Record filed by
The City of Charlottetown
In the matter of
Louise Aalders v. City of Charlottetown
(Appeal #LA25011)

Submitted by Melanie McKenna
on behalf of the City of Charlottetown

December 5, 2025

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17	March 13, 2025	Development Agreement
18	July 21 to 24, 2025	Email exchange between Louise Aalders and David Gundrum attaching Site Mobilization Plan
19	August 8, 2025	Email from Louise Aalders to Mayor of Charlottetown et al. attaching two photographs
20	August 14, 2025	Permit No. WWBZ-2025-0165 Buffer Zone Activity Permit
21	August 22, 2025	Permit No. WWBZ-2025-0165 Watercourse/Wetland and Buffer Zone Activity Permit Modification
22	August 25, 2025	Email from Louise Aalders to David Gundrum et al. attaching three photographs
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MARINE BENTHIC SURVEY, FISHERY AND SARA KNOWLEDGE OF THE BANKS HAVILAND STREET DEVELOPMENT WATER LOT, CHARLOTTETOWN HARBOUR, QUEENS COUNTY, PRINCE EDWARD ISLAND

PROJECT NO. GR2029

GRANVILLE RIDGE CONSULTING INC

PROJECT NO. GR2029

MARINE BENTHIC SURVEY, FISHERY AND SARA KNOWLEDGE OF THE BANKS HAVILAND STREET DEVELOPMENT WATER LOT, CHARLOTTETOWN HARBOUR, QUEENS COUNTY, PRINCE EDWARD ISLAND

PREPARED FOR

APM MacLean

AND

FISHERIES AND OCEANS CANADA
ECOSYSTEM MANAGEMENT
FISHERIES PROTECTION PROGRAM

PREPARED BY

GRANVILLE RIDGE CONSULTING
484 TAYLOR ROAD
NORTH GRANVILLE, PE C0A 1E0

MARCH 15, 2021

Executive Summary

Granville Ridge Consulting Inc. (Granville Ridge) was contracted by APM MacLean to complete a Benthic Survey, Fishery and Species At Risk Act (SARA) Knowledge Program (BSFSKP) as a component study in support of environmental planning any future potential development of The Banks Haviland Street Development water lot in Charlottetown Harbour.

On December 16,17, 2020 divers laid out four lead lines on the water lot substrate study area of approximately 50 X 45m. Underwater video was taken along these transects and the video was reviewed/analyzed in 5m segments to document the substrate type and all flora and fauna observed.

Most of the water lot study area from shore to approximately 50 m offshore has eelgrass (*Zostera marina*) present on the silty sand bottom furthest offshore, but the bed extends into nearshore areas where the substrate is coarser. Near the shore, mainly within about 10 m, the substrate is coarse, typically containing gravel to cobble as well as sand, and the armor stone along the shore provides a sharp border and a habitat occupied by barnacles and occasionally encrusting organisms such as sponges. Oysters are relatively common throughout the sandy areas occupied by eelgrass.

The existing shoreline armor stone supports barnacle communities with a range of approximately 45% coverage at the toe of slope (0m) and a decreasing coverage towards the top of slope. Oysters and mussels are occasionally attached to the armor stone and are mostly limited to niches between the armor stones.

From the review of aquaculture and fisheries mapping the Haviland Development water lot is located in a prohibited shellfish harvesting area. The closest off bottom shellfish lease is approximately 3.2 km south west of the water lot, off the Rocky Point area. The closest silverside berth is approximately 0.43 km (along shoreline measure) north east of the water lot. The closest gaspereau fishery berth is approximately 12.2 km up the West River.

The DFO Aquatic Species at Risk Report indicated that there was no critical habitat on or adjacent to the water lot. Species indicated to be found or potentially found on the water lot were four species of large pelagics which would be very unlikely to be found in the shallow (3m) water depth.

The statements made in this Executive Summary text are subject to the limitations included in Section 6.0, and are to be read in conjunction with the remainder of this report.

Table of Contents

1.0 INTRODUCTION

1.1 General

Granville Ridge Consulting Inc. (Granville Ridge) was contracted by APM MacLean to complete a Benthic Survey, Fishery Fishery and Species At Risk Act (SARA) Knowledge Program (BSFSKP) as a component study in support of environmental planning any future potential development of The Banks Haviland Street Development water lot in Charlottetown Harbour.

1.2 Site Description

1.2.1 Current On-Site Conditions

The Banks Haviland Street Development water lot is located immediately in front of the upland portion of the property on the Charlottetown Harbour waterfront portion of Hillsborough Bay. Charlottetown Harbour/Hillsborough Bay empties into the eastern end of Northumberland Strait.

The water lot/waterfront is located on a small, shallow embayment that at low tide has extensive sand flats. The upland/water lot interface has a imported stone shoreline armour wall as seen in Figure 1.

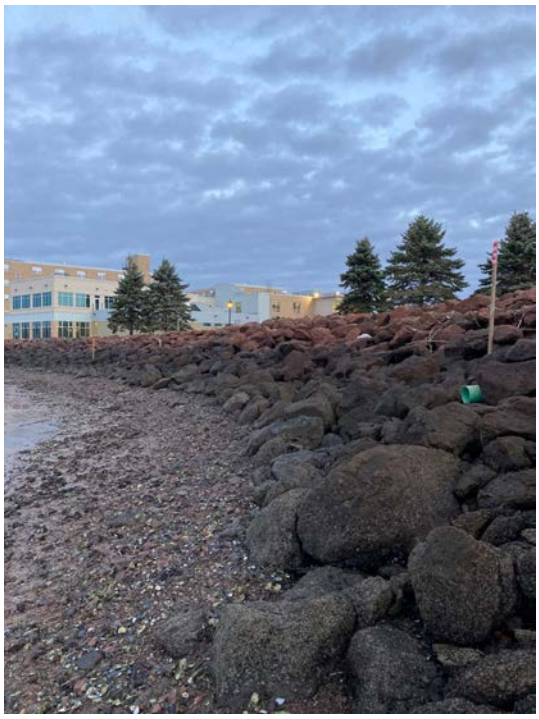


Figure 1. Photo (taken at low tide) of theThe Banks Haviland Street Development shore line of the Charlottetown Harbour/Hillsborough Bay facing north west from the southern edge of the property. The wooden stake above the green pipe protruding from the armor stone (right side of photo) is the ranging stake for the end of dive survey transect T1.

2.0 SCOPE OF WORK AND METHODODOLGY

Field Survey Methods

The benthic habitat survey plan consisted of a 40m (T1), 40m (T2), 50m (T3) and 50m (T4) benthic transect, three perpendicular to the shore (T1, T2, T3) and one parallel (T4) to the shore, within the water lot study area (approximately 50 X 45m).

On December 16, 17, 2020 a shallow draft project vessel was used to lay out four lead line transect lines (distances on the lines were tagged in 5m increments) from the shoreline out. The survey took place on the start of the ebb tide between 10:30 and 11:30. The geographical location of the start and stop of each lead line was recorded with a GPS. The water depths were provided from the divers logbooks. Survey transects' locations, geographical coordinates and water depths are presented on aerial image in Figure 2 and Tables 1, respectively.

Once the transect lead lines were set, a diver started on the end of each transect and swam the length of the transects. The diver videoed the transects along the lead lines with 0.5m on either side of the lead line (so as to have a total 1m width) for each 5m section surface area.

On December 5, 2020, at 0.5m low tide, a transect line was laid at the toe of slope of the shoreline armor stone (at the end point of the T2 benthic habitat line) and extended up the face of the armor stone to the top of slope. Photos and field notes were taken at the 0, 3 and 5m marks of the transect line. An overview photo composite of the face of the shoreline armor stone is presented in Figure 3.

Benthic Video Analysis Methods

The benthic video was reviewed and analyzed by Patrick L. Stewart M.Sc. of Envriosphere Consultants Limited. Video was reviewed on an open source media player application (VLC Media Player, VideoLAN) at the slowest speed. Features including marine plants and animals, and substrate characteristics and distance marks on the transect line were noted along with elapsed time in the video. Information was summarized for each 5 m distance interval. Transects locations are shown in Figure 1 and geographic coordinates are presented in Table 1. Image captures illustrating features of communities and substrate are presented in Photos 1-22 in Appendix A.

Table 1. Coordinates and water depths of video transects.

Transect	Start	Depth (m)	End	Depth (m)	Date
T1	N46 13.745 W63 07.784	2.7	N46 13.763 W63 07.768	0.46	Dec. 16-17, 2020
T2	N46 13.756 W63 07.798	3.1	N46 13.774 W63 07.775	0.46	"
T3	N46 13.767 W63 07.812	2.7	N46 13.783 W63 07.783	0.46	"
T4	N46 13.752 W63 07.773	2.4	N46 13.778 W63 07.799	2.4	"

Figure 2. Location of video transects, December 16-17, 2020.

