)
- Asset No. 106 (i.e., Staff House) - Kitchen floor underlay (15 m^2) and window caulk (<1 m^2)
- Asset No. 117 (i.e., Garage) - Window caulk (<1 m^2)

Cavendish Compound

- Asset No. 307 (i.e., Industrial Storage Building) - Tar paper on roof and walls (450 m^2) and asphalt shingles on roof (150 m^2)

Removal of any ACMs should be undertaken using appropriate procedures by a qualified abatement contractor prior to demolition of the building.

4.0 CONCLUSIONS

Based on the information gathered and on observations made during this investigation, the modified Phase I ESA and Hazmat Survey has revealed evidence of hazardous materials associated with the property assets. Results are as follows:

- Seventeen (17) of fifty-three (53) paint samples from the assets exceeded the provincial disposal criteria of 5,000 mg/kg.
- Seven (7) of eight (8) samples submitted for lead leachate analysis exceeded the disposal criteria of 5 mg/L.
- Fifteen (15) of forty-nine (49) suspected ACMs had asbestos detected in the content.
- Several of the assets had potential PCB/mercury containing equipment on site such as fluorescent lights, light ballasts and thermostats.

5.0 CLOSURE

This report has been prepared for the sole benefit of Public Works and Government Services Canada and Parks Canada. The report may not be relied upon by any other person or entity without the express written consent of Stantec Consulting Ltd., Public Works and Government Services Canada, and Parks Canada.

Any use which a third party makes of this report and any reliance on decisions made based on it, are the responsibility of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions or actions made based on this report.

Some of the information presented in this report was provided through existing documents and interviews. Although attempts were made, whenever possible, to obtain a minimum of two confirmatory sources of information, Stantec Consulting Ltd. in certain instances has been required to assume that the information provided is accurate.

The conclusions and recommendations presented represent the best judgement of the assessor based on current environmental standards and on the observed site conditions. Due to the nature of the investigation and the limited data available, the assessor cannot warrant against undiscovered environmental liabilities.

The conclusions are based on results from specific testing and/or sampling locations, and can only be extrapolated to an undefined limited area around these locations. The extent of the limited area depends on the soil and groundwater conditions, as well as the history of the site reflecting natural,

construction and other activities. In addition, analysis has been carried out for a limited number of chemical parameters, and it should not be inferred that other chemical species are not present.

Should additional information become available, Stantec Consulting Ltd. requests that this information be brought to our attention so that we may re-assess the conclusions presented herein. This report was prepared by Ms. Danya MacGillivray, P.Eng. and reviewed by Peter H. Joostema, FEC, P.Eng., CESA.

The professional qualifications of Site Assessors, and the Senior Reviewer are provided in **Appendix F**.

Sincerely,

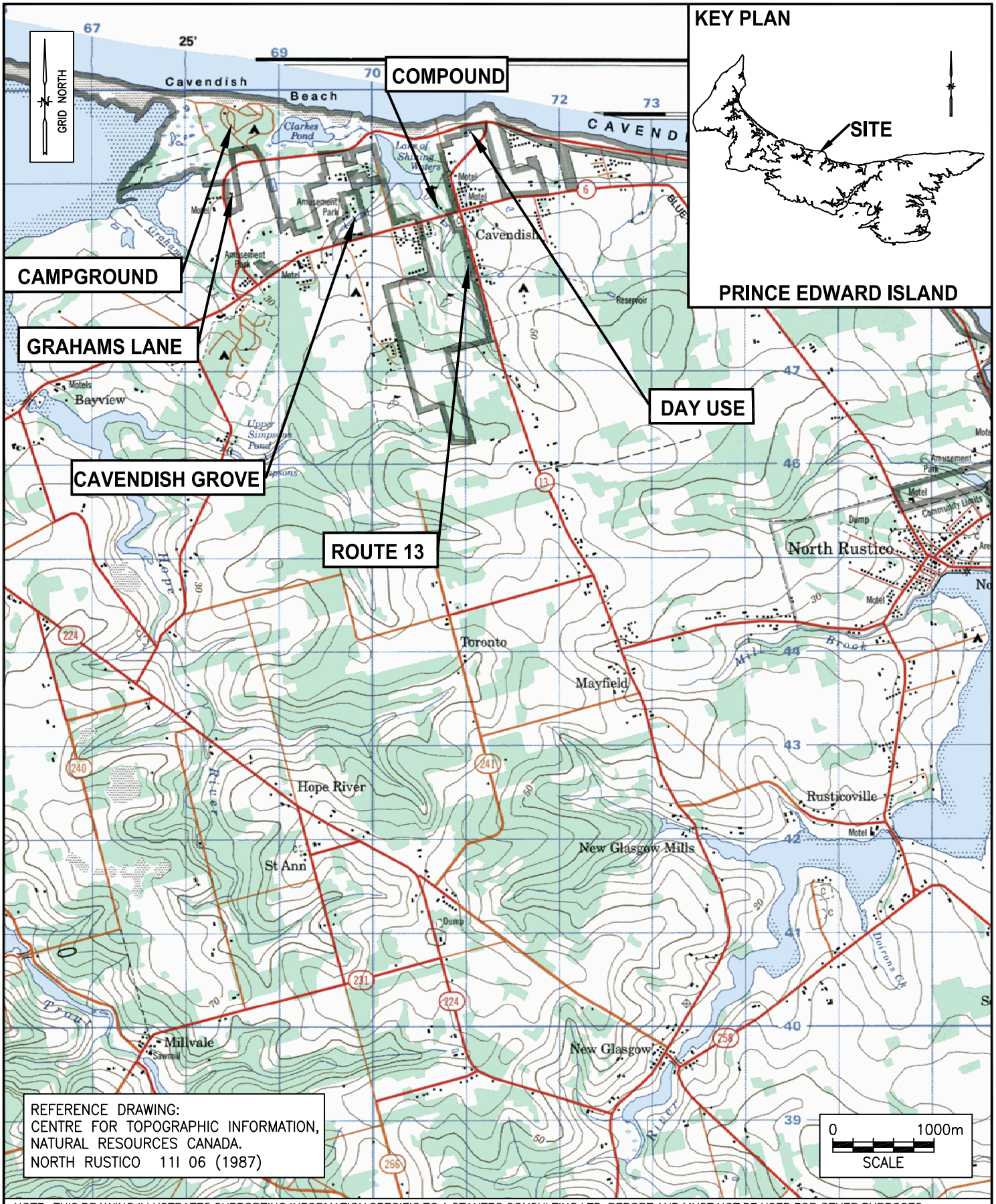
STANTEC CONSULTING LTD.

Danya MacGillivray, P.Eng.
Site Assessor

Peter H. Joostema, FEC, P.Eng., CESA
Senior Reviewer

APPENDIX A

DRAWINGS AND AERIAL PHOTOGRAPHS



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SITE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1 : 50 000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Dwg. No.: 1

Stantec

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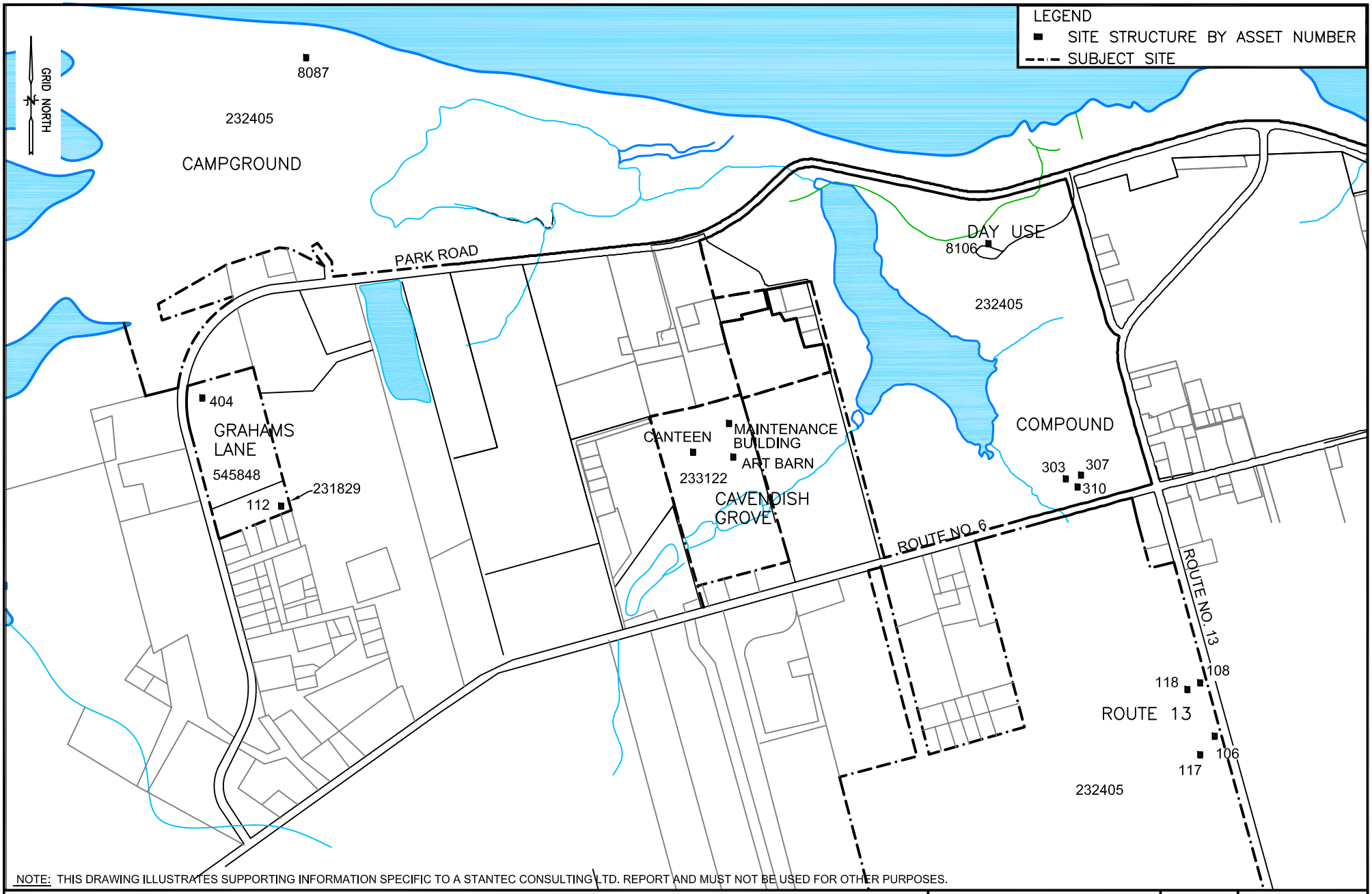

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SITE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:14,000
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 2

Stantec

LEGEND

■ SITE STRUCTURE BY ASSET NUMBER

① PHOTO NUMBER AND DIRECTION

NOTE: PROPERTY BOUNDARIES ARE FROM PEI GEOMATICS DATABASE AND ARE APPROXIMATE

GRID NORTH

PHOTO 62 - VIEW FACING NORTHWEST TOWARD ASSET #8087 (KITCHEN SHELTER)

PHOTO 22 - VIEW FACING SOUTHWEST TOWARD ASSET #404 (VISITOR INFORMATION CENTRE)

PHOTO 29 - VIEW FACING SOUTHEAST TOWARD ASSET #112 (SHEPPARD COTTAGE)

PHOTO 1 - VIEW FACING SOUTH TOWARD CANTEEN

PHOTO 17 - VIEW FACING EAST TOWARD MAINTENANCE BUILDING

PHOTO 35 - VIEW FACING NORTHWEST TOWARD ASSET #8106 (KITCHEN FACILITY)

PHOTO 12 - VIEW FACING NORTHWEST TOWARD ART BARN

PHOTO 65 - VIEW FACING SOUTHWEST TOWARD ASSET #303 (GARAGE)

PHOTO 43 - VIEW FACING WEST TOWARD ASSET #106 (GARAGE)

PHOTO 71 - VIEW FACING WEST TOWARD ASSET #310 (STORAGE SHED)

PHOTO 64 - VIEW FACING NORTH TOWARD ASSET #307 (STORAGE SHED)

PHOTO 59 - VIEW FACING SOUTH TOWARD ASSET #118 (GARAGE)

PHOTO 45 - VIEW FACING WEST TOWARD ASSET #108 (STAFF HOUSING STRUCTURE)

PHOTO 39 - VIEW FACING WEST TOWARD ASSET #117 (STAFF HOUSING STRUCTURE)

Reference: PEIDEEF ESRI MAPPING SYSTEM FOR PRINCE COUNTY, PEI	**Job No.:** 121711090 **Scale:** 1:14,000 **Date:** 2010 09 29 **Dwn. By:** D. RIMMER **App'd By:** DM	**Client:** PUBLIC WORKS AND GOVERNMENT SERVICES CANADA **Site Address:** PRINCE EDWARD ISLAND NATIONAL PARK	PHASE I ENVIRONMENTAL SITE ASSESSMENT AND HAZARDOUS MATERIALS SURVEY	SITE PLAN WITH PHOTOGRAPHS	**Dwg. No.:** 3

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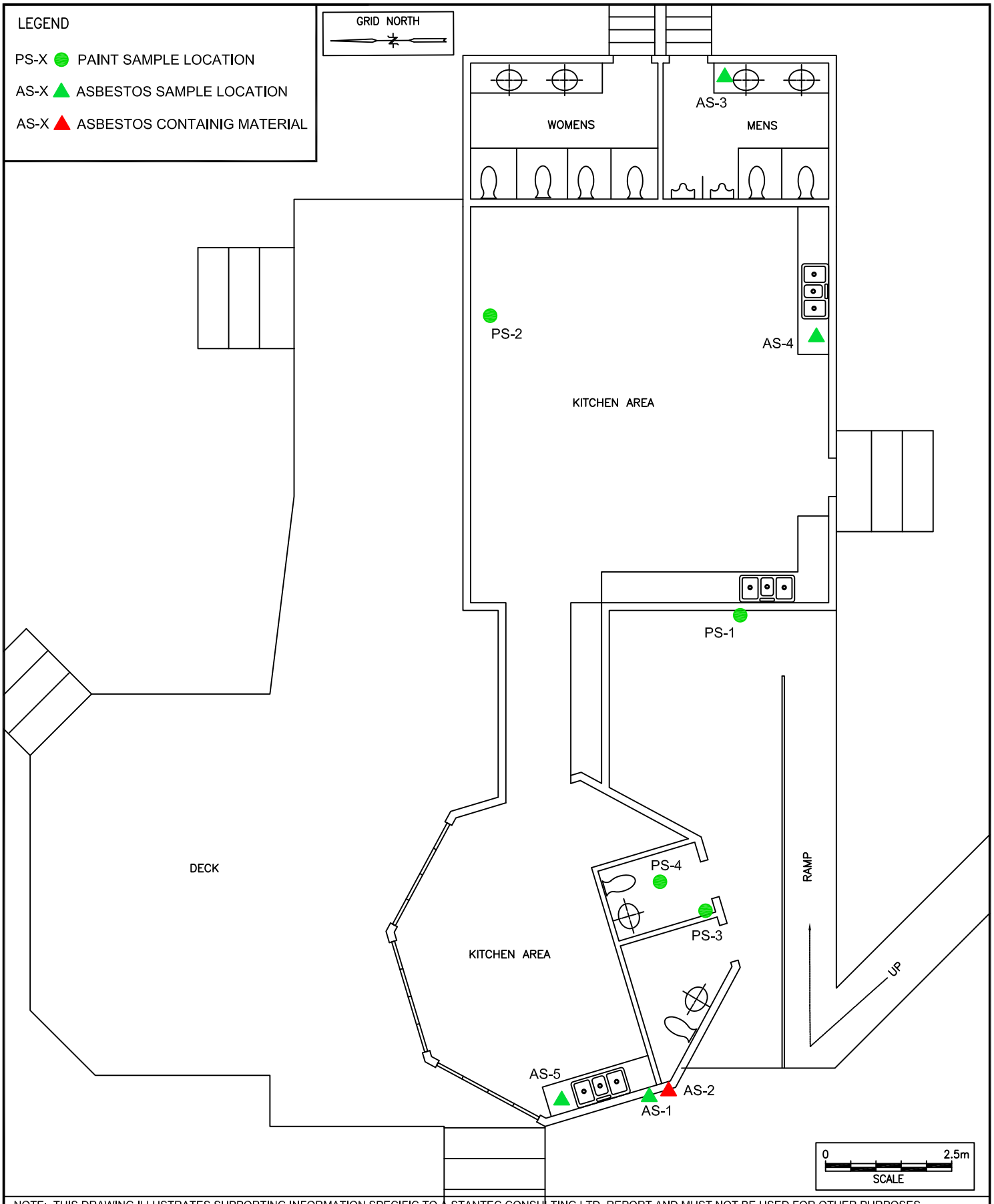