Armor Stone Image Analysis Methods

The armor stone survey was conducted and photos were reviewed and analyzed by Donald R. Maynard M.Sc. of Granville Ridge Consulting Inc. Features including marine plants and animals, and substrate characteristics and distance marks were noted along the transect line. Image captures illustrating features of communities and substrate are presented in Photos 1-3 in Appendix B.

Aquaculture, Fishery and SARA Mapping/Databases

Maps of the aquaculture, fisheries and Species At Risk Act (SARA) listed on or adjacent to the water lot were obtained from:

-Environment Canada approved and closed shellfish harvest zones;

-ARCGIS mapping from DFO PEI office for shellfish aquaculture sites, silver side and gaspereau fishing berths.

-DFO Aquatic Species at Risk Report generated on the DFO website.

Figure 3. Photos of the shoreline armor stone at low tide , December 5, 2020, Photo A is taken from the 3m point of the transect looking down to the 0m mark at toe of slope, Photo B is taken from the 3m point of the transect looking up to the 5m mark at top of slope.

3.0 RESULTS OF REVIEW OF SURVEY/STUDIES

Benthic Communities and Substrate

Observations are presented in Table 2.

Table 2. Characteristics of biological communities and substrate determined from underwater video.

Distance along Transect	Distance from Shore	Comments	Substrate
Transect 1			
40 m – 35 m	0 m –5 m	Drift Eelgrass & *Fucus* clumps 40 % cover, barnacles present	Gravel, cobble and shell debris to granite boulders (armour stone)
35 m – 30 m	5 m – 10 m	Eelgrass low % cover with drift *Fucus* clumps 20% - 60%, oysters present	Patchy sand over gravel to cobble, shell debris

Table 2. Characteristics of biological communities and substrate determined from underwater video.

Distance along Transect	Distance from Shore	Comments	Substrate
30 m – 25 m	10 m – 15 m	Eelgrass 10% - 50%, *Fucus* clumps, oysters present	Cobble, shell debris nearshore transitioning to mixed silty sand and coarser further offshore
25 m – 20 m	15 m – 20 m	Eelgrass 90% - 100%, oysters present	Mixed silty sand to cobble, occasional rock debris
20 m – 15 m	20 m – 25 m	Eelgrass 80% - 100%, oysters present	Silty sand
15 m – 10 m	25 m – 30 m	Eelgrass 80% - 90%, oysters present	Silty sand mixed with coarser gravel to cobble closer to shore
10 m – 5 m	30 m – 35 m	Eelgrass 90% - 100%, *Ulva* 10%, oysters present	Silty sand
5 m – 0 m	35 m – 40 m	Eelgrass 30% - 100%, oysters present	Silty sand, occasional shell
Transect 2			
40 m – 35 m	0 m – 5 m	Drift seaweed, Fucus clump, barnacles present	Gravel & cobble to boulders
35 m – 30 m	5 m – 10 m	Eelgrass 10% - 90%	Silty sand to gravel & cobble, patches of rippled silty sand. Transitions to predominantly gravel to cobble and minor sand
30 m – 25 m	10 m – 15 m	Eelgrass 10% - 90% Occasional *Fucus* clumps	Mixed silty sand over coarse substrate.

Table 2. Characteristics of biological communities and substrate determined from underwater video.

Distance along Transect	Distance from Shore	Comments	Substrate
25 m – 20 m	15 m – 20 m	Eelgrass 90%	Silty sand to occasional cobble
20 m – 15 m	20 m – 25 m	Eelgrass 20% - 90%, oysters present. fish / sand shrimp	Silty sand to occasional mixed sand, gravel to cobble. Sand ripples.
15 m – 10 m	25 m – 30 m	Eelgrass 20% - 90%, oysters present	Rippled silty sand
10 m – 5 m	30 m – 35 m	Eelgrass 40% - 90%, oysters present, mysid?	Silty sand
5 m – 0 m	35 m – 40 m	Eelgrass 50% - 90%	Silty sand
Transect 3			
50 m – 45 m	0 m –5 m	Drift Eelgrass, barnacles present	Gravel to boulders, shells
45 m – 40 m	5 m – 10 m	Eelgrass 0% - 80%, drift Eelgrass	Rippled fine sand, transitioning to gravel to cobble, shells
40 m – 35 m	10 m – 15 m	Eelgrass 80% - 90%	Silty sand
35 m – 30 m	15 m – 20 m	Eelgrass 90%, oysters present	Silty sand
30 m – 25 m	20 m – 25 m	Eelgrass 90%, oysters present	Silty sand, occasional cobble, shells
25 m – 20 m	25 m – 30 m	Eelgrass 80% - 90%, oysters present	Silty sand
20 m – 15 m	30 m – 35 m	Eelgrass 60% - 90%, oysters present	Silty sand
15 m – 10 m	35 m – 40 m	Eelgrass 90% - 100%	Silty sand
10 m – 5 m	40 m – 45 m	Eelgrass 10% - 100%, drift *Fucus* clump, oysters present	Silty sand
5 m – 0 m	45 m – 50 m	Eelgrass 10% - 100%, oysters present	Silty sand, rippled sand patch

Table 2. Characteristics of biological communities and substrate determined from underwater video.

Distance along Transect	Distance from Shore	Comments	Substrate
Transect 4			
50 m – 45 m	0 m –5 m	Eelgrass 90%, oysters present	Silty sand to gravel
45 m – 40 m	5 m – 10 m	Eelgrass 90%, oysters present	Silty sand to gravel
40 m – 35 m	10 m – 15 m	Eelgrass 90%, oysters present	Silty sand
35 m – 30 m	15 m – 20 m	Eelgrass 90%, oysters present	Silty sand, occasional gravel and shells
30 m – 25 m	20 m – 25 m	Eelgrass 80% - 100%	Silty sand with shells
25 m – 20 m	25 m – 30 m	Eelgrass 80% - 90%, oysters present	Silty sand to cobble & gravel
20 m – 15 m	30 m – 35 m	Eelgrass 70% - 90%	Silty sand to cobble, occasional shell
15 m – 10 m	35 m – 40 m	Eelgrass 60% - 80%, absent on rippled sand, oysters present	Silty sand, rippled sand patch present, occasional shells
10 m – 5 m	40 m – 45 m	Eelgrass 40% - 80%	Silty sand, occasional shells
5 m – 0 m	45 m – 50 m	Eelgrass 80% - 90%, oysters present	Silty sand

Benthic Transect/Study Area Summary

T1

The outer end of Transect 1 is an eelgrass bed on silty sand bottom. At 12-13 m (37-38 m from shore) the sand transitions to a mixed silty sand and occasional cobble substrate, and at 20 m (20 m from shore) is mainly a patchy sand layer over coarser cobble and occasional debris. Eelgrass occurs at varying densities, typically from 90 to 100% but thinning in places to 30%, and oysters are common, occurring occasionally on sandy bottom but more abundant at the bottom becomes coarser at 10-15 m from shore. From 20 m to about 5 m from shore, the bottom is silty sand to sandy over gravel to cobble with shells of predominantly oysters and occasional quahaugs. Bottom then transitions at 5 m from shore to form a nearshore band of predominantly gravel to large cobble with patchy sand and rockweed (*Fucus* sp) (40% cover) and drift eelgrass. Rocks at the base of the armor stone shore structure support barnacles.

T2

An eelgrass bed extends from about 5 to 8 m from shore (the base of the armor stone) to the end of the transect at 40 m from shore. Eelgrass is absent and mats of drift eelgrass occur on a band of coarser bottom (gravel to cobble with sand patches) which extends from the armor stone to about 8 m from shore. Moderate cover of eelgrass occurs from approximately 8 m to 27 to 30 m from shore, where areas of open rippled sand patches about 2-3 m in extent occur. Dense eelgrass (90-100% cover) occurs over a fine silty sand bottom at the outer end (from 30 to 35 m and 40 m from shore). Occasional rockweed (*Fucus* sp) clumps occur on coarser bottom nearshore and oysters occur commonly throughout.

T3

A band of coarse gravel to cobble and shell extends from the base of the armor stone to approximately 6 m from shore, where it transitions into a zone of level, rippled sand bottom. The nearshore band is occupied only by drift seaweeds, predominantly eelgrass and possibly rockweed. The rippled sand extends from 6 to 10 m from shore and is devoid of seaweeds and eelgrass. At about 10 m, a dense eelgrass bed (40 to 90% cover) occurs over a homogeneous silty sand bottom, extending from approximately 10 m to 50 m from shore. Oysters occur commonly throughout in the eelgrass-dominated areas, and armor stone supports barnacles and encrusting sponges.

T4

Transect 4 extends southeast to northwest roughly parallel to shore through an eelgrass bed and is approximately 8 m from shore on the southeast to 23 m from shore on the northwest. Eel grass is the only plant species present, occurring typically at 80-90% cover but abundance can vary from lower to higher. Substrate is typically silty sand occasionally mixed with minor gravel to cobble and occasional shell, and the proportion of coarser material is greatest at the northwest end. Oysters occur occasionally throughout.

Figure 4. Biological communities and substrate zones, determined from seabed video.

Shoreline Armor Stone Communities and Substrate

Observations are presented in Table 3.

Table 3. Characteristics of biological communities and substrate determined from underwater video.

Distance along Transect	Comments	Substrate
0 m, toe of slope	45% coverage barnacles, occasional attached blue mussel and oyster	Granite matrix boulder
3 m	15% coverage barnacles, occasional attached blue mussel and snails	Mix of Granite and Mudstone matrix boulder
5 m, near top of slope	Occasional un-attached (storm tossed?) blue mussel	Mudstone matrix boulder

Shoreline Armor stone Observations Summary

The shoreline armor stone supports barnacle communities with a range of approximately 45% coverage at the toe of slope (0m) and a decreasing coverage towards the top of slope. At the 3m transect mark barnacle coverage is reduced to 15% and at approximately 3.5m mark barnacles are absence. Mussels and oysters are present however they are sparse and are primarily found in the armor stone niches.

Using generally accepted and followed evidence, Ballantyne 2016, of vegetation and the accumulation of drift-wood and debris, the high tide line is at approximately 3.5m mark up the armor stone slope.

Aquaculture, Fishery and SARA Mapping/Database

The Haviland Development water lot is located in a prohibited shellfish harvesting area (Figure 5). The closest off bottom shellfish lease (blue lines) is approximately 3.2 km south west of the water lot off the Rocky Point area (Figure 6). The closest silverside berth (brown dots on the map) is approximately 0.43 km (along shoreline measure) north east of the water lot. (Figure 7). The closest gaspereau fishery berth is approximately 12.2 km up the West River.

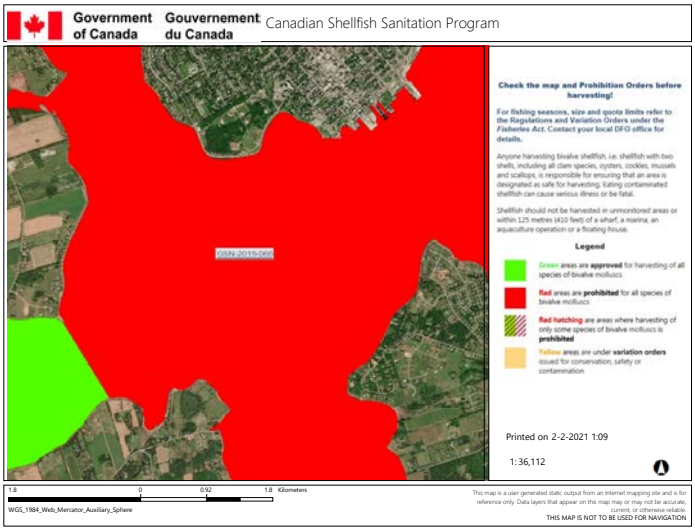


Figure 5. Map of Environment Canada approved and closed shellfish harvest zones for the Charlottetown Harbour area of the Haviland Development water lot. The water lot is a prohibited shellfish harvest area.

Figure 6. Map of ARCGIS mapping from DFO PEI office for shellfish aquaculture sites for the Charlottetown Harbour area of the Haviland Development water lot. The closest off bottom shellfish lease (blue lines) is approximately 3.2 km south west of the water lot off the Rocky Point area.

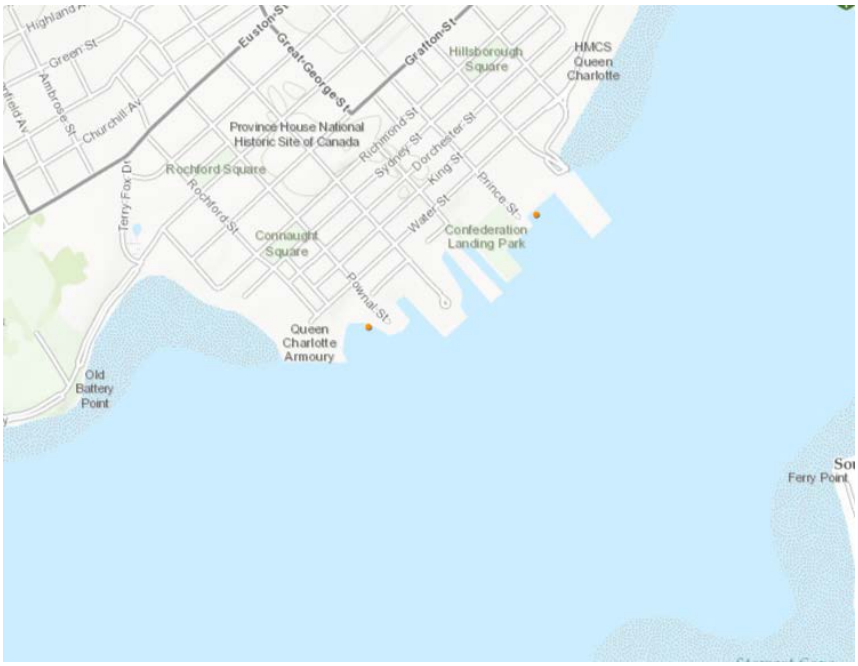


Figure 7. Map of ARCGIS mapping from DFO PEI office for silverside fishing berths in Charlottetown Harbour area of the Haviland Development water lot. The closest silverside berth (brown dots on the map) is approximately 0.43 km (along shoreline measure) north east of the water lot.

A March 2021 search of the DFO aquatic species at risk database was conducted for the property water lot area (Appendix C). The aquatic species at risk (endangered) found within the mapped database included: Blue Whale, Leatherback Sea Turtle, North Atlantic Right Whale, Northern, White Shark. The species identified are either highly mobile and/or not found in the locations (too shallow of water depth) at or adjacent to the property water lot.

Striped bass (Morone saxatillis) is listed (2012) as a species of special concern by COSEWIC in the Southern Gulf of St. Lawrence but with no SARA status. The striped bass is highly mobile in spring, summer, and fall. The species overwinter in deep freshwater lakes in Atlantic Canada. The species has reached its recovery limit and the recreational and Indigenous fishery re-opened in 2013, Envirosphere 2009.

4.0 BENTHIC SURVEY/FISHERY/SARA SUMMARY

Most of the water lot study area from shore to approximately 50 m offshore is occupied by eelgrass (*Zostera marina*) on silty sand bottom furthest offshore (Figure 4), but the bed extends into nearshore areas where the substrate is coarser. Near the shore, mainly within about 10 m, the substrate is coarse, typically containing gravel to cobble as well as sand, and the armor stone along the shore provides a sharp border and a habitat occupied by barnacles and occasionally encrusting organisms such as sponges. Oysters are relatively common throughout the sandy areas occupied by eelgrass.

The existing shoreline armor stone supports barnacle communities with a range of approximately 45% coverage at the toe of slope (0m) and a decreasing coverage towards the top of slope. Oysters and mussels are attached occasionally to the armor stone and are mostly limited to niches.

The Haviland Development water lot is located in a prohibited shellfish harvesting area. The closest off bottom shellfish lease is approximately 3.2 km south west of the water lot off the Rocky Point area. The closest silverside berth is approximately 0.43 km (along shoreline measure) north east of the water lot. The closest gaspereau fishery berth is approximately 12.2 km up the West River.

The DFO Aquatic Species at Risk Report indicated that there was no critical habitat on or adjacent to the water lot . Species indicated to found or potentially found on the water lot were four species of large pelagics which would be very unlikely to be found in the shallow (3m) water depth.

5.0 REFERENCES

Atlas of Ecologically and Commercially Important Areas in Southern Gulf of St. Lawrence. 2000. Environment Studies Research Fund. Jacques Whitford Environment Ltd. 72p.

Ballantyne, B. 2016. Water Boundaries on Canada Lands: That Fuzzy Shadowland. Natural Resources Canada. 73p.

DFO Shellfish Closure Maps 2020 at: https://inter-w01.dfo-mpo.gc.ca/Geocortex/Essentials/Viewer/Index.html?viewer=CSSP_Public_En_Site

DFO Aquatic Species at Risk Report at: https://www.dfo-mpo.gc.ca/species-especes/sara-lep/map-carte/index-eng.html

Envirosphere Consultants Limited. 2009. Ocean Disposal Overview-Charlottetown Harbour. Dredging and Ocean Disposal in a Coastal Harbour, Charlottetown, PEI . 133p.

6.0 CLOSURE

This report has been prepared for the sole benefit of the APM MacLean and Department of Fisheries and Oceans. The report may not be used by any other person or entity without the express written consent of Granville Ridge Consulting Inc.

Any use that a third party makes of this report, or any reliance on decisions made based on it, is the responsibility of such third parties. Granville Ridge Consulting Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made, or actions taken, based on this report.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. Conclusions and recommendations presented in this report should not be construed as legal advice.

If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.

This report was prepared by Mr. Donald Maynard BSc. MSc.

Sincerely,

GRANVILLE RIDGE CONSULTING INC.