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SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET - CAVENDISH CANTEEN
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:100
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 4

Stantec

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LEGEND

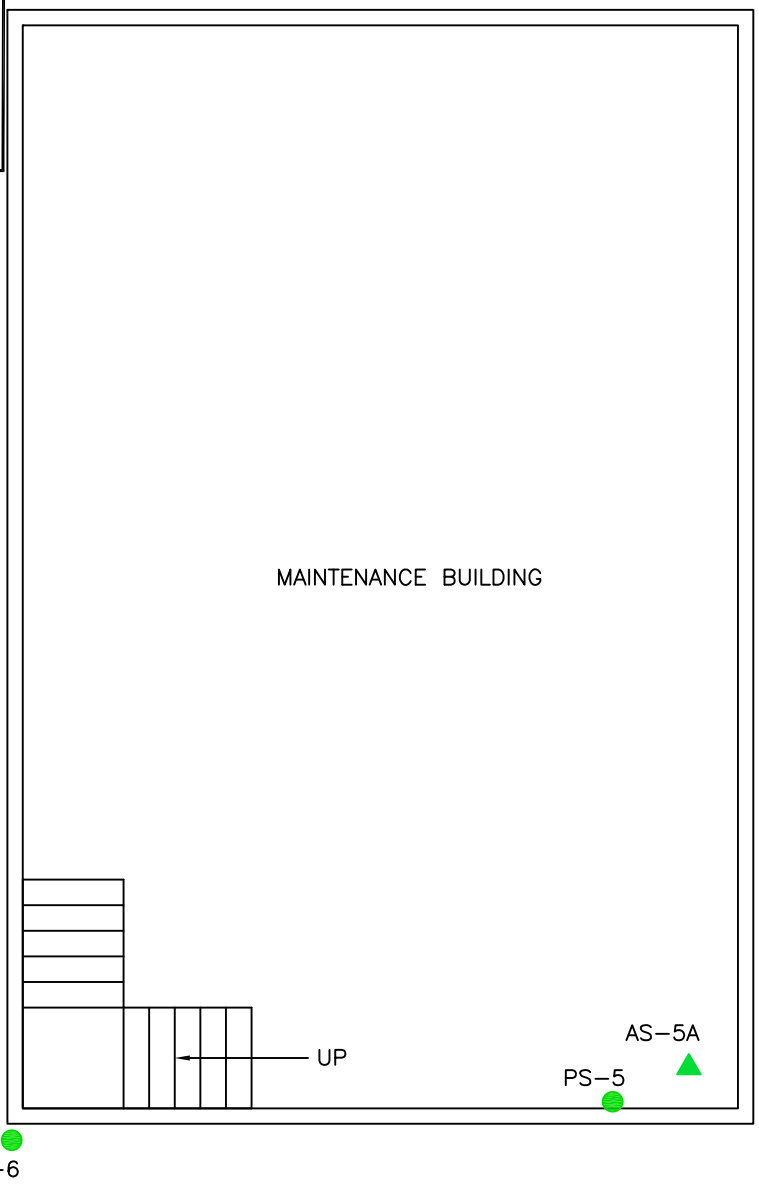
PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

PS-X LEAD CONTENT EXCEEDS 5000mg/kg

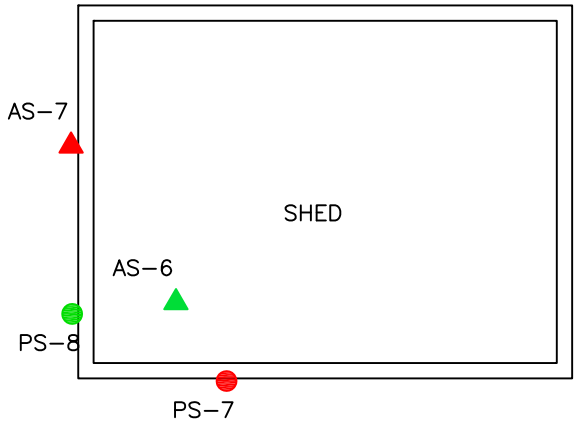
AS-X ASBESTOS CONTAINING MATERIAL

GRID NORTH



SCALE 0 1m

GRID NORTH



SCALE 0 1m

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET - MAINTENANCE BUILDING

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 5

Stantec

U:\z Cadd\9XXX\121711090_200_200\121711090.200.200-CAVENDISH MAINTENANCE BUILDING.dwg

LEGEND

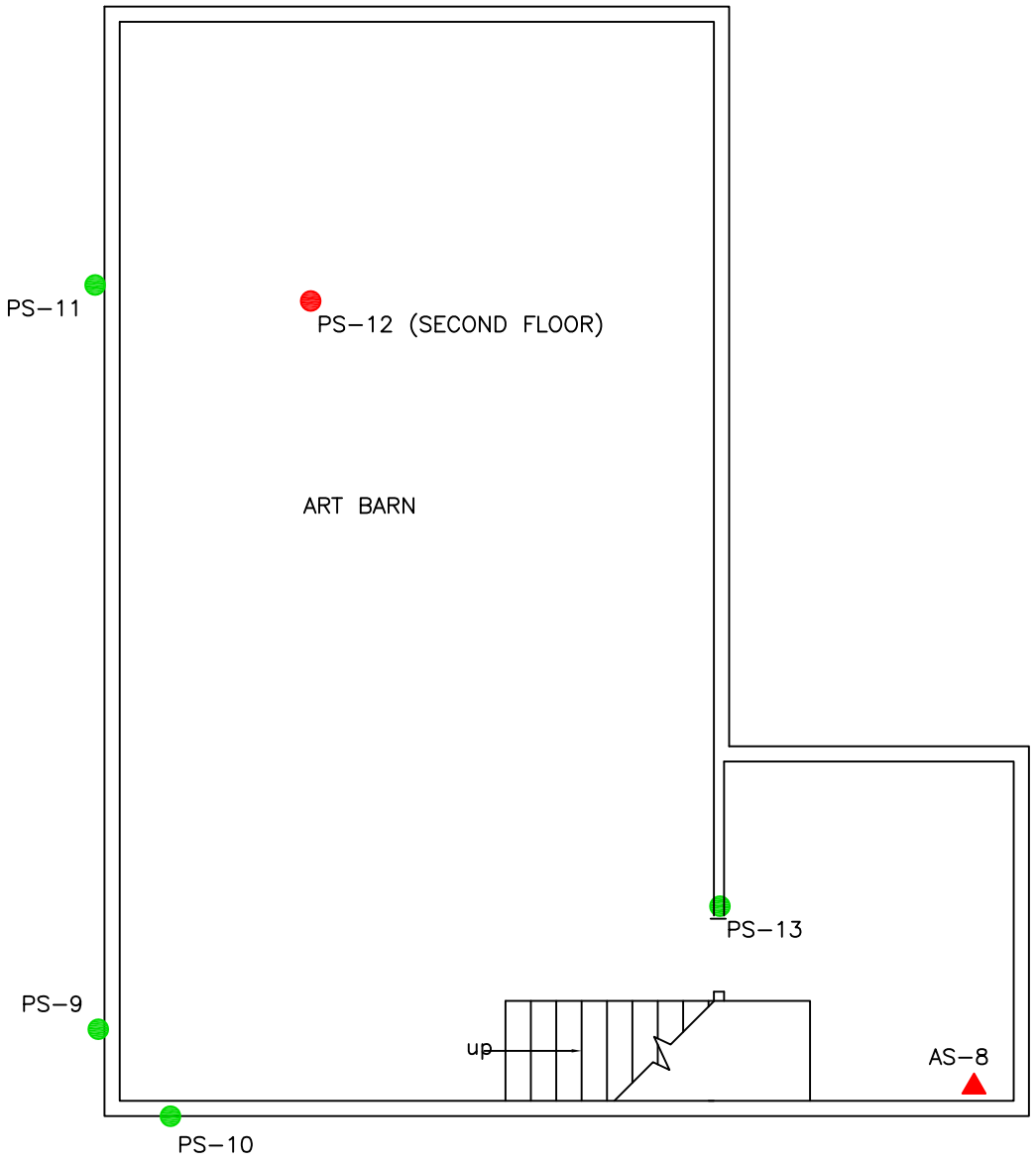
PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

PS-X LEAD CONTENT EXCEEDS 5000mg/kg

AS-X ASBESTOS CONTAINING MATERIAL

GRID NORTH



0 2.5m

SCALE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET - CAVENDISH ART BARN

PRINCE EDWARD ISLAND NATIONAL PARK

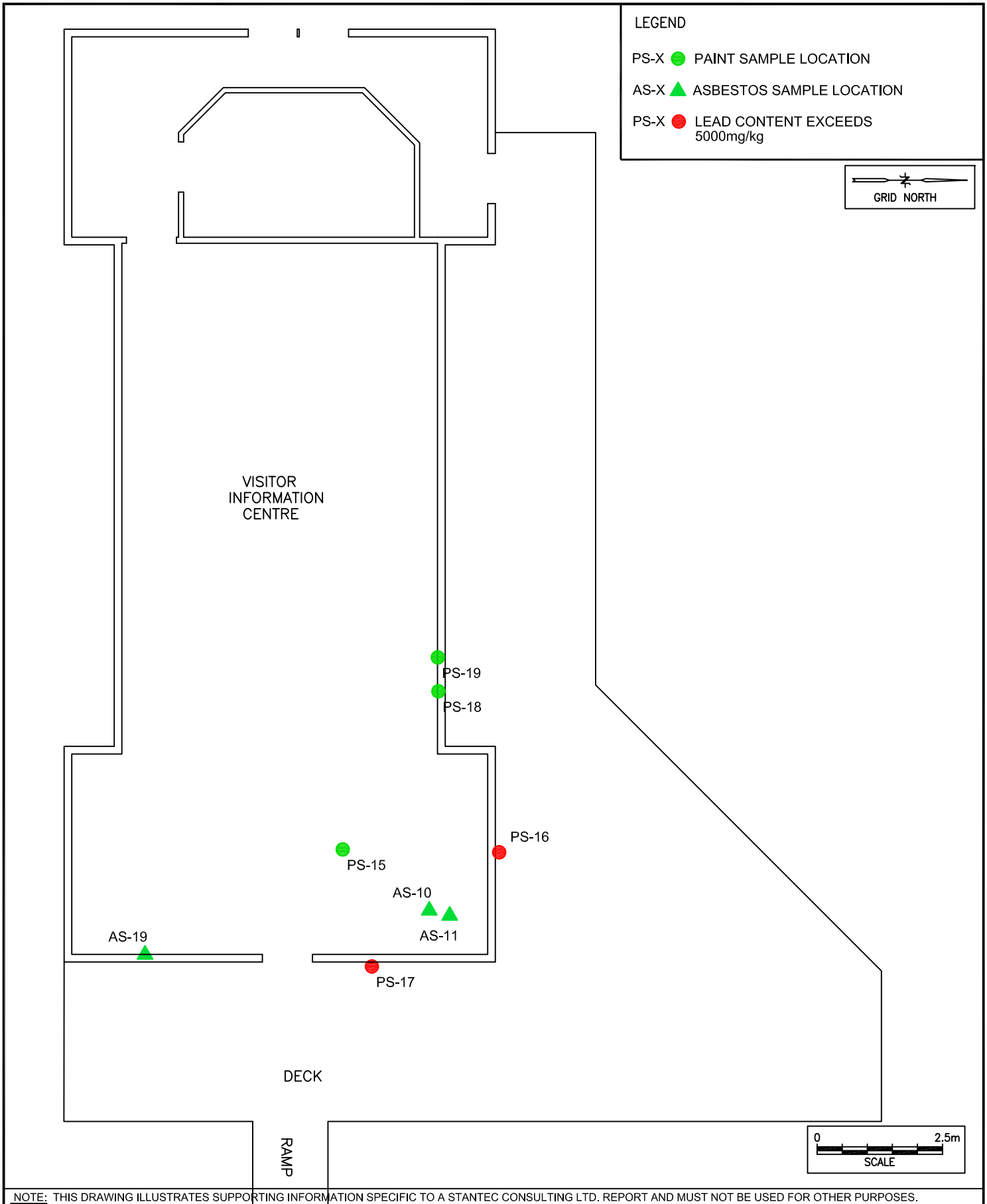
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 6

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-Cavendish Art Barn.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET # 404
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:100
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 7