Donald R. Maynard, BSc., MSc
Principal Environmental Scientist
drmaynard@granvilleridge.ca

9.0 APPENDICES

Appendix A,

Selected photos from the benthic habitat survey video for the transects 40m (T1), 40m (T2), 50m (T3) and 50m (T4) benthic transect, three perpendicular to the shore (T1, T2, T3) and one parallel (T4) to the shore.

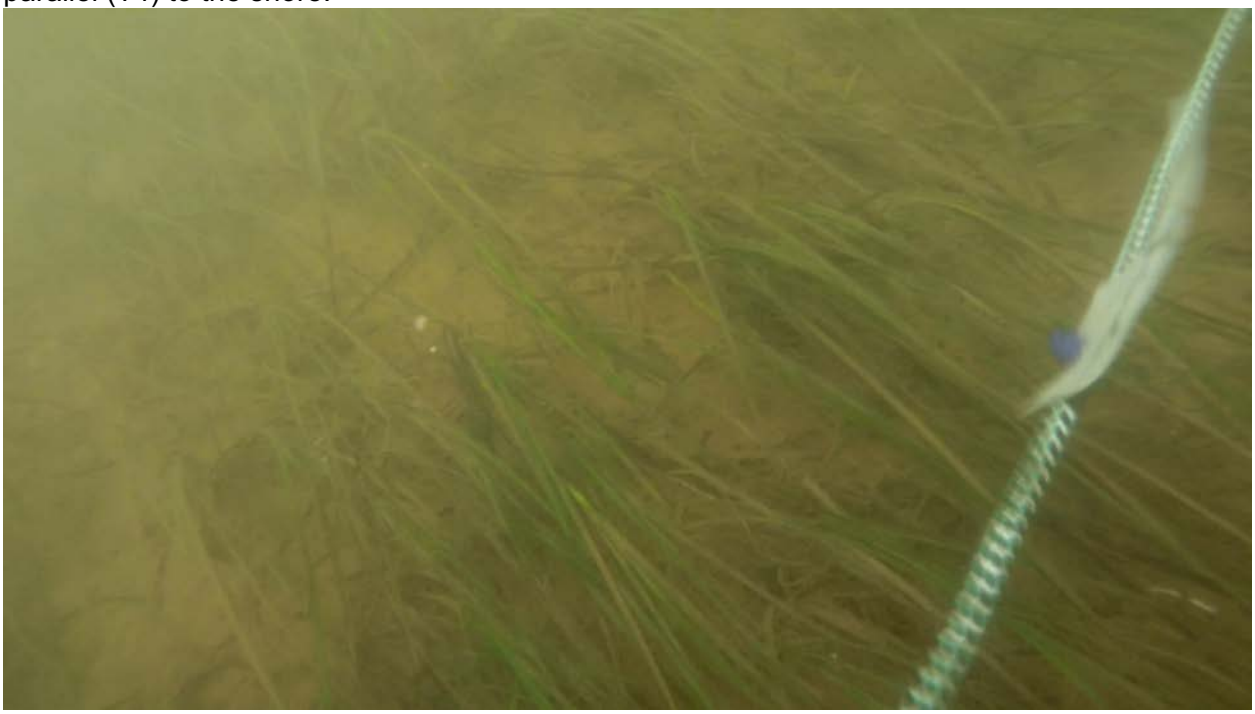


Photo 1. Transect 1, Eelgrass at outer extent of transect (40 m from shore).

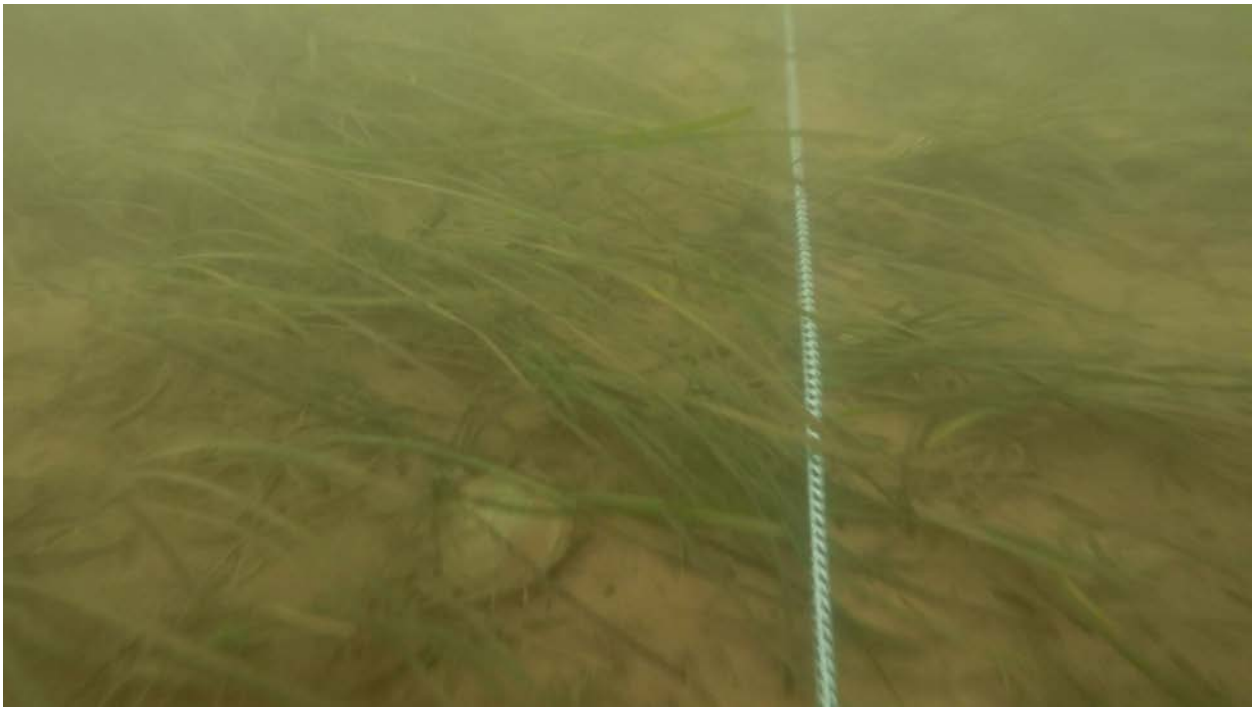


Photo 2. Transect 1, outer area (35 m from shore), with oyster.

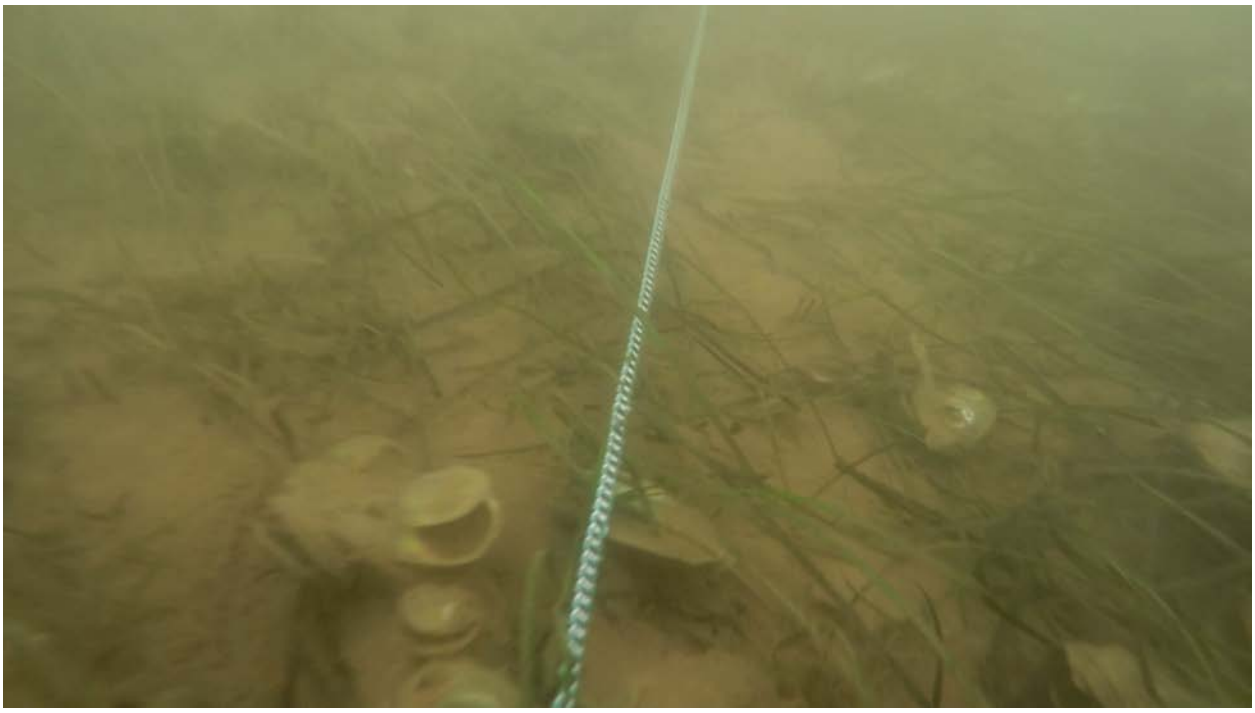


Photo 3. Transect 1, 30 m from shore, shells and litter.

Photo 4. Transect 1, Eelgrass and shells 25 m from shore.

Photo 5. Transect 1, Eelgrass with patch of shell, oysters and coarse substrate, ~ 20 m from shore.

Photo 6. Transect 1, mixed bottom with sand, eelgrass, gravel to cobble and shell, 10 m from shore.

*Photo 7. Transect 1, coarse bottom with clumps of rockweed (*Fucus *sp) and drift Eelgrass, ~ 7 m from armour stone.*

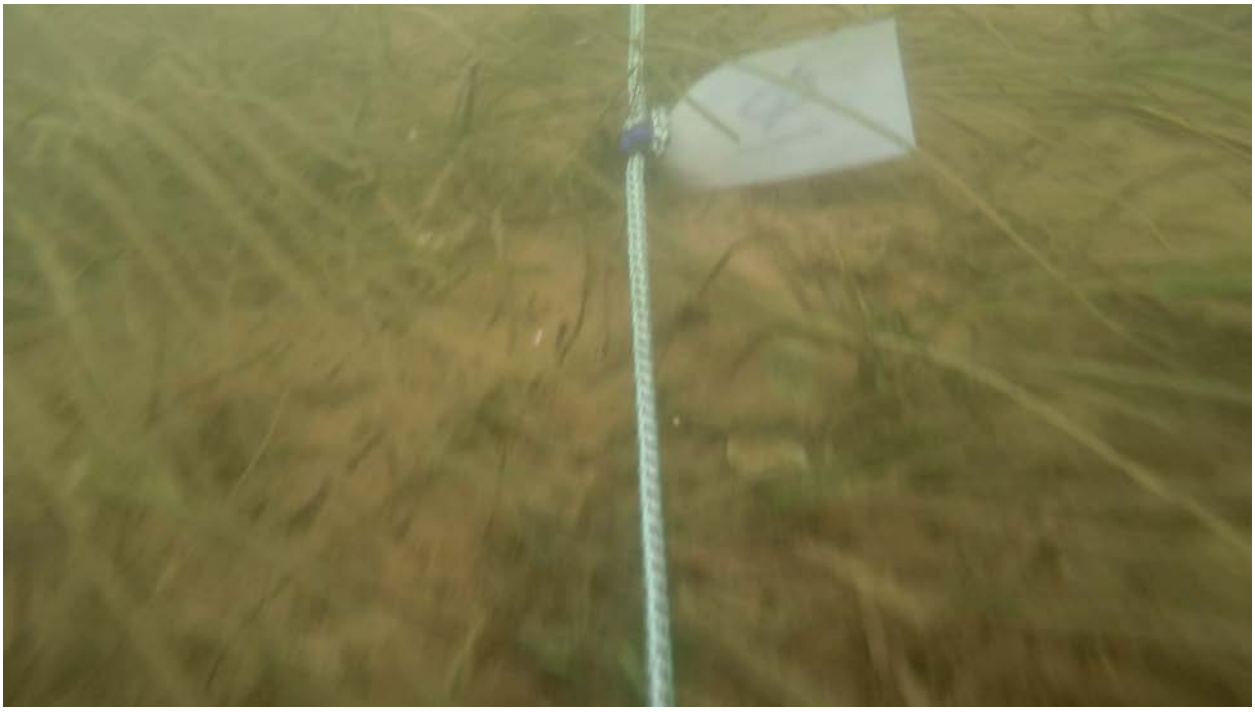


Photo 8. Transect 2, Eelgrass approximately 30 m from shore.

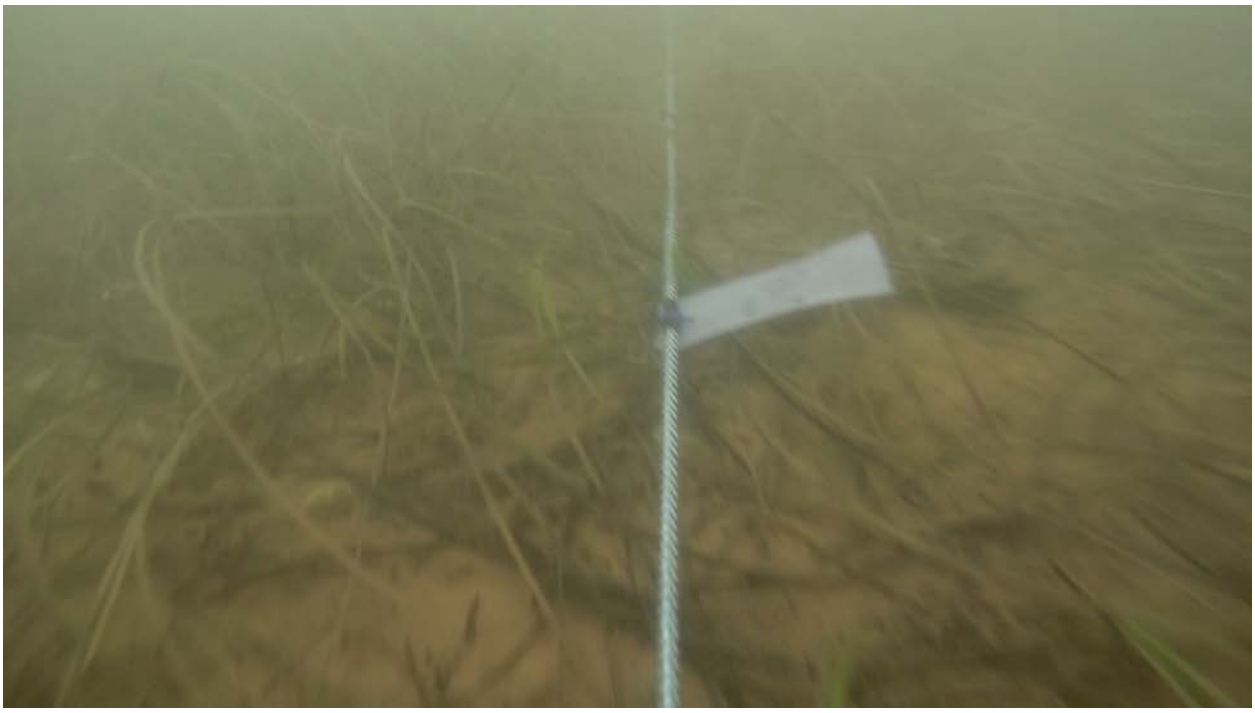


Photo 9. Transect 2, Eelgrass on silty sand bottom 20 m from shore.

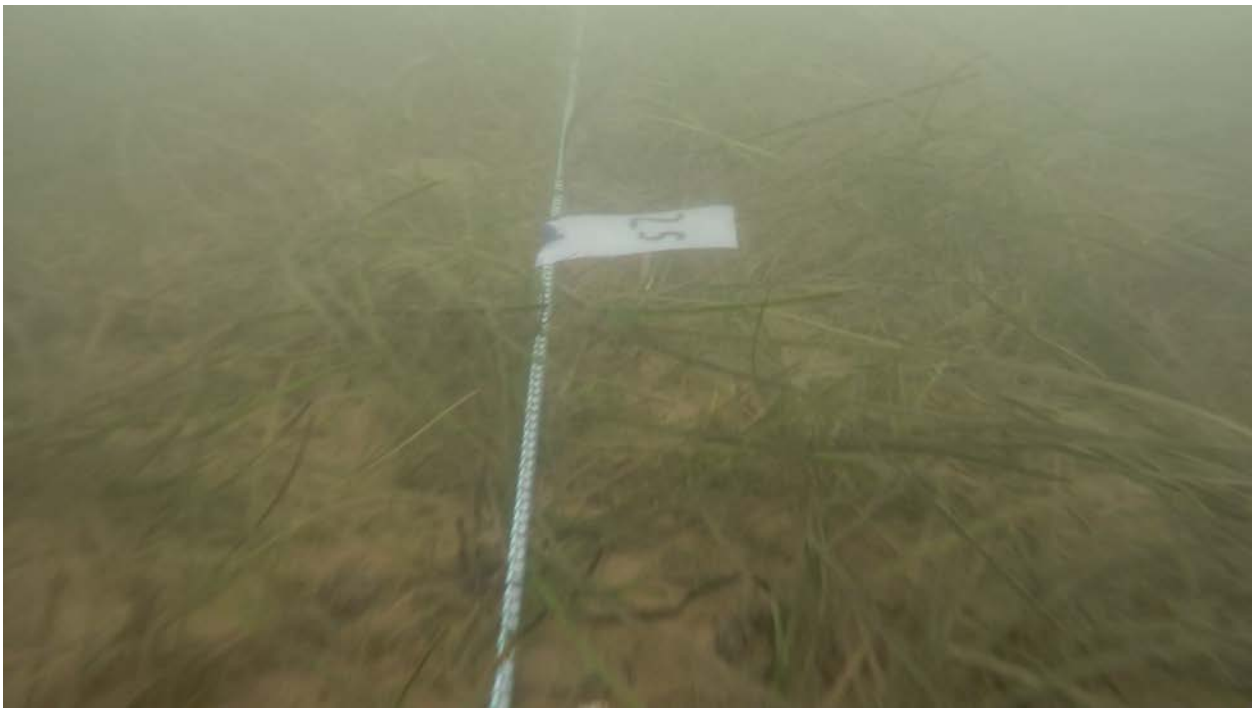


Photo 10. Transect 2, Eelgrass on silty sand bottom 15 m from shore.