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-404.dwg

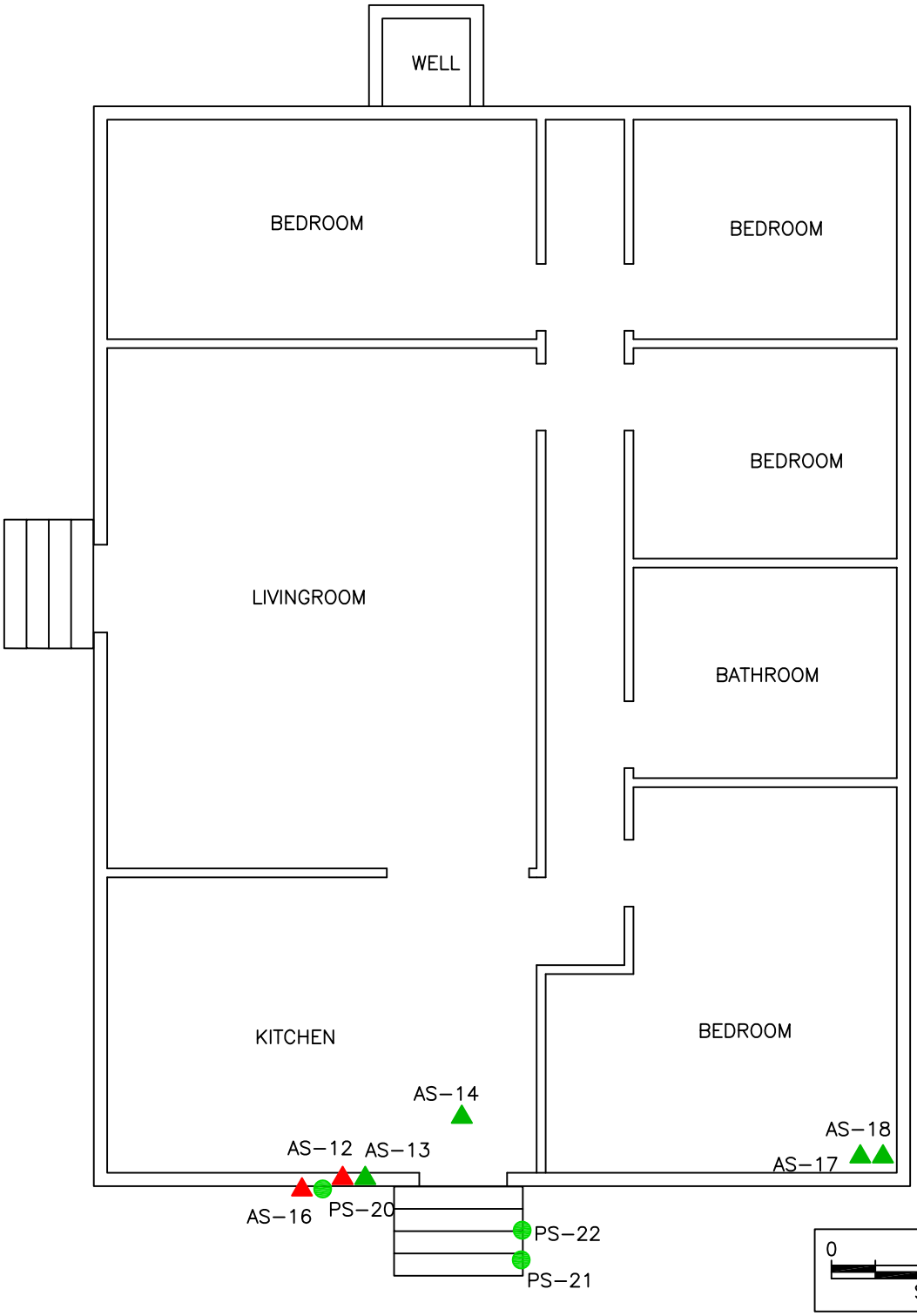
LEGEND

PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

AS-X ASBESTOS CONTAINING MATERIAL

GRID NORTH



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET # 112

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 8

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-112.dwg

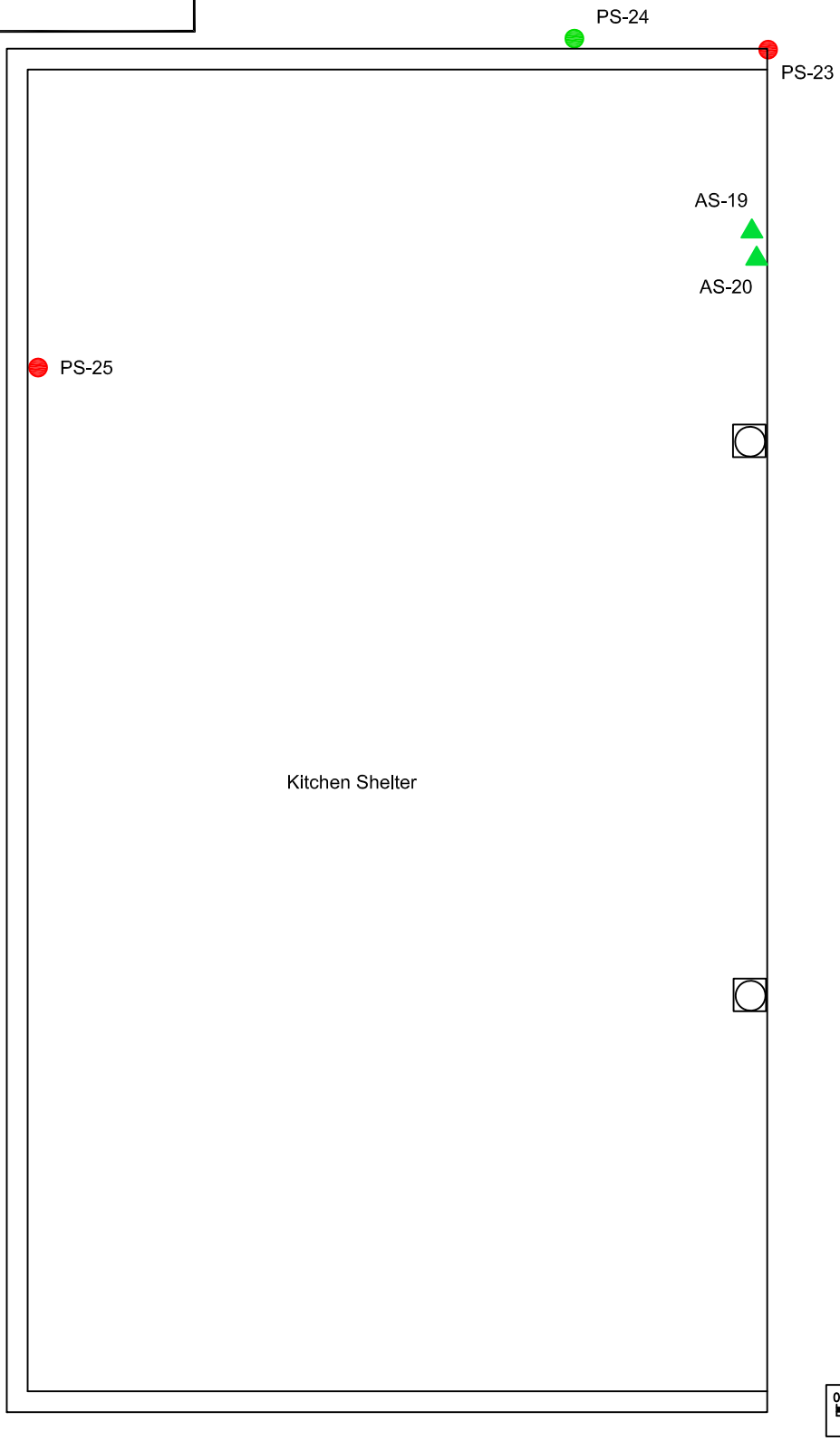
LEGEND

PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

PS-X LEAD CONTENT EXCEEDS 5000mg/kg

GRID NORTH



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET # 8087

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:50
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 9

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-8087.dwg

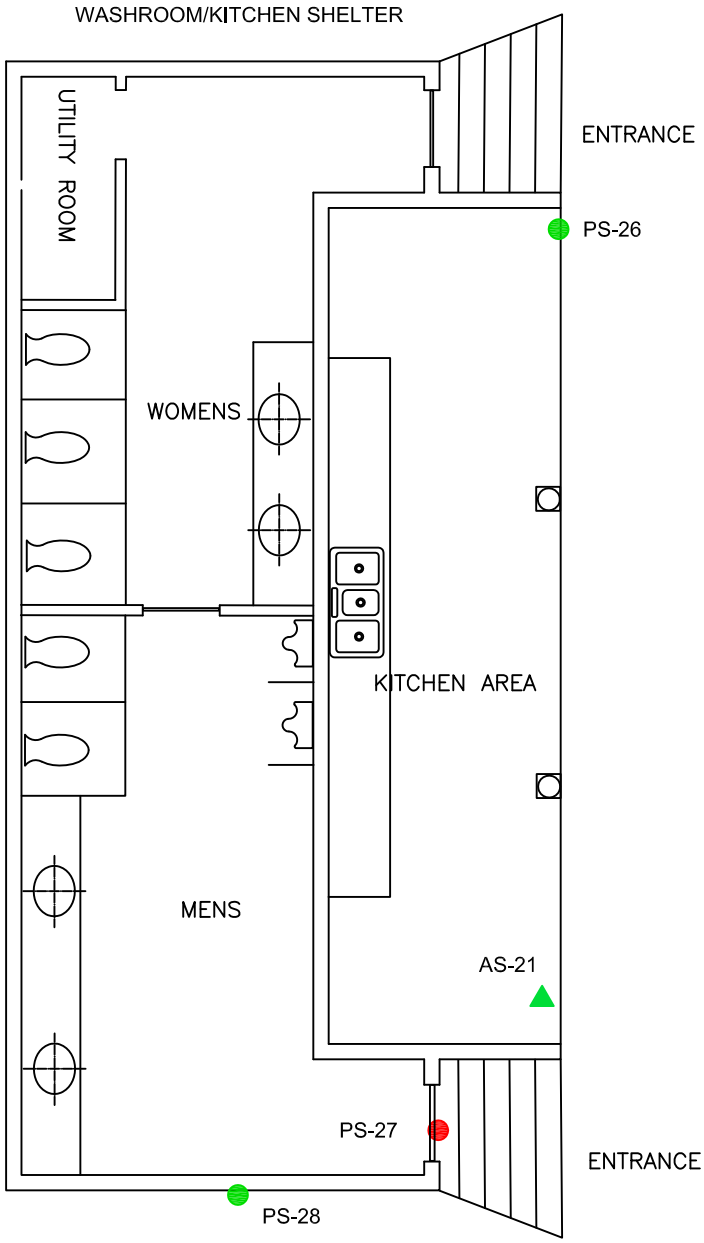
LEGEND

PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

PS-X LEAD CONTENT EXCEEDS 5000mg/kg

GRID NORTH



0 2.5m

SCALE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET # 8106

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 10

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-8106.dwg

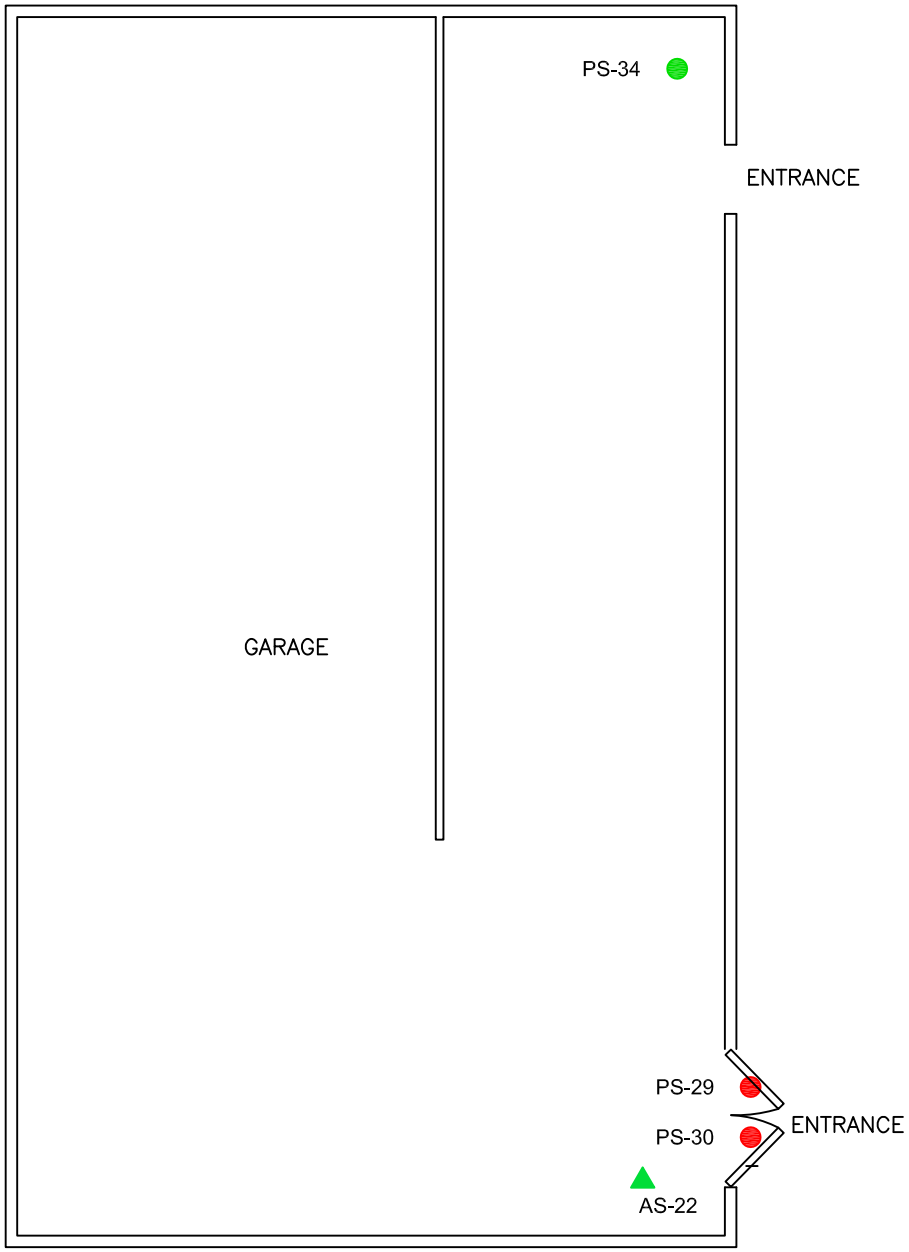
LEGEND

PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

PS-X LEAD CONTENT EXCEEDS 5000mg/kg

GRID NORTH



0 2.5m
SCALE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET # 118

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:100
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 11

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-118.dwg

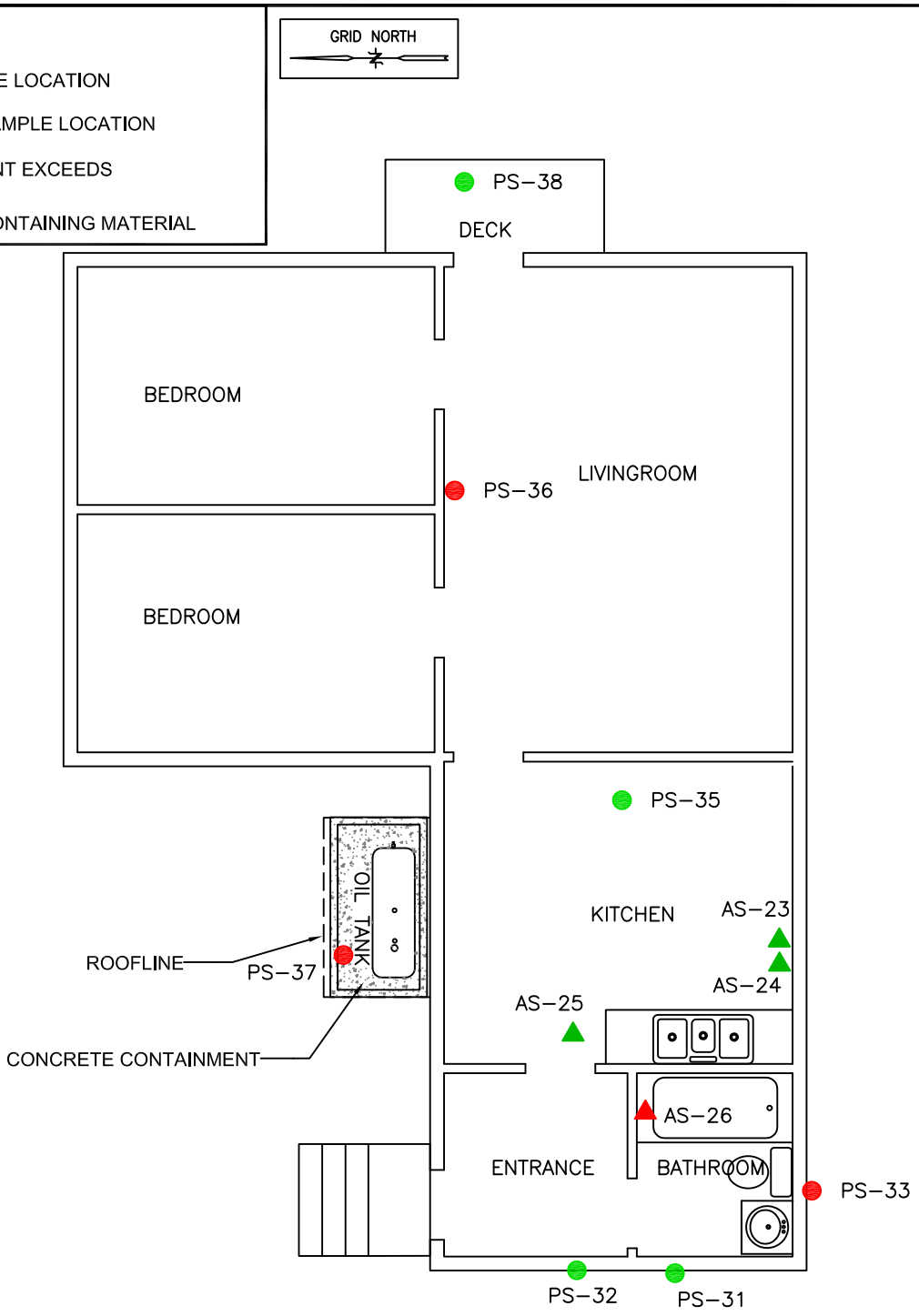
LEGEND

PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

PS-X LEAD CONTENT EXCEEDS 5000mg/kg

AS-X ASBESTOS CONTAINING MATERIAL



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET # 108

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 12

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-108.dwg

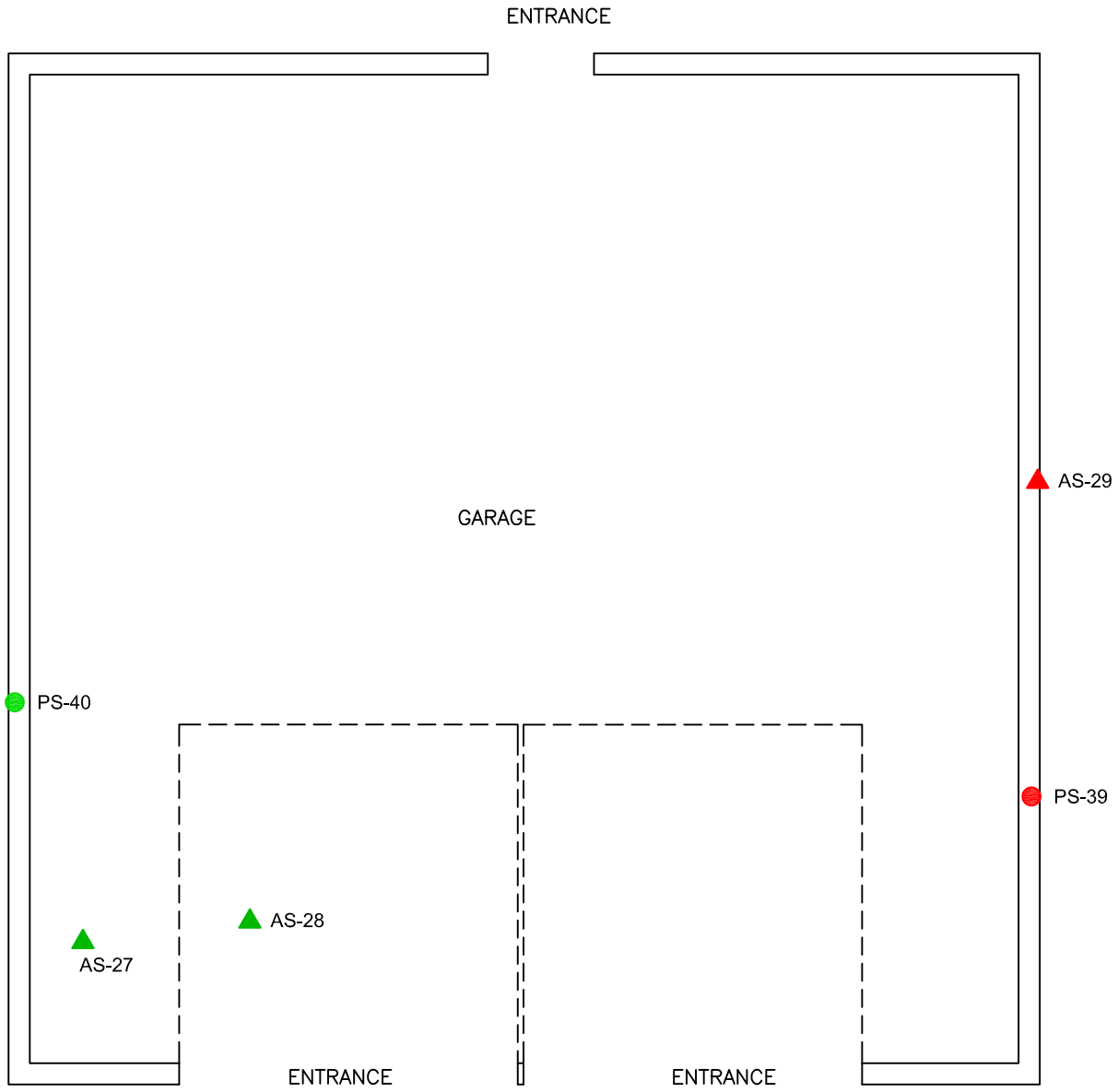
LEGEND

PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

AS-X ASBESTOS CONTAINING MATERIAL

GRID NORTH



0 2m

SCALE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET # 117

PRINCE EDWARD ISLAND NATIONAL PARK

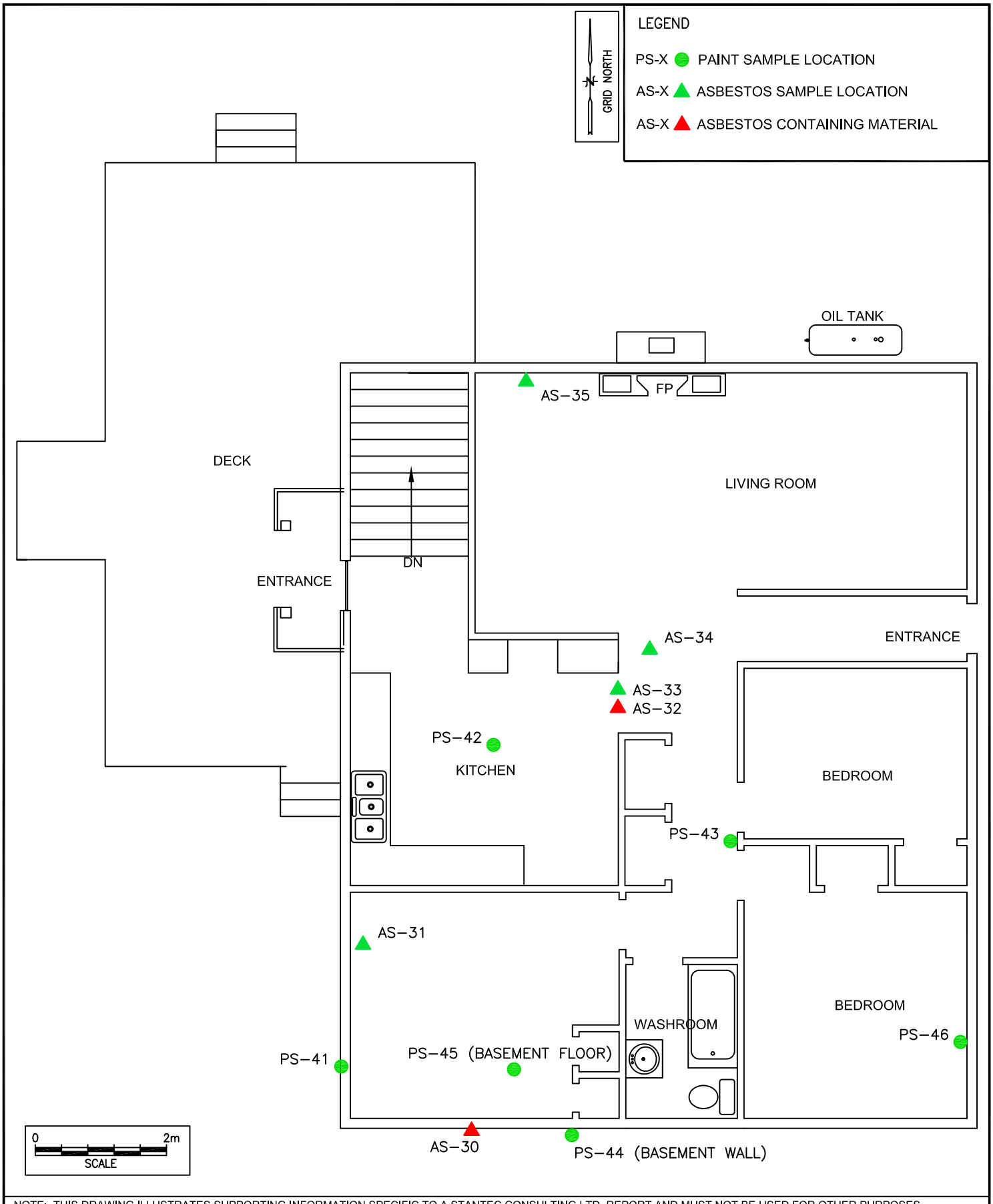
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 13

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-117bn.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET # 106
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 14

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-106.dwg

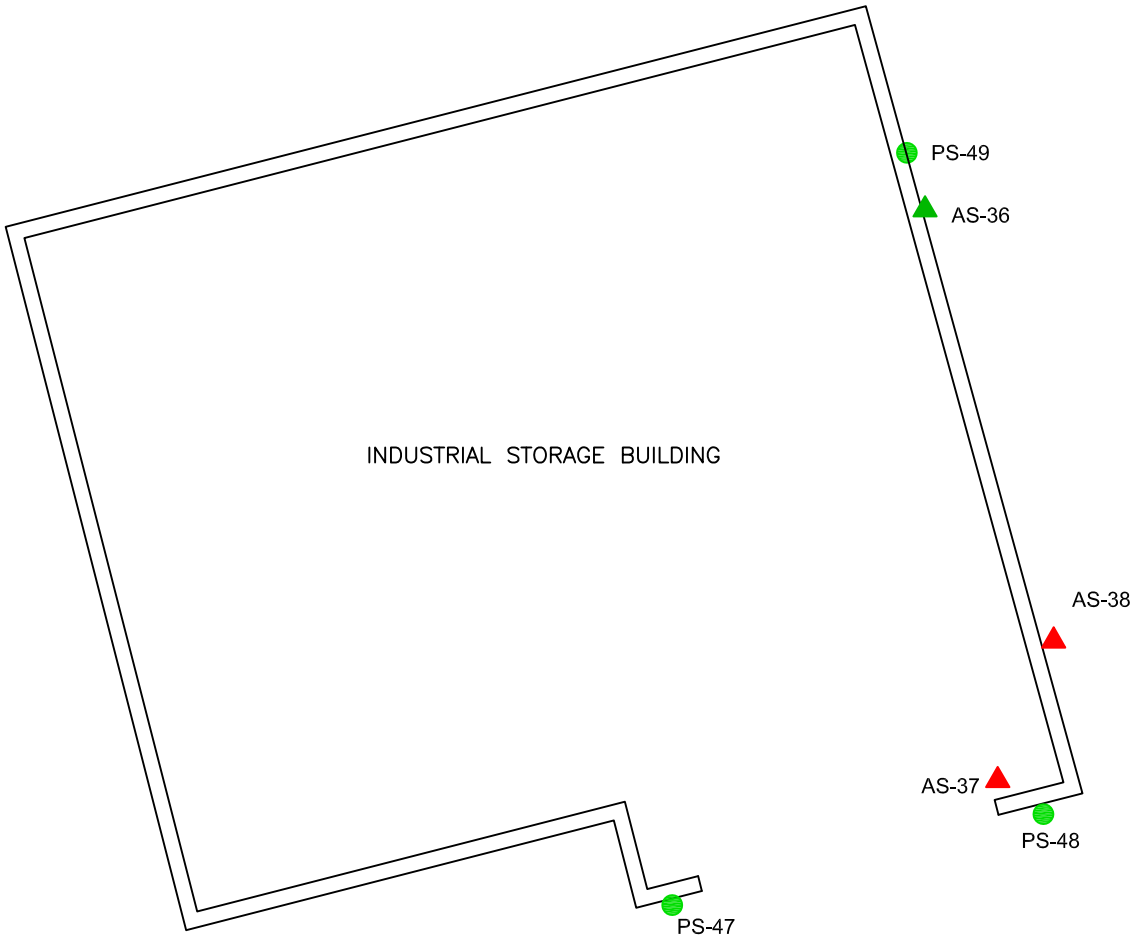
LEGEND

PS-X PAINT SAMPLE LOCATION

AS-X ASBESTOS SAMPLE LOCATION

AS-X ASBESTOS CONTAINING MATERIAL

GRID NORTH



0 2m

SCALE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA AND HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET # 307

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

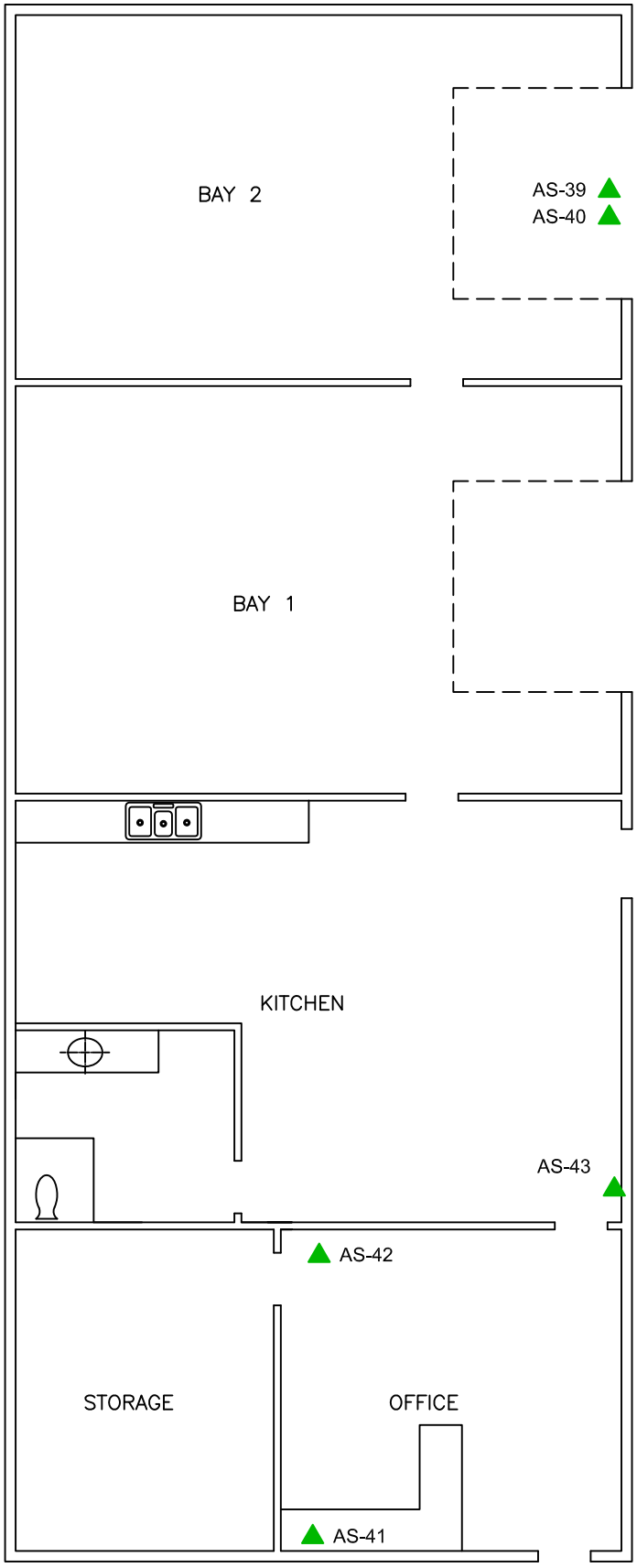
Dwg. No.: 15

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-307.dwg

LEGEND

AS-X ▲ ASBESTOS SAMPLE LOCATION



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET # 303 - TRADES BUILDING
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 16