Photo 11. Transect 2, coarse substrate and shells with drift Eelgrass at 7 m from armour stone.

Photo 12. Transect 2, armour stone.

Photo 13. Transect 3, Eelgrass 35 m from shore.

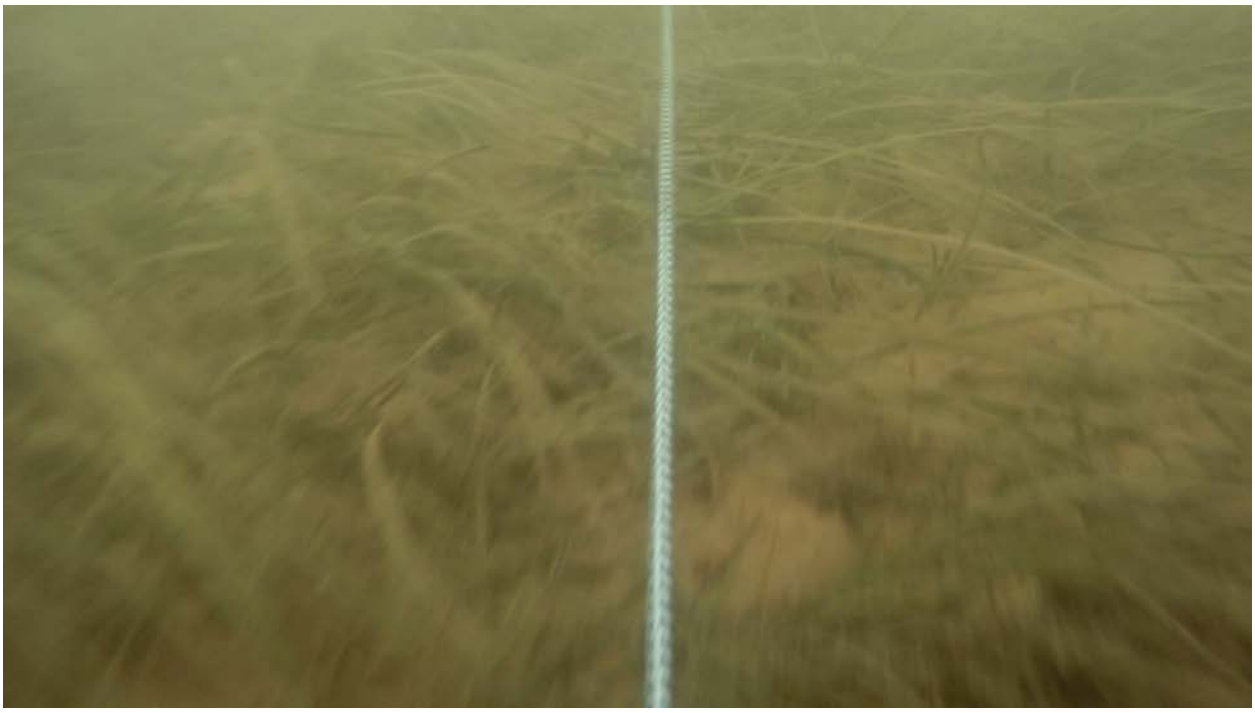


Photo 14. Transect 3, Eelgrass 50 m from shore.

Photo 15. Transect 3, barnacles and encrusting growth on armour stone.

Photo 16. Transect 3, coarse bottom with drift eelgrass at base of armour stone.

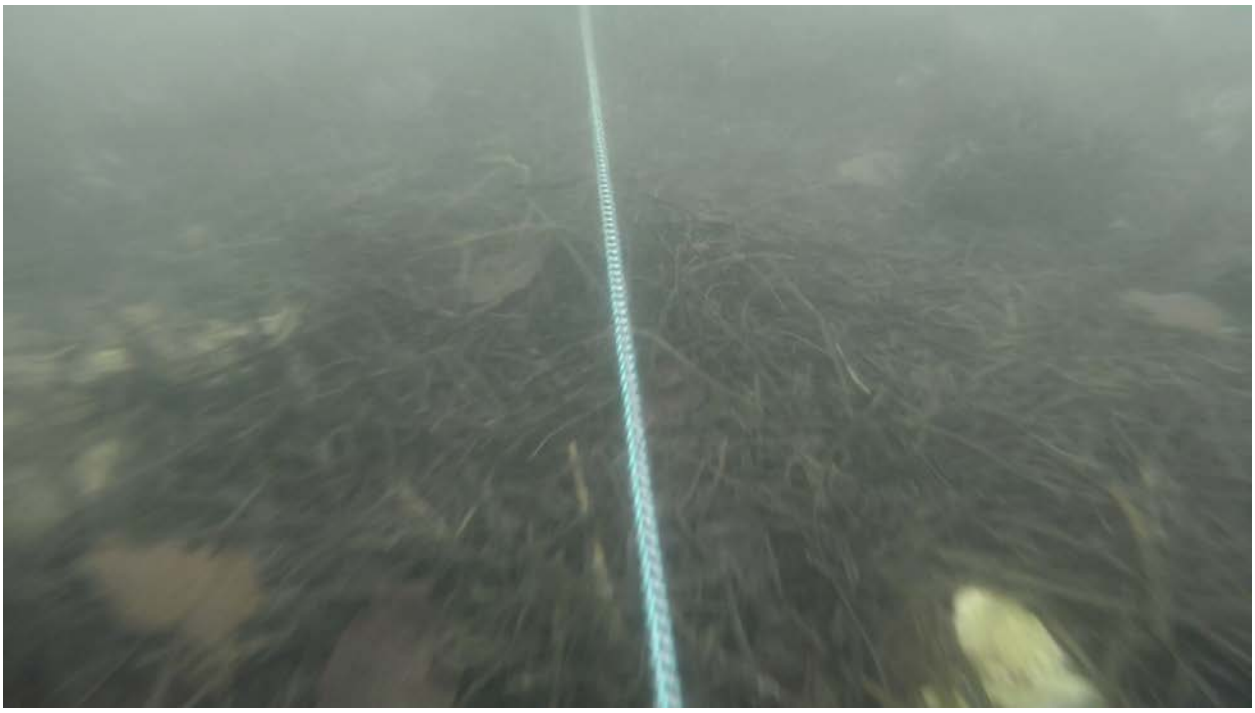


Photo 17. Transect 3, drift Eelgrass over band of coarse substrate at base of armour stone.

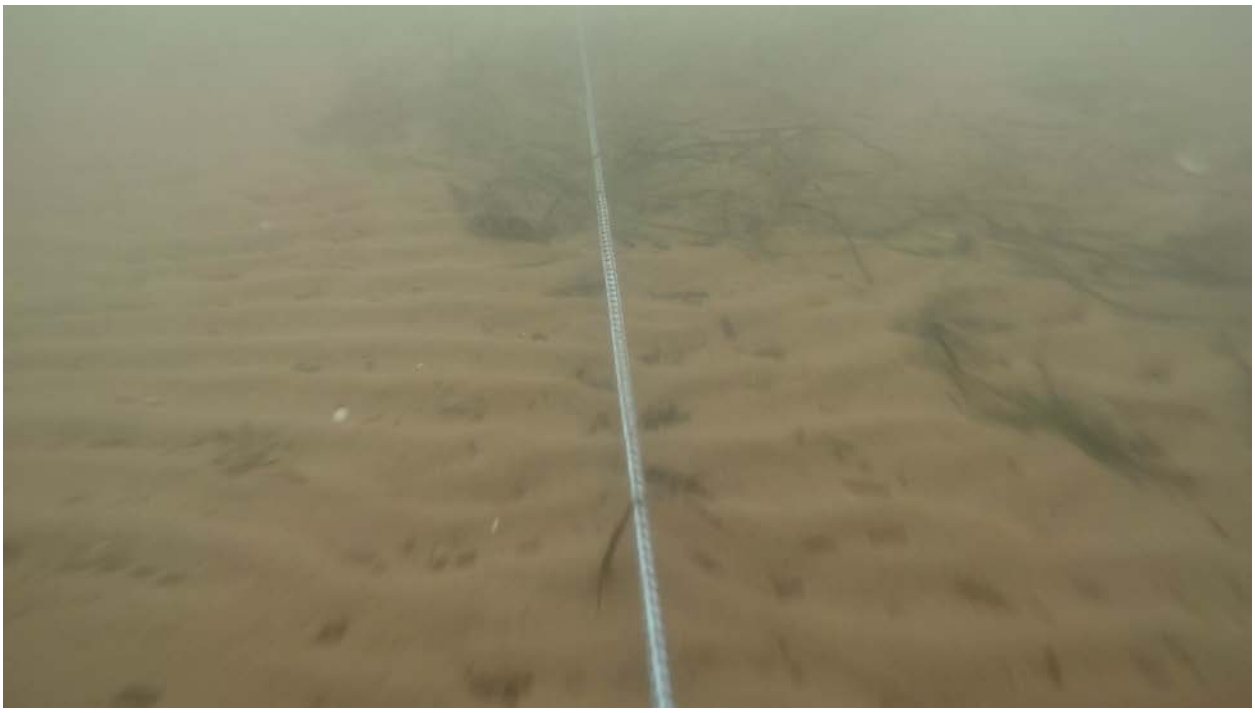


Photo 18. Transect 3, rippled sand zone from 6 to 10 m from shore.