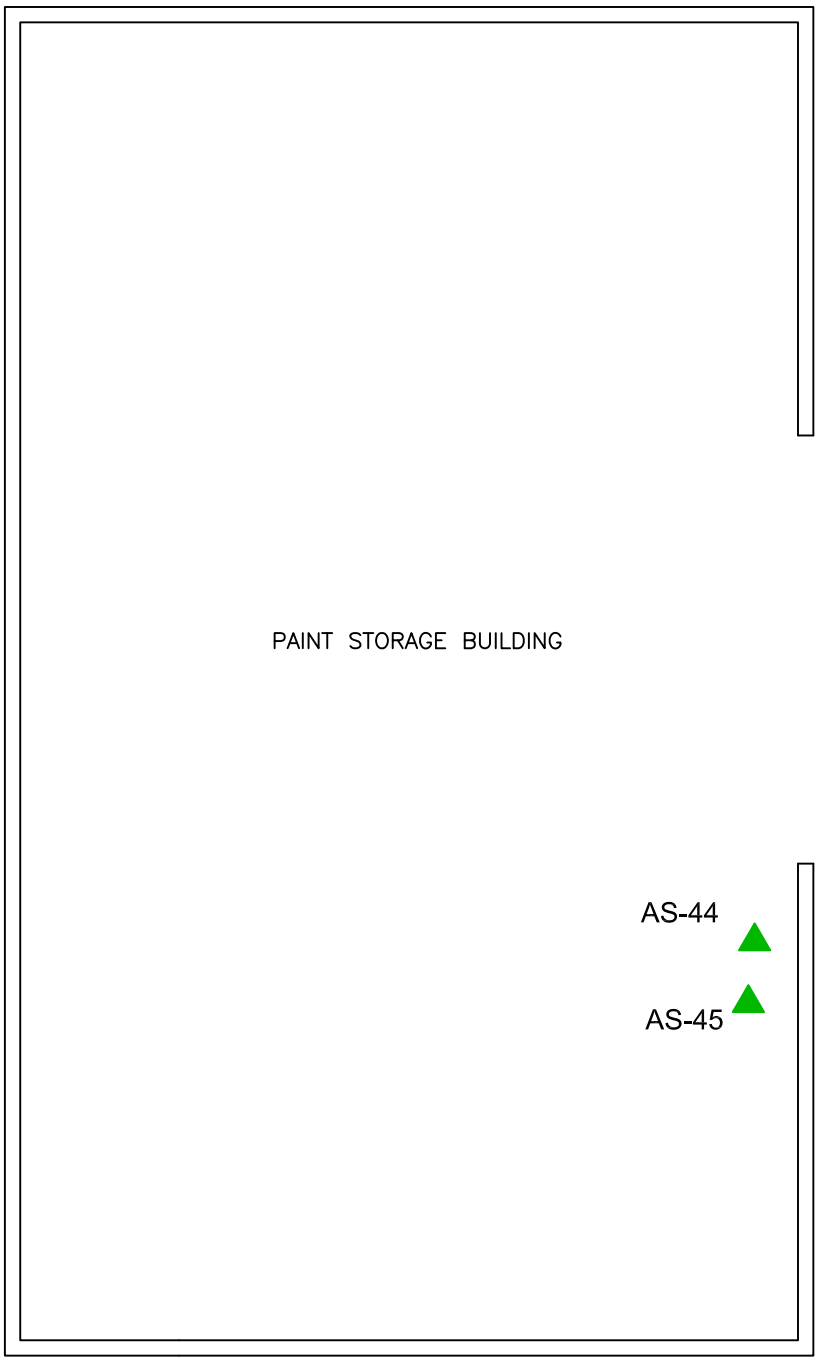
Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-303.dwg

LEGEND

AS-X ▲ ASBESTOS SAMPLE LOCATION

GRID NORTH



0 2m

SCALE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

SAMPLE LOCATION PLAN

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET #310

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:75
Date:	2010 09 22
Dwn. By:	D.RIMMER
App'd By:	DM

Dwg. No.: 17

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090.200.200-310.dwg

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1935 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 8087, 404 AND 112
PRINCE EDWARD ISLAND NATIONAL PARK

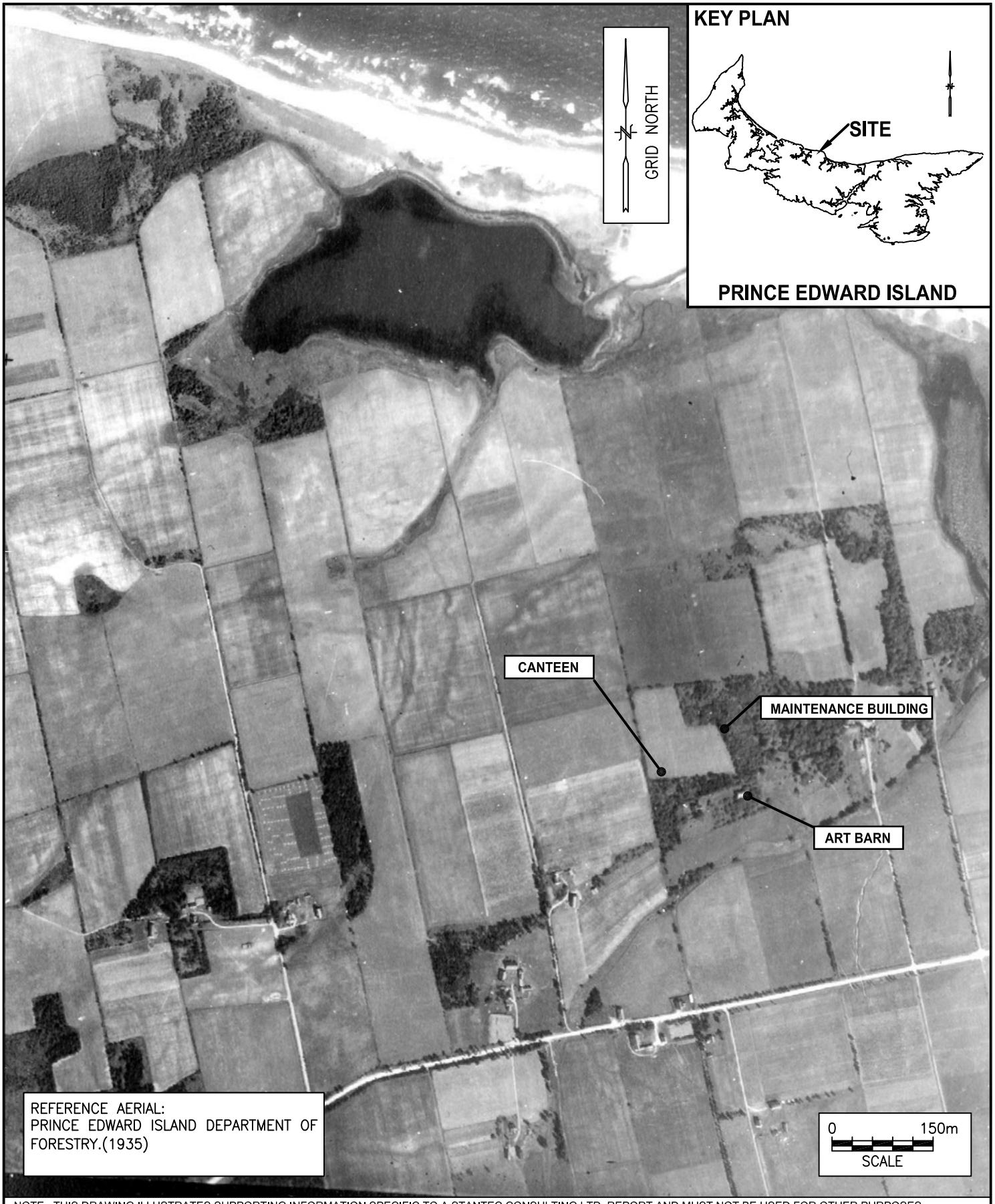
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 1

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090_200_200-1935 AERIAL-1.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1935 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH GROVE ASSET LOCATIONS
PRINCE EDWARD ISLAND NATIONAL PARK

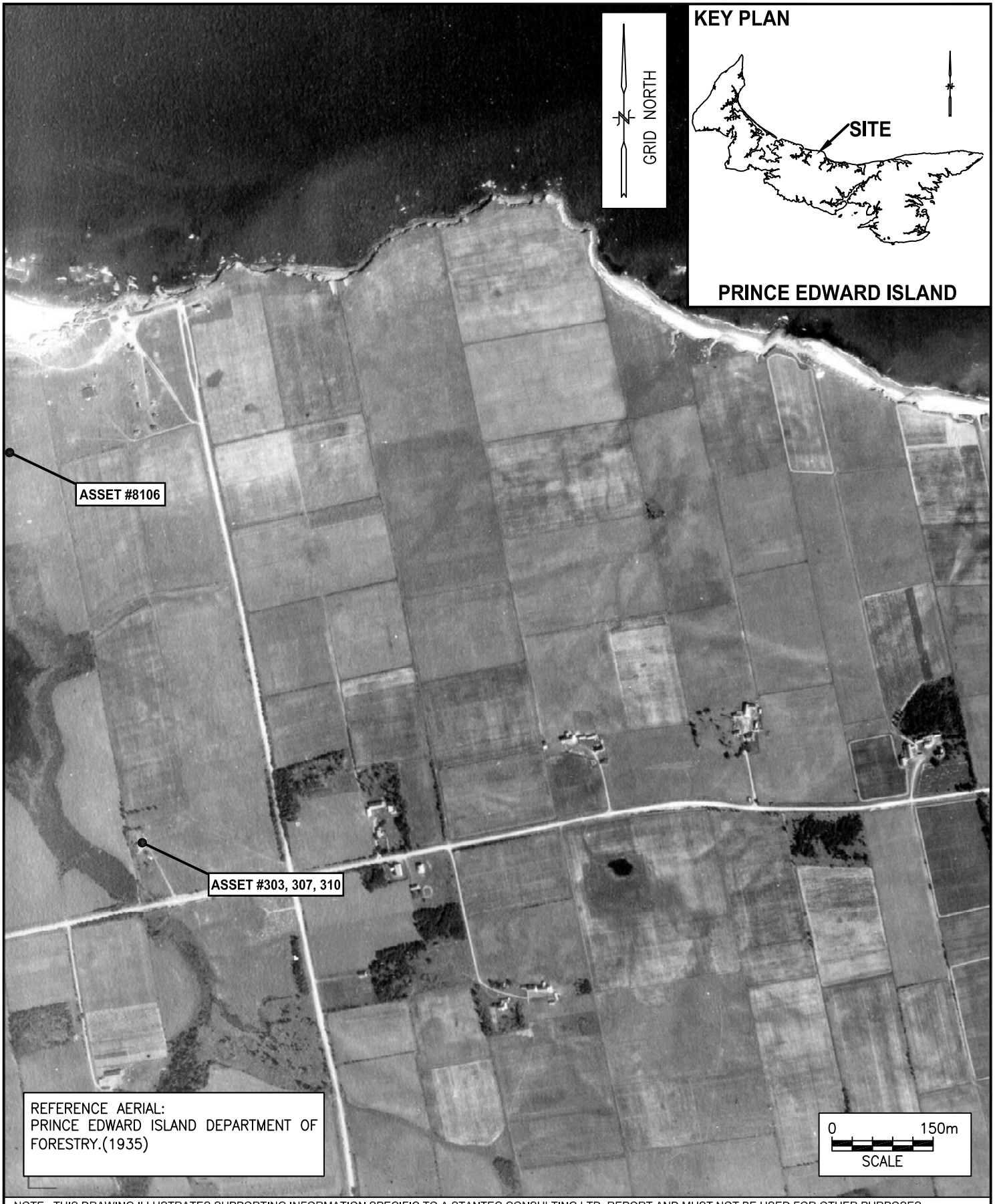
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 2

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090_200_200-1935 AERIAL-2.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1935 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 8106, 303, 307 AND 310
PRINCE EDWARD ISLAND NATIONAL PARK

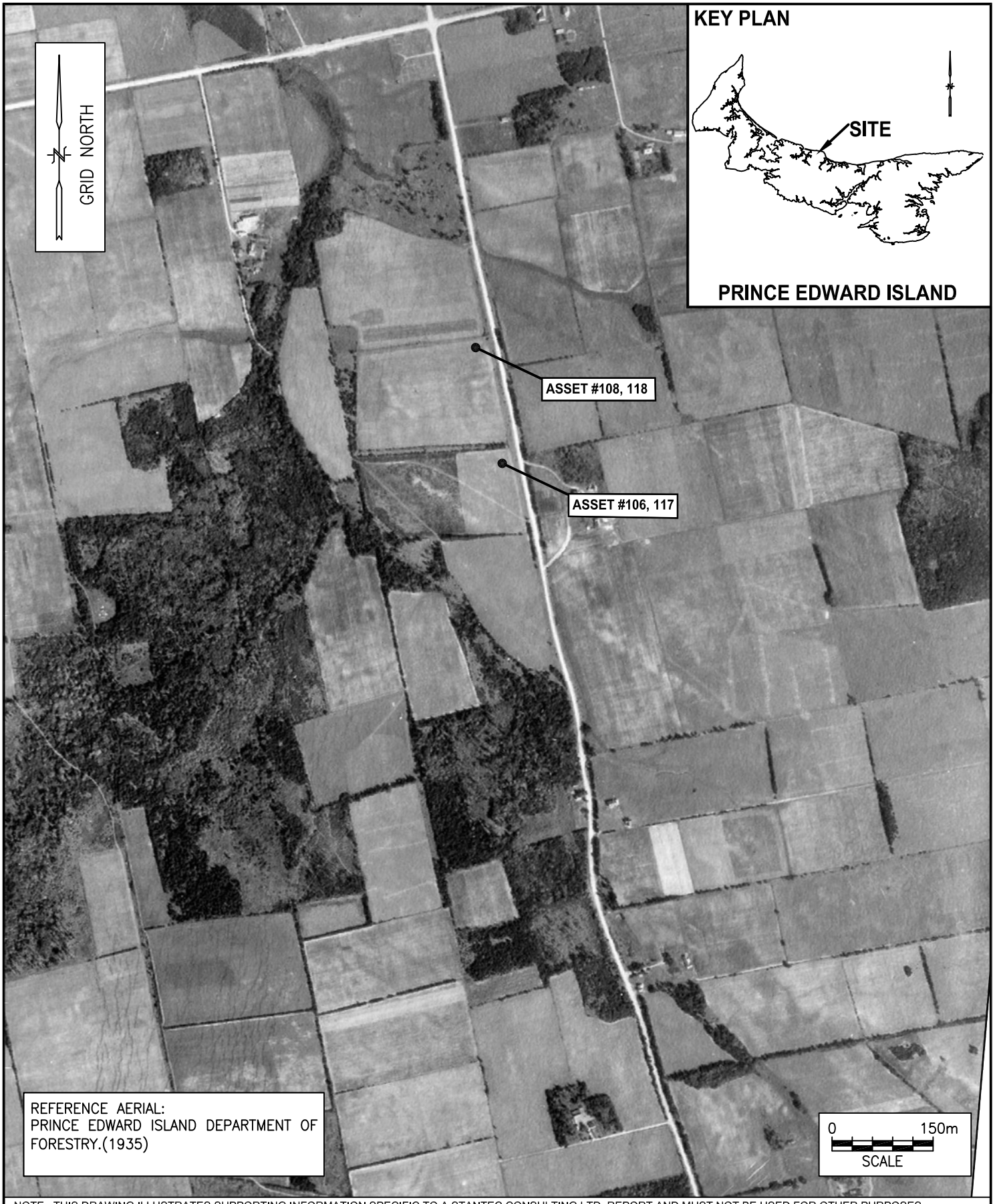
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 3

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090_200_200-1935 AERIAL-3.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1935 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 118, 108, 117 AND 106
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 4