Photo 19. Transect 4, dense Eelgrass bed crossed by transect.

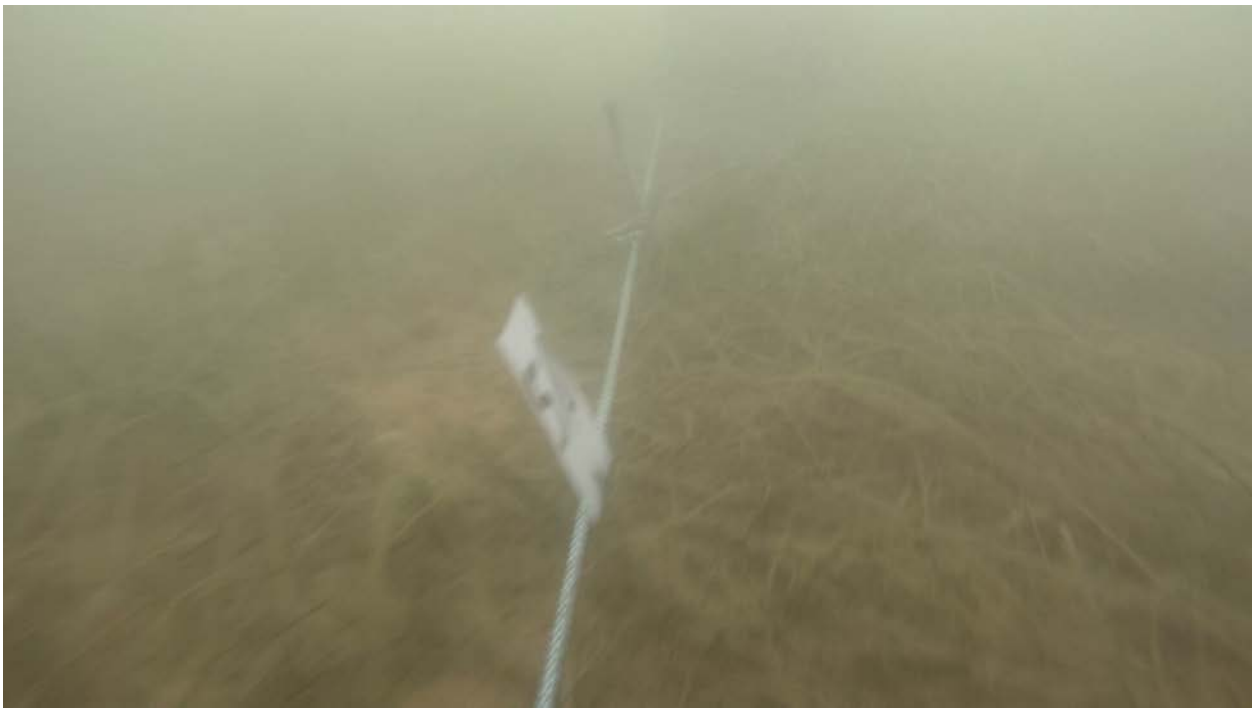


Photo 20. Transect 4, Eelgrass at northwest end.

Appendix B,
Photos of the shoreline armourstone survey transects 0, 3, 5m.

Photo 1. 0m mark on transect, toe of slope

Photo 2. 3m mark on transect

Photo 3. 5m mark on transect, near top of slope

Appendix C,
March 2020 DFO Aquatic Species at Risk Report for The Banks Haviland Street water lot

Fisheries and Oceans Canada | Pêches et Océans Canada

Aquatic Species at Risk Report

Canada

One or more aquatic species listed under the Species at Risk Act are found (or potentially found) within the coloured areas.

- Critical Habitat
- Extirpated, Endangered, or Threatened
- Special Concern

How to use this information:

1. The map and species list are intended to provide a general overview of aquatic species at risk and their critical habitat that may occur within the mapped area.

2. To assess your project go to: www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html

If you encounter an aquatic species at risk in an area that is not currently mapped, please notify your regional Fisheries Protection Program office to ensure that you are compliant with the Species at Risk Act.
The official source of information for species at risk is the Species at Risk Public Registry www.sararegistry.gc.ca

To protect fish and fish habitat, including aquatic species at risk, their residences, and their critical habitat, efforts should be made to avoid, mitigate and/or offset harm. Following the measures to avoid harm will help you comply with the Fisheries Act and the Species at Risk Act.

Critical habitat for these species is found within the outlined area

Critical habitat is identified in recovery strategies or action plans for species listed under Schedule 1 of the Species at Risk Act as extirpated, endangered or threatened.

Name	Where Found	Species Status
	No critical habitat	

Species found (or potentially found) within the outlined area

Name	Where Found	Species Status
Blue Whale - Atlantic	Atlantic Ocean/Océan Atlantique	Endangered
Leatherback Sea Turtle - Atlantic	Atlantic Ocean/Océan Atlantique	Endangered
North Atlantic Right Whale	Atlantic Ocean/Océan Atlantique	Endangered
White Shark - Atlantic	Atlantic Ocean/Océan Atlantique	Endangered

2948

DEVELOPMENT AGREEMENT

THIS AGREEMENT made this 13th day of March, 2025

BETWEEN:

THE CITY OF CHARLOTTETOWN, an incorporated City,
in Queens County, Province of Prince Edward Island
(hereinafter called "the City")

OF THE FIRST PART

AND:

PAN AMERICAN PROPERTIES INC., Charlottetown, in Queens County,
Province of Prince Edward Island
(hereinafter called "the Developer")

OF THE SECOND PART

WHEREAS the City and the Developer have agreed to enter into a Development Agreement to allow the Developer to construct a seven (7) storey apartment building containing 49 apartment units with a mix of underground garage parking and surface level parking located at an unaddressed property fronting onto the west side of Haviland Street in the City of Charlottetown, Queen's County, Prince Edward Island the property being identified as PID# 1100635 zoned Waterfront (WF).

AND WHEREAS the Developer has provided the City a detailed site plan and architectural concept drawings of the project as shown in Schedule "A" (attached);

AND WHEREAS the construction drawings including - but not limited to - floor plan layout, building cross section and elevation drawings, shall be submitted to the City prior to the City issuing a foundation permit for the apartment building or subsequent permits;

AND WHEREAS a building permit shall not be issued until this Agreement has been executed by both parties and the building shall not be occupied until occupancy permits have been issued;

NOW THEREFORE THIS AGREEMENT WITNESSETH THAT in consideration of the mutual covenants and agreements herein contained and subject to the terms and conditions hereinafter set out, the parties hereto agree as follows:

1. THE DEVELOPMENT

1.1 The Development relates to the current and future use of the site located on PID# 1100635 in the City of Charlottetown, Queens County, Prince Edward Island.

1.2 For greater certainty, the Development includes the new construction of a 7-storey apartment building with a proposed maximum height of 24.23 metres (79.50 feet) to the top of the roof deck at unaddressed property on Haviland Street on PID# 1100635 being an existing vacant flag-shaped lot having an assessed area of approximately 0.76 hectares (1.89 acres). The proposed 7-storey apartment building would have a gross building footprint of approximately 949 square metres (10,215 square feet) and be placed and oriented on the property in general accordance with the site plan as shown in Schedule "A".

2. DEVELOPER'S COVENANTS

2.1 The site, landscaping, parking and building as shown in (Schedule "A") are all considered to be part of the overall plan, and no material changes shall take place without prior written request.

2.2 The decision of the Chief Administrative Officer, or other designate of the City, as to whether the Development or the operation thereof conforms to the terms of this Agreement, or with the Site or Building Plans, shall be conclusive and final.

2.3 The cost of access to the site and modification to any City sidewalks or streets is the responsibility of the Developer and the work is subject to review of the plans by the City Public Works Department.

2.4 The street and adjoining sidewalks shall be kept clean from any debris generated from construction activity. The Developer is responsible for the cost of cleaning and removing any dirt, mud and debris generated from construction of the apartment development. The street shall be cleaned at the end of each day should such materials be present on the street to ensure the continued safe passage of traffic while construction is on-going.