Stantec

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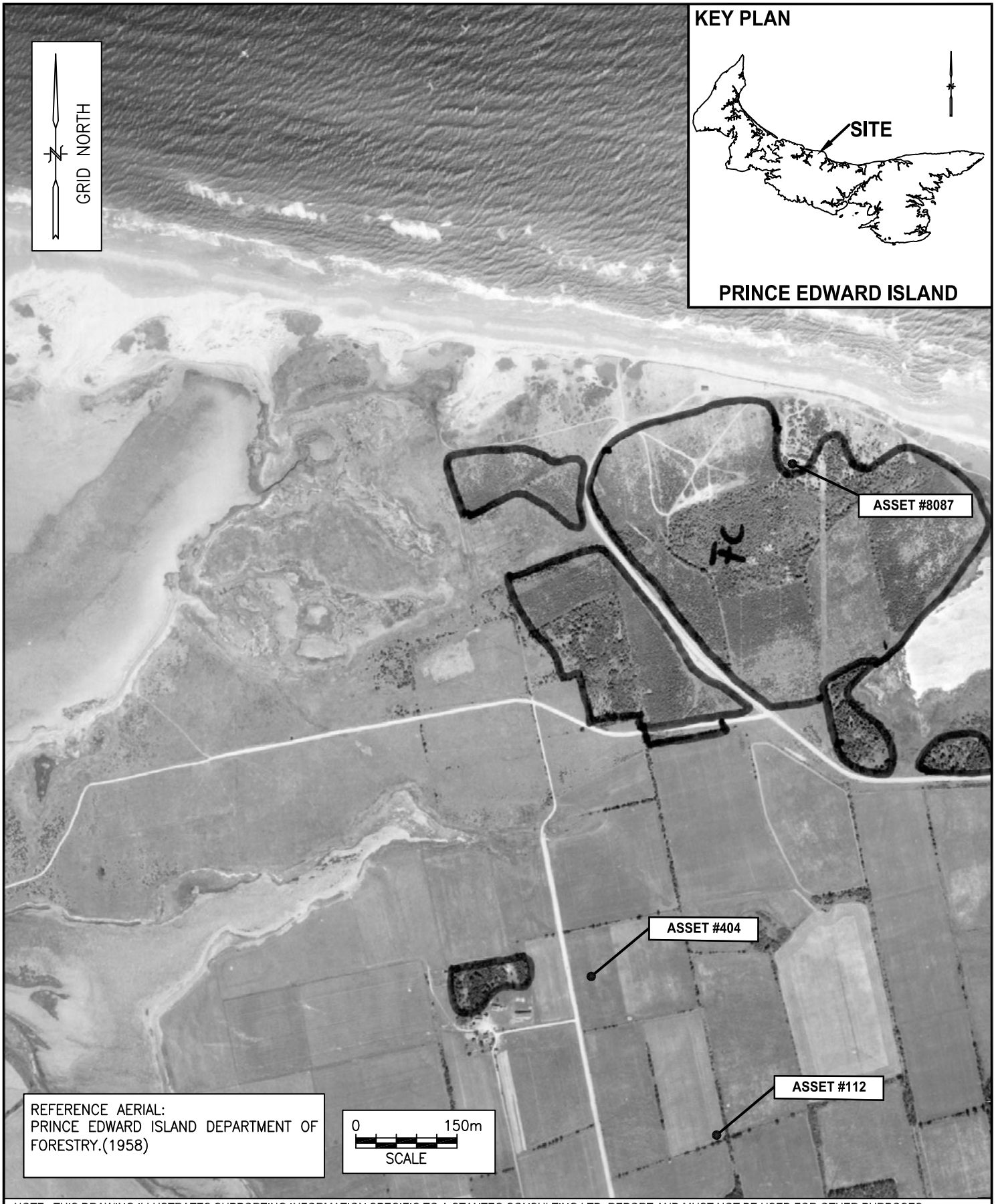


NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1958 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 8087, 404 and 112
PRINCE EDWARD ISLAND NATIONAL PARK

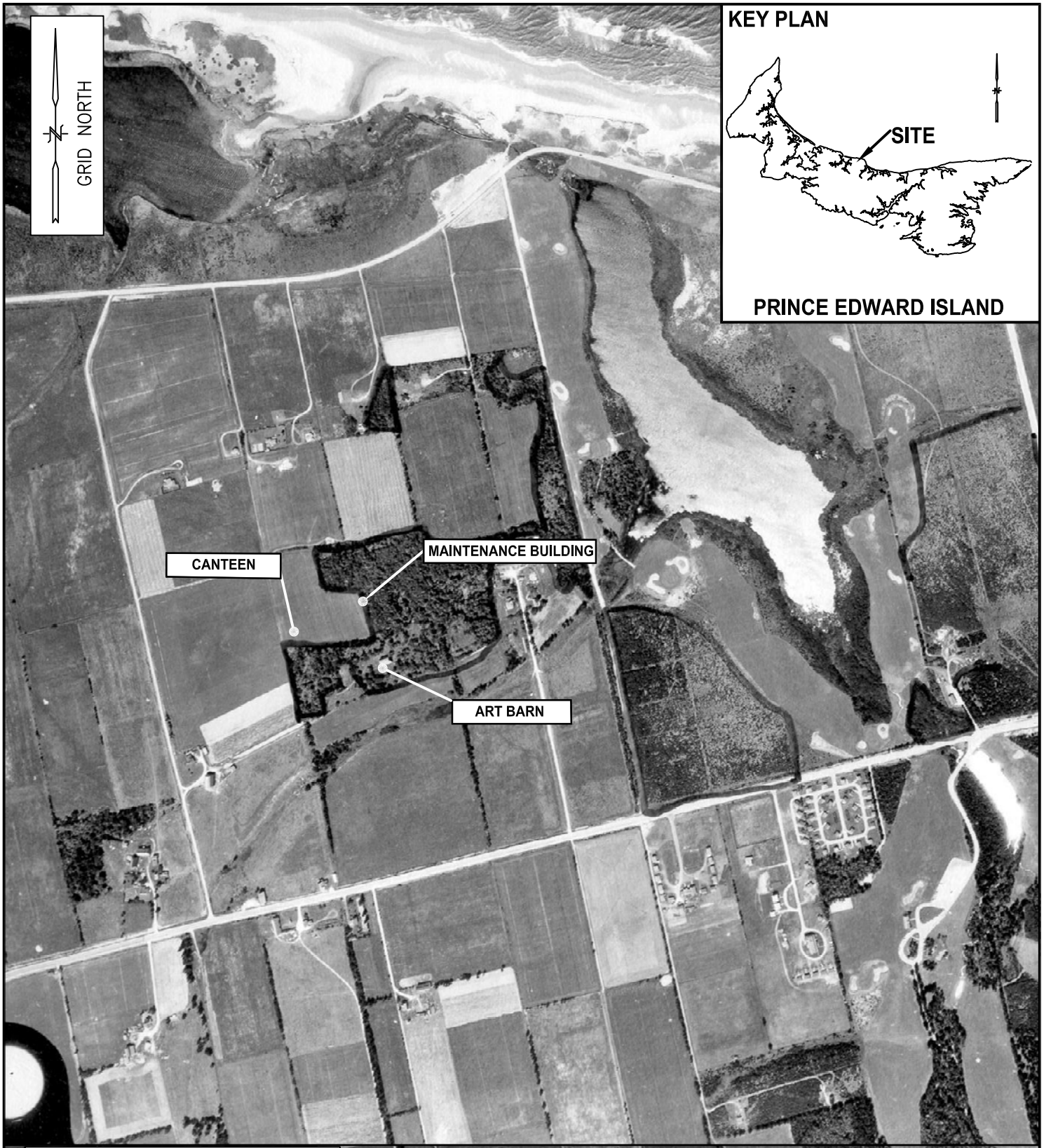
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 5

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090_200_200-1958 AERIAL-5.dwg



REFERENCE AERIAL:
PRINCE EDWARD ISLAND DEPARTMENT OF FORESTRY.(1958)

0 150m
SCALE

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1958 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH GROVE ASSET LOCATION
PRINCE EDWARD ISLAND NATIONAL PARK

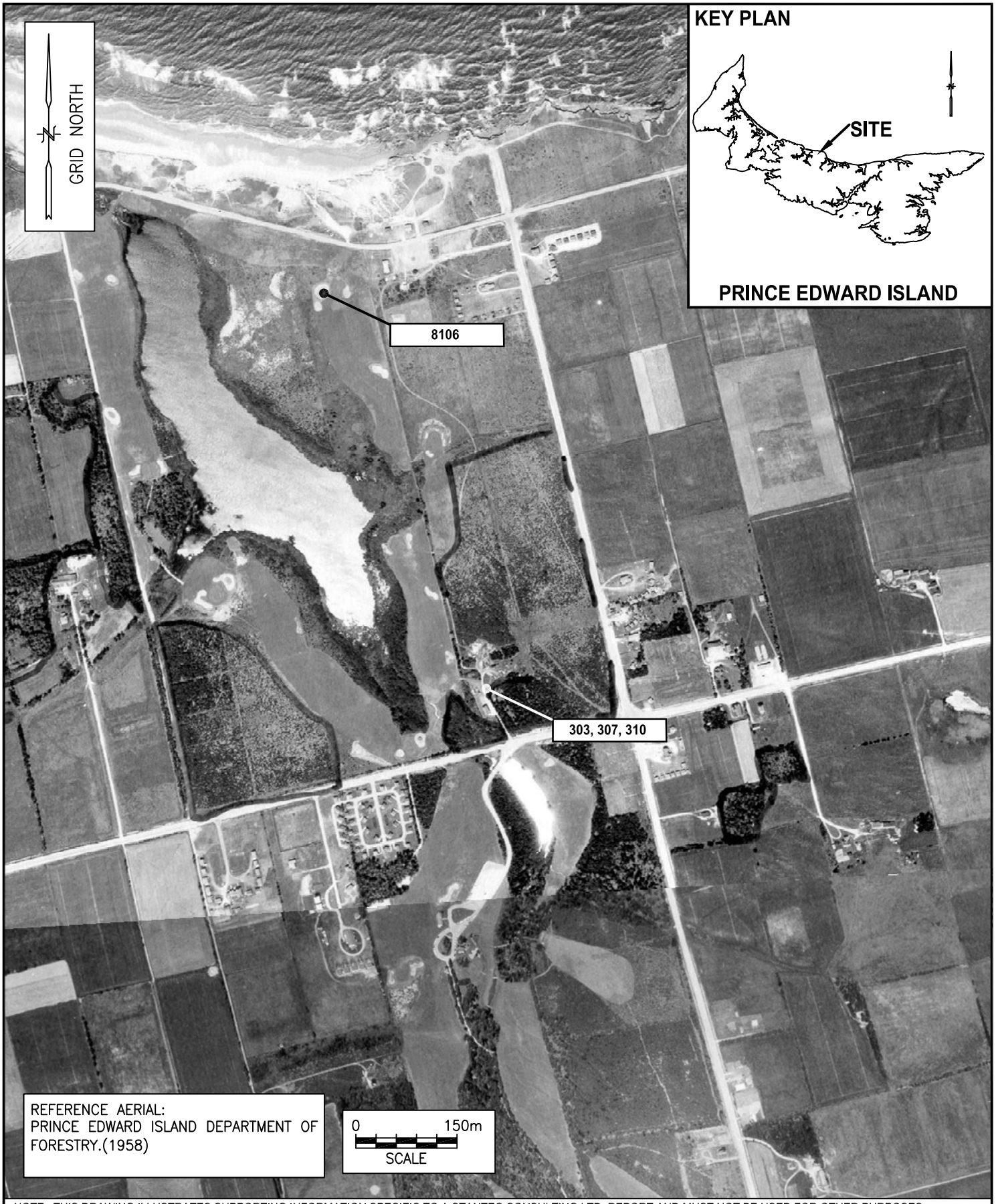
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 6

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090_200_200-1958 AERIAL-6.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1958 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATION 8106, 303, 307 AND 310
PRINCE EDWARD ISLAND NATIONAL PARK

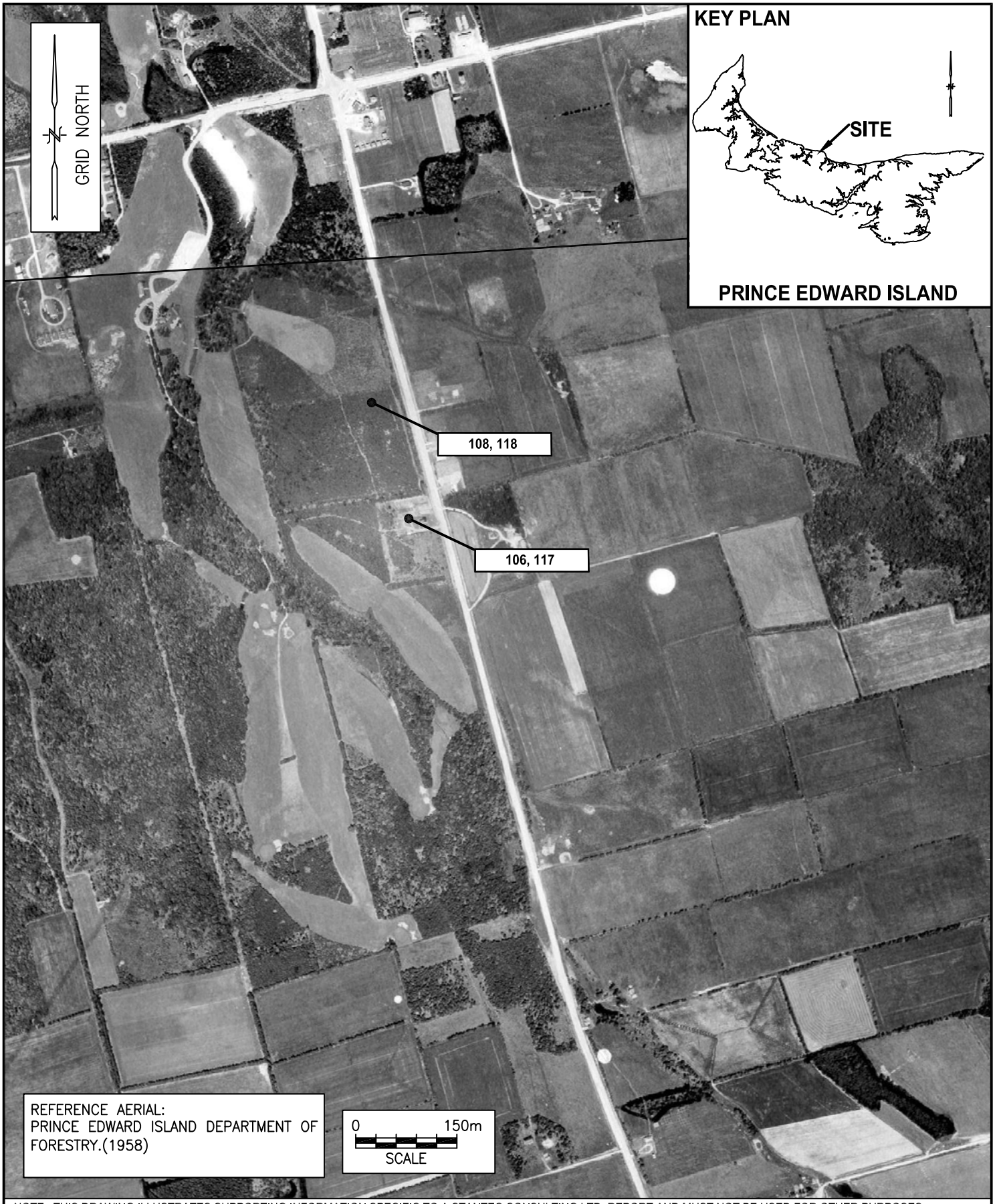
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 7

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090_200_200-1958 AERIAL-7.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1958 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 118, 108, 117 AND 106
PRINCE EDWARD ISLAND NATIONAL PARK

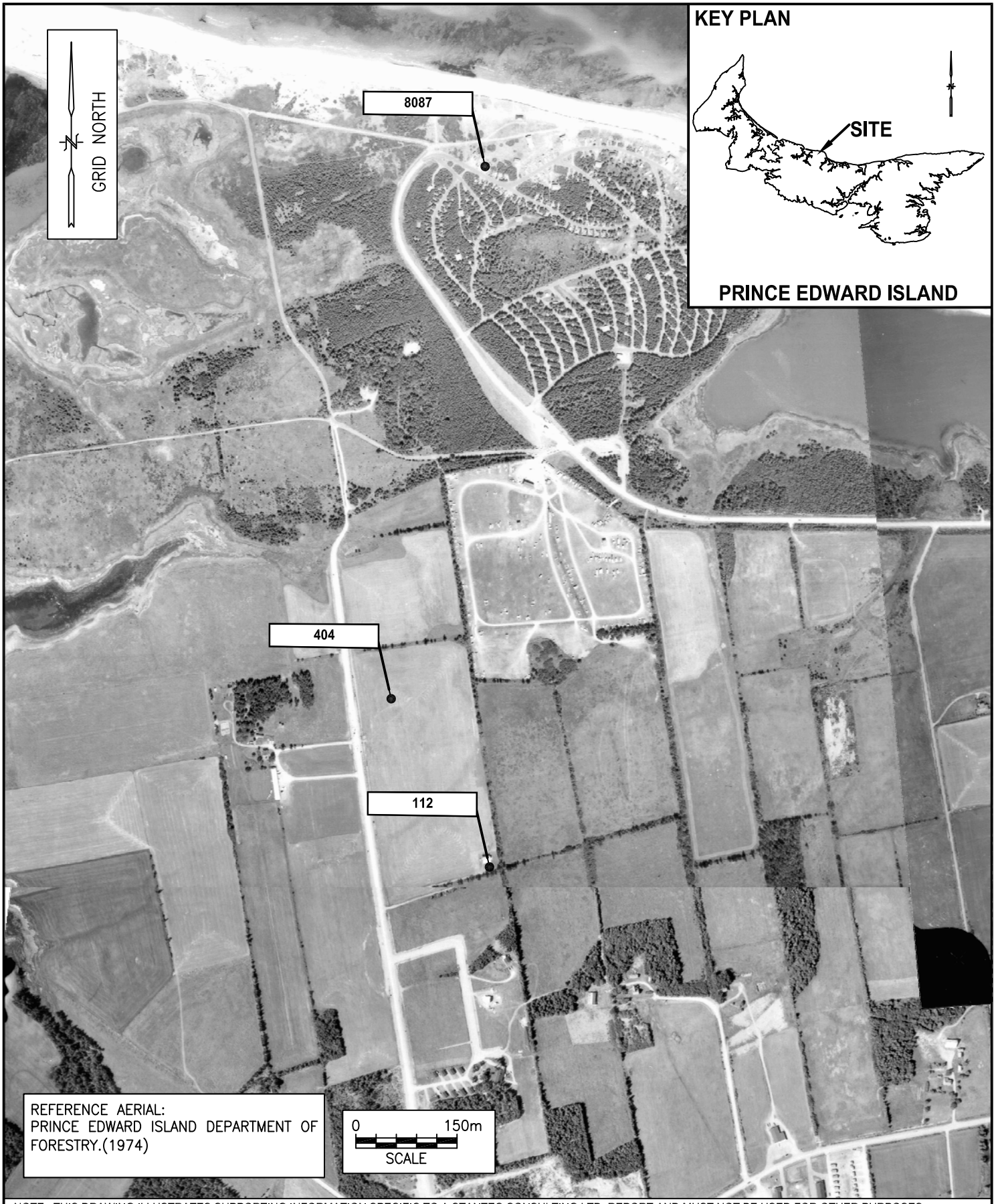
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 8

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090_200_200-1958 AERIAL-8.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1974 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 8087, 404 AND 112
PRINCE EDWARD ISLAND NATIONAL PARK

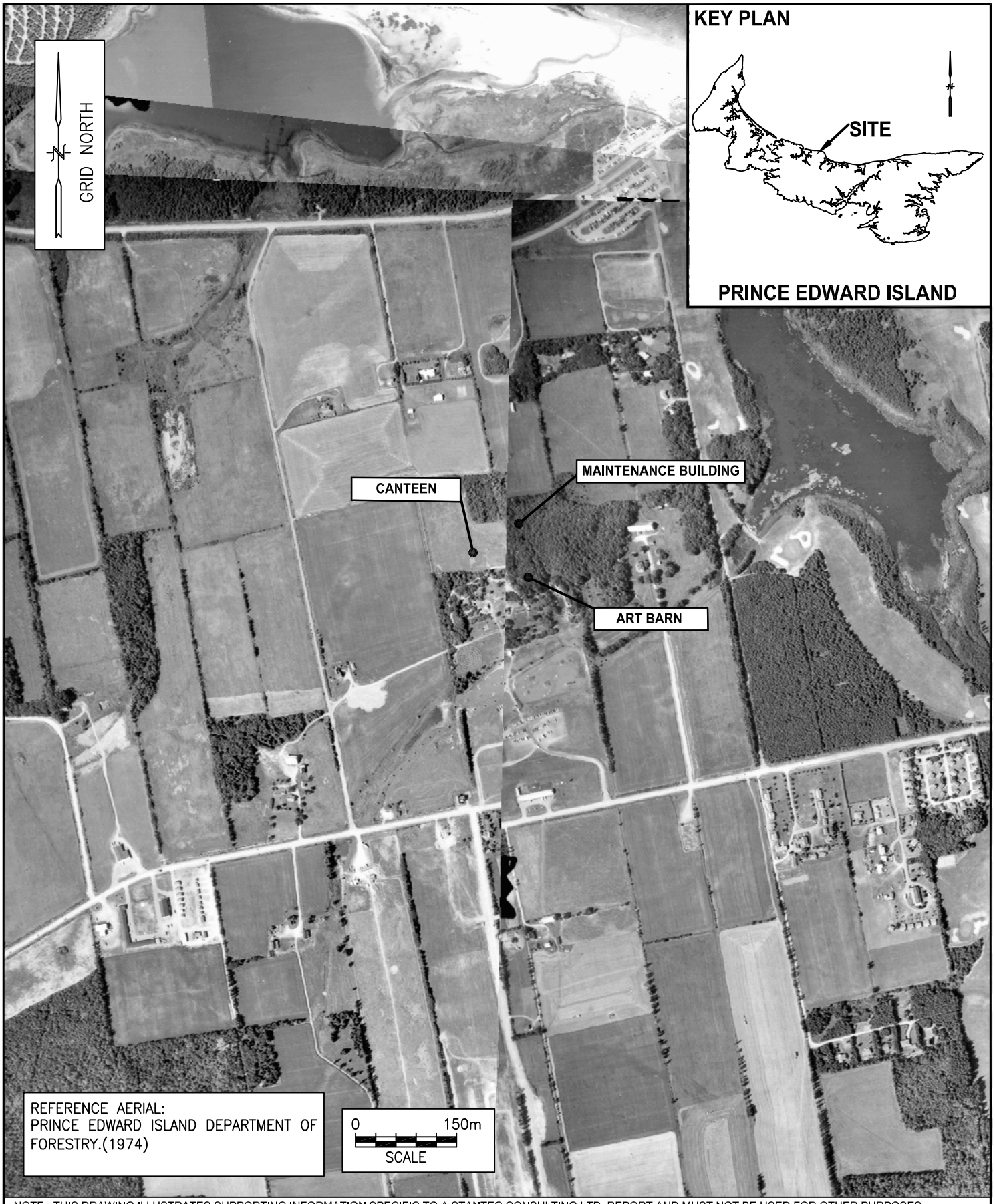
Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 9

Stantec

U:\z Cadd\9XXXX\121711090_200_200\121711090_200_200-1974 AERIAL-9.dwg



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1974 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH GROVE ASSET LOCATIONS
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 10

Stantec

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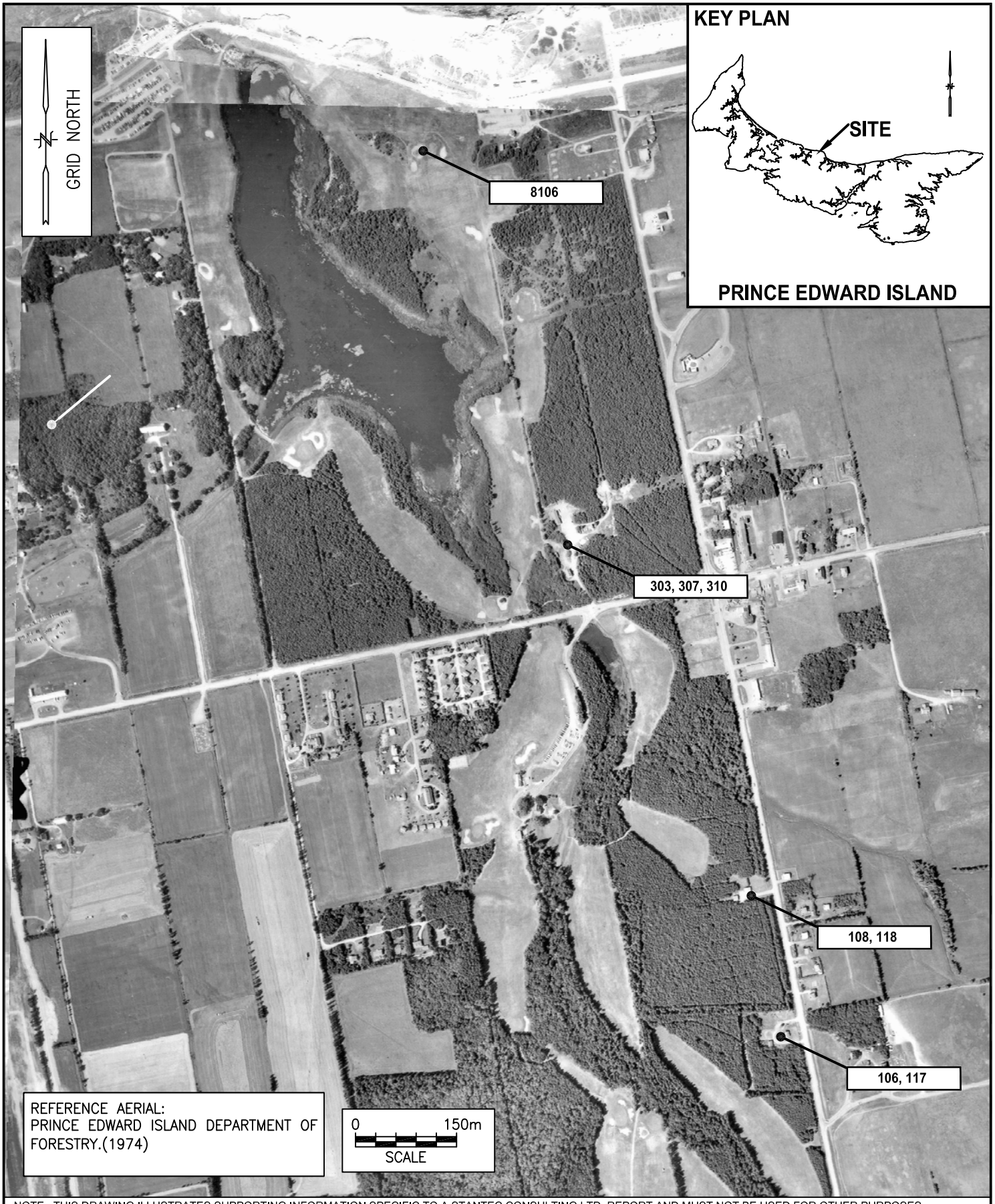

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1974 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 118, 108, 117, 106, 303, 307, 310 AND 8106
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 11

Stantec

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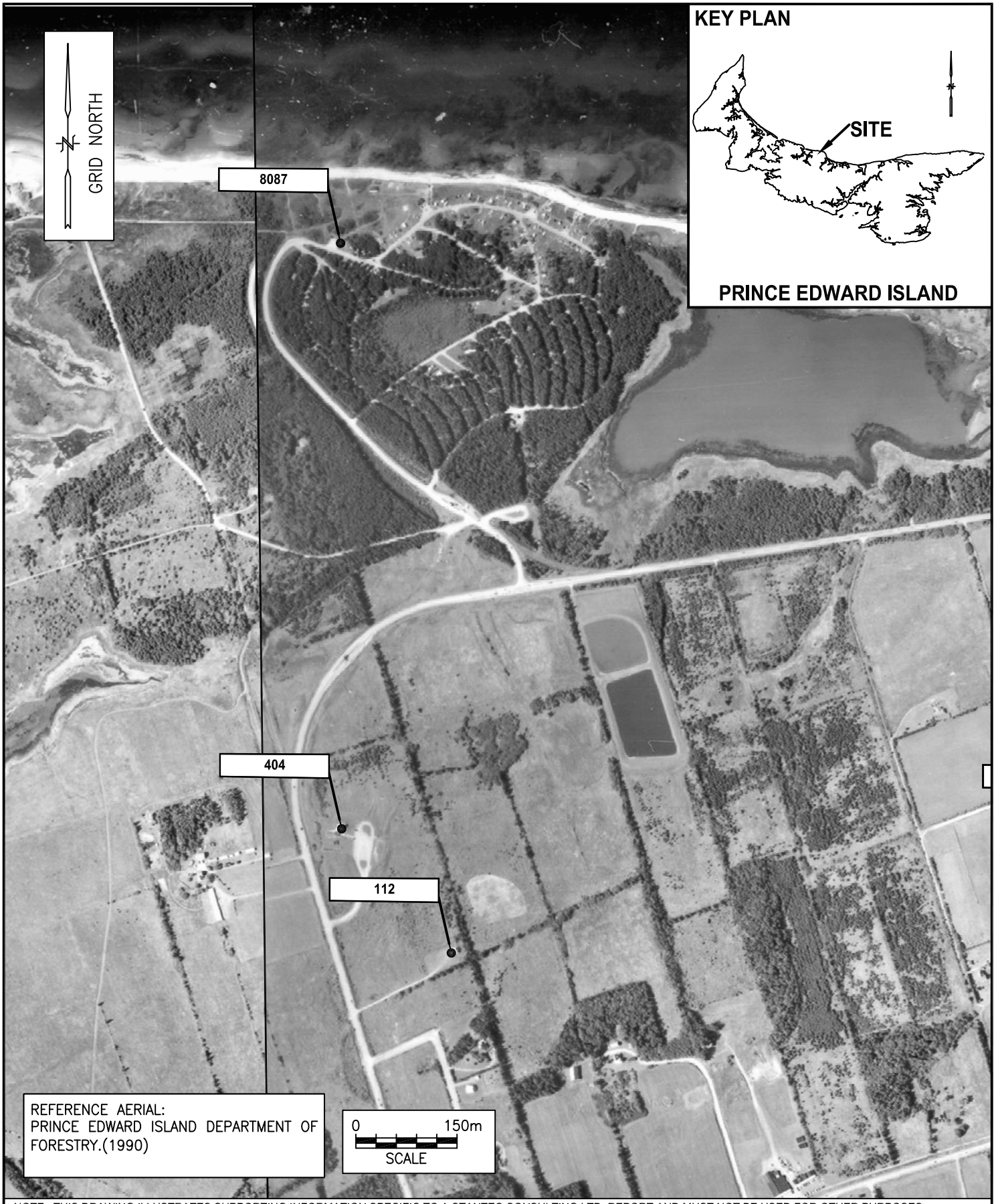

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1990 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 8087, 404 AND 112
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 12

Stantec

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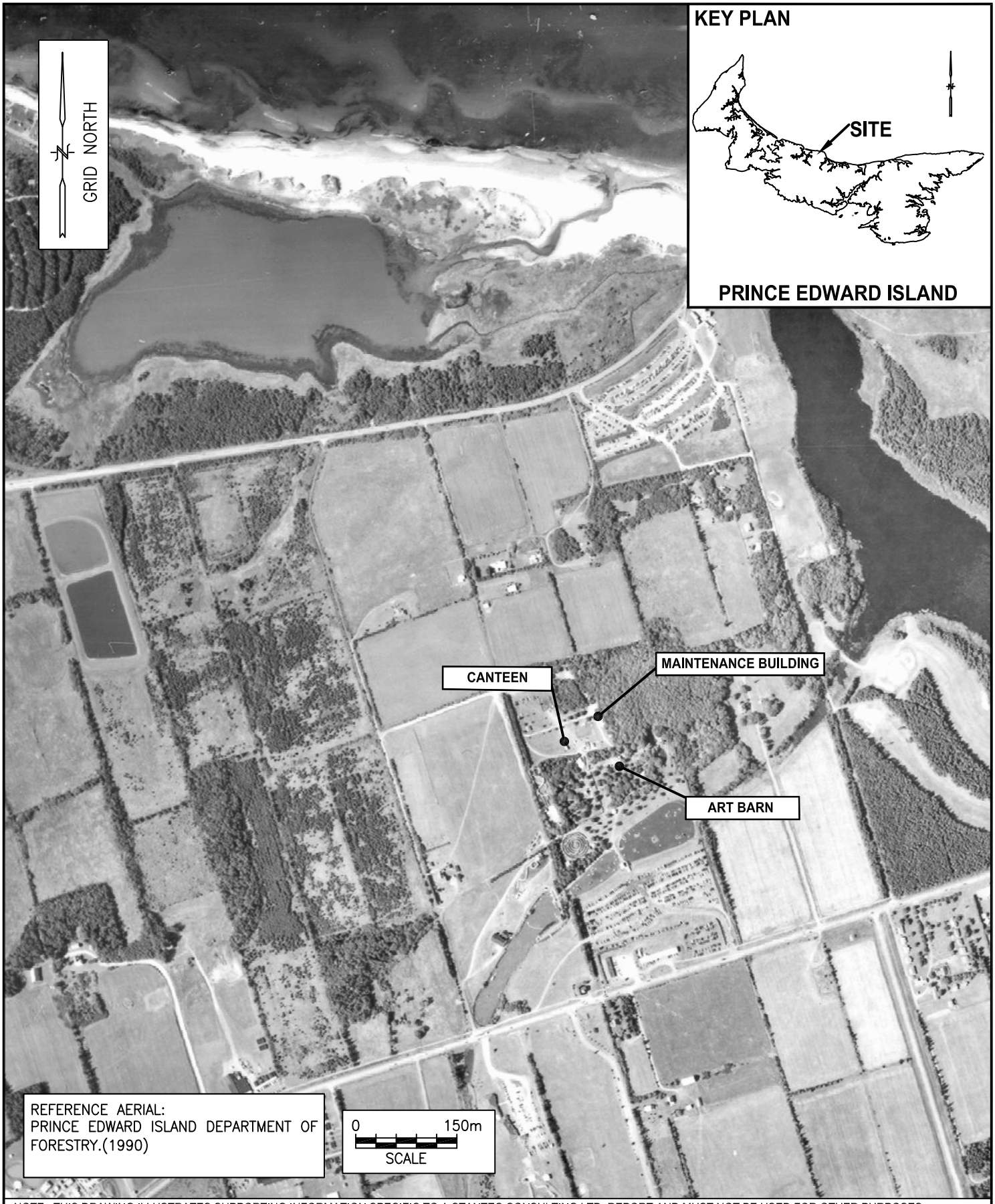

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1990 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH GROVE ASSET LOCATIONS
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 13

Stantec

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NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

1990 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET LOCATIONS 106, 108, 117, 118, 303, 307, 310 AND 8106

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 14

Stantec

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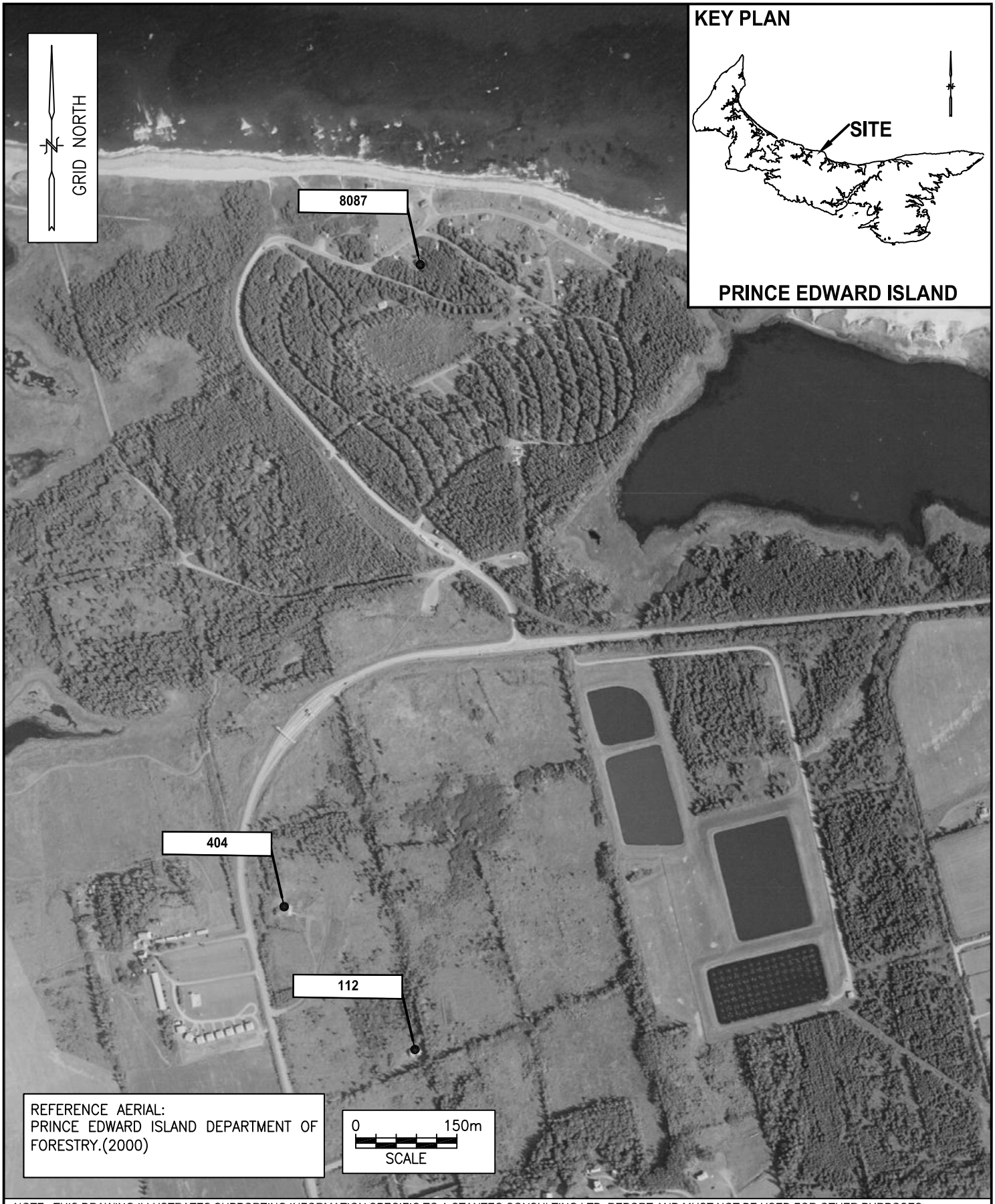

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

2000 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH ASSET LOCATIONS 8087, 404 AND 112
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 15

Stantec

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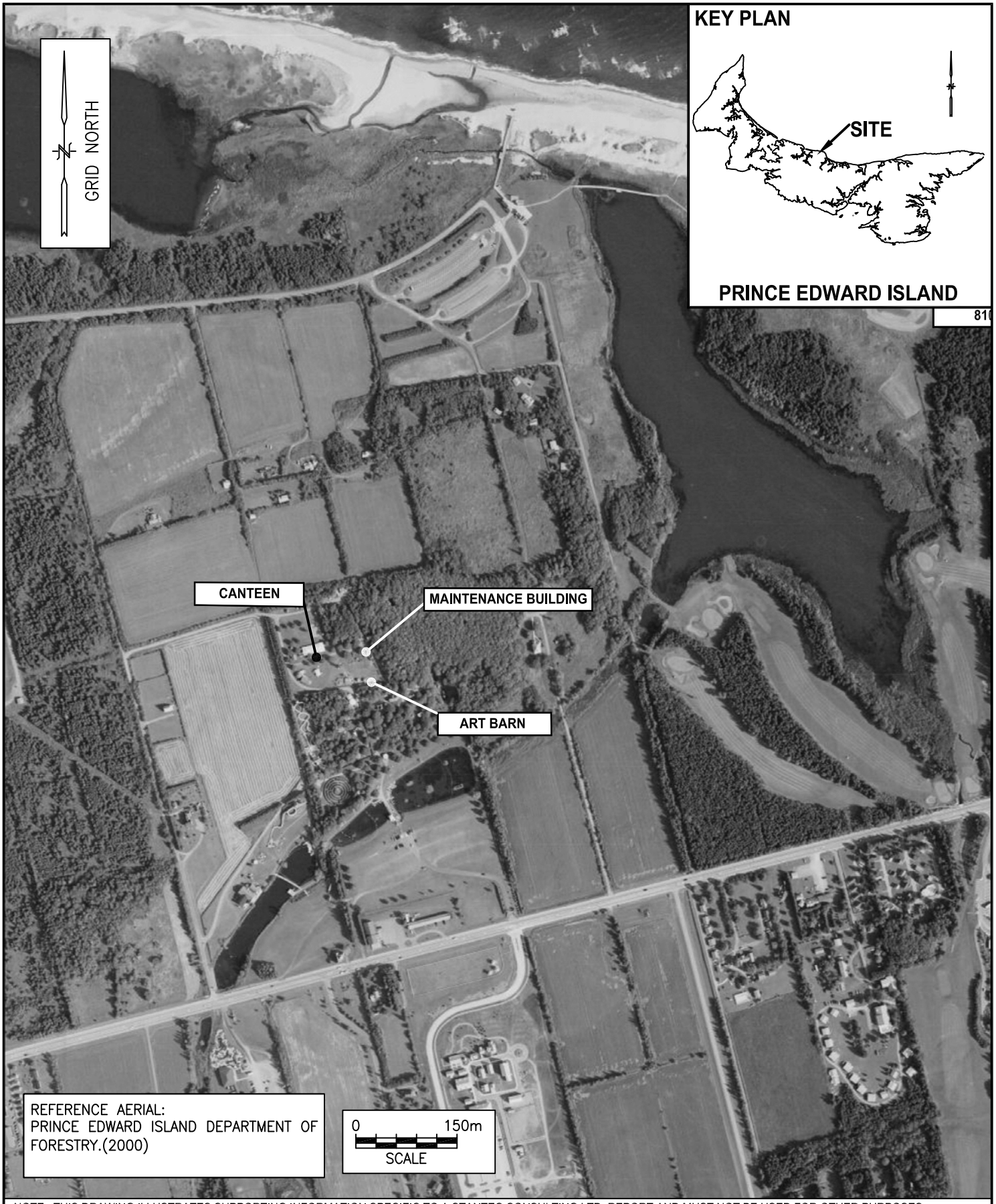

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2000 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY
CAVENDISH GROVE ASSET LOCATIONS
PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 16

Stantec

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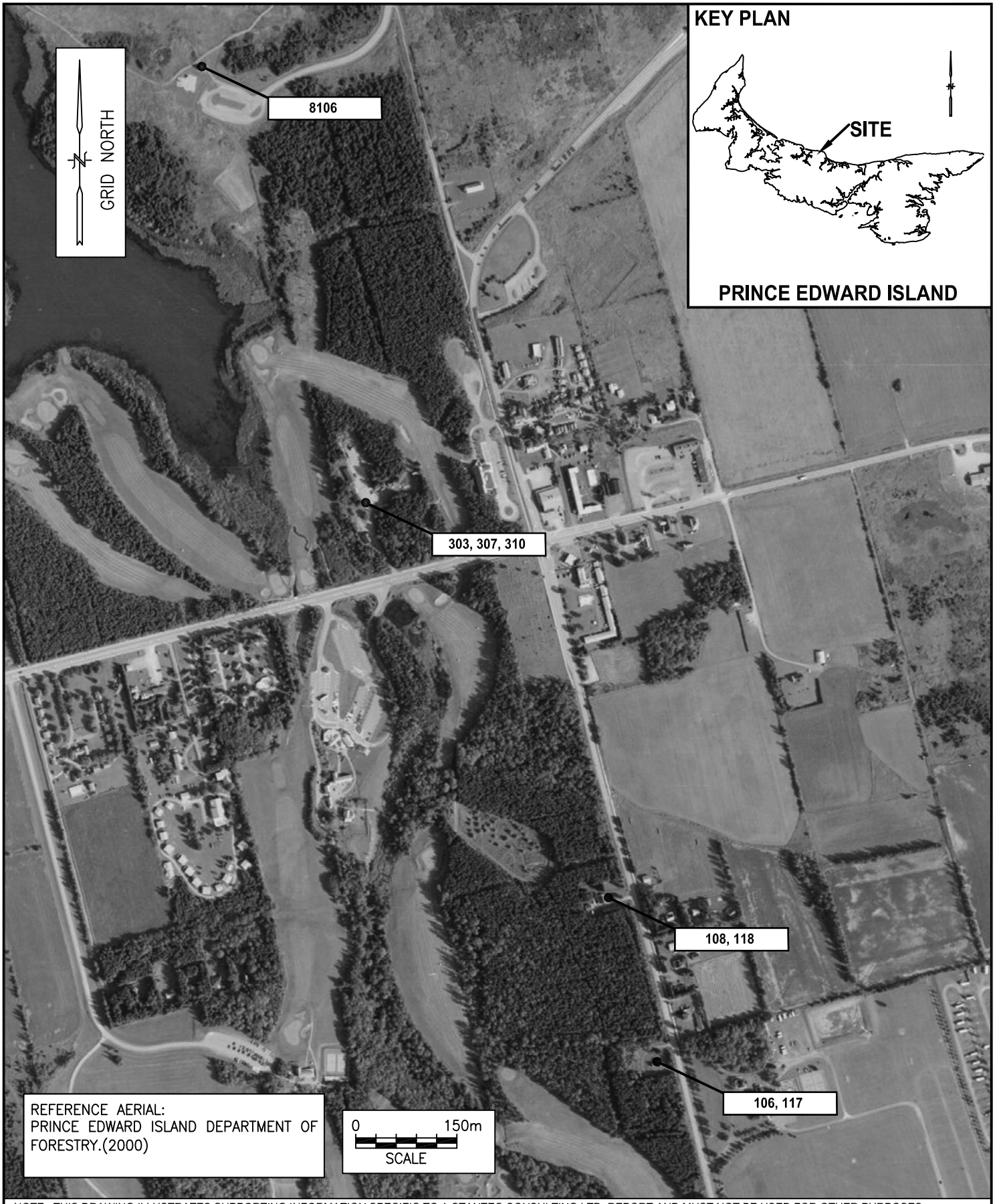

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2000 AERIAL PHOTOGRAPH

PHASE I ESA & HAZARDOUS MATERIALS SURVEY

CAVENDISH ASSET LOCATIONS 106, 108, 117, 118, 303, 307, 310 AND 8106

PRINCE EDWARD ISLAND NATIONAL PARK

Client: PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

Job No.:	121711090
Scale:	1:8000
Date:	2010 09 29
Dwn. By:	D. RIMMER
App'd By:	DM

Aerial. No.: 17

Stantec

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