2.5 All required parking for the development (minimum of 25 parking spaces total) are to be provided on the subject property in accordance with the regulations and provisions of the Zoning and Development Bylaw.

2.6 Drainage on the site shall avoid surface water runoff from the building or lot onto adjoining neighbors and abutting properties. All site stormwater shall drain directly to the municipal stormwater system unless catchment systems for internal capture and reuse are provided and deemed acceptable to the City of Charlottetown.

2.7 No material changes to the final plans shall take place without prior written consent from the City of Charlottetown once approval has been given.

2.8 The City will process any permit applications in accordance with the Zoning and Development By-law and National Building Codes.

2.9 It is the responsibility of the Developer to make application to the Water and Sewer Utility Department for installation of services. All servicing must comply with the standards and requirements of the Water and Sewer Utility Department for required water and sewer installation. All plans and work are subject to review by the City Water and Sewer Utility Department.

3. AMENDMENTS

3.1 Any proposed changes or alterations to the Site Plan or Architectural Drawings as shown in Schedule "A" shall necessitate an amendment to this Agreement and must first be approved by the City in writing by way of an Addendum to this Agreement.

4. DISPUTE RESOLUTION - NEGOTIATION, MEDIATION AND ARBITRATION

4.1 The parties agree to negotiate all matters or disputes arising out of this Agreement reasonably, in good faith and with a view to reaching a mutually satisfactory agreement. Each party shall make full, frank and open disclosure of any and all documents within their possession, custody or control as may be necessary to secure a negotiated solution to any dispute arising under this Agreement.

4.2 Where agreement on any matter cannot be reached by negotiation, the parties may either retain a mutually acceptable mediator to assist them in reaching an agreement, or shall arbitrate their differences as provided in Section 4.3.

4.3 If negotiation and mediation do not resolve any differences between the parties, then any matters in difference between the parties in relation to this Agreement shall be referred to arbitration before a single arbitrator, if the parties agree upon one within three (3) working days. This time may be extended by mutual written agreement. Otherwise, the dispute shall be submitted to three (3) arbitrators. One arbitrator is to be appointed by each party within three (3) working days of receiving notice in writing by the other (who shall simultaneously name their nominee) to do so. The third arbitrator, who shall be the chairperson, shall be chosen by the first two named, within three (3) working days after their selection. If a party fails to select their nominee within three (3) working days of receiving notice to do so in writing, then the matter shall revert to being heard by the one (1) arbitrator appointed by the party first requesting the other to name their nominee. The award and determination of the arbitrator or arbitrators, or any two of the three arbitrators, shall be rendered within thirty (30) days (or such

longer time as may mutually be agreed upon) after selection of the sole arbitrator or Chairperson. The award shall be final and binding upon the parties and their respective successors and assigns.

5. COSTS

5.1 The Developer agrees to pay for all reasonable legal costs and other reasonable out of pocket costs and expenses incurred by the City in the preparation of and registration of this Development Agreement. Any dispute over the amount of the City's legal, other costs or out of pocket expenses for reimbursement by the Developer shall be referred to the Prothonotary of the Supreme Court of Prince Edward Island for taxation on a solicitor client scale.

6. INDEMNITY

6.1 The Developer shall at all times indemnify and save harmless the City from and against all claims, demands, loss, costs, damages, actions, suits or other proceedings by whomever made, sustained, brought or prosecuted to the extent that the foregoing are based upon, occasioned by or attributable to anything done or omitted by the Developer, his servants or his agents or employees in the fulfillment of any of its obligations under this Agreement.

7. GENERAL

7.1 It is agreed the provisions of this Development Agreement are severable from one another and that the invalidity of one provision shall not prejudice the validity of enforcement of any other provision.

7.2 The continued operation of the Development shall comply with all applicable federal, provincial and municipal laws, by-laws, and regulations.

8. HEIRS, SUCCESSORS AND ASSIGNS

8.1 This Agreement shall be binding upon the parties hereto, their heirs, successors and assigns and shall be registered on title and run with and burden the land and Development which is the subject of this Agreement.

IN WITNESS THEREOF the parties hereto have hereunto set their hands and seals on the day and year first above written.

Signed, Sealed, Delivered and Attested to
by the proper signing officers
in the presence of:

Tracey McLean
Commissioner of Deeds
Province of Prince Edward Island

CITY OF CHARLOTTETOWN

PER: _____
Mayor

PER: _____
CAO

Signed, Sealed, Delivered and Attested to
by the proper signing officers
in the presence of:

Nicholas Millar
A Commissioner for taking Affidavits
In Prince Edward Island

Jason Doucette
Commissioner of Deeds
Province of Prince Edward Island

PAN AMERICAN PROPERTIES INC.

PER: _____
Terry Palmer,
Pan American Properties Inc.

DATED this 13th day of March A.D. 2025.

BETWEEN:

THE CITY OF CHARLOTTETOWN

OF THE FIRST PART
(hereinafter referred to as the "City")

AND:

PAN AMERICAN PROPERTIES INC.
(hereinafter referred to as the "Developer")

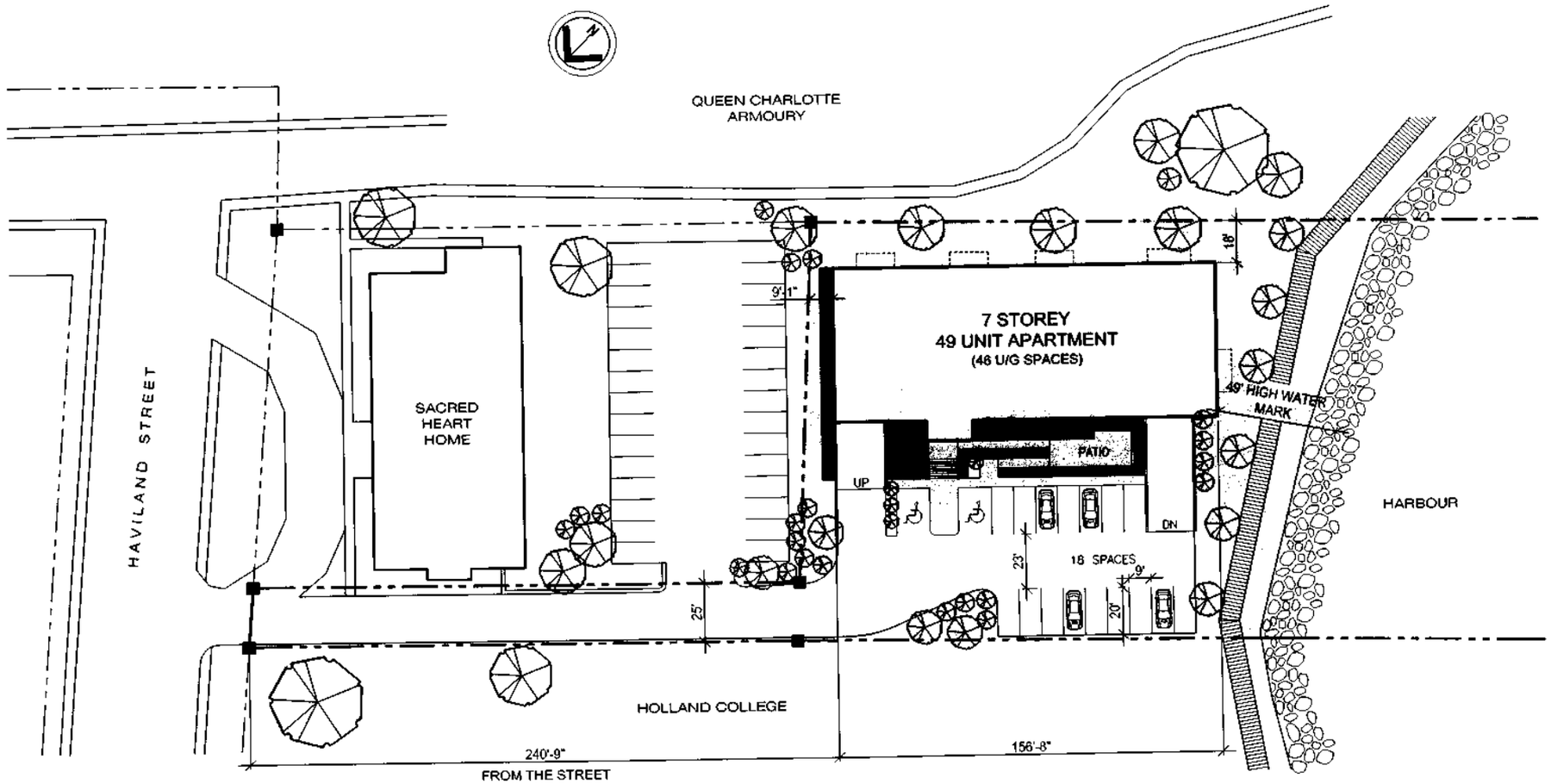
OF THE SECOND PART

****

DEVELOPMENT AGREEMENT

****

FILE NO C25198-SP1-01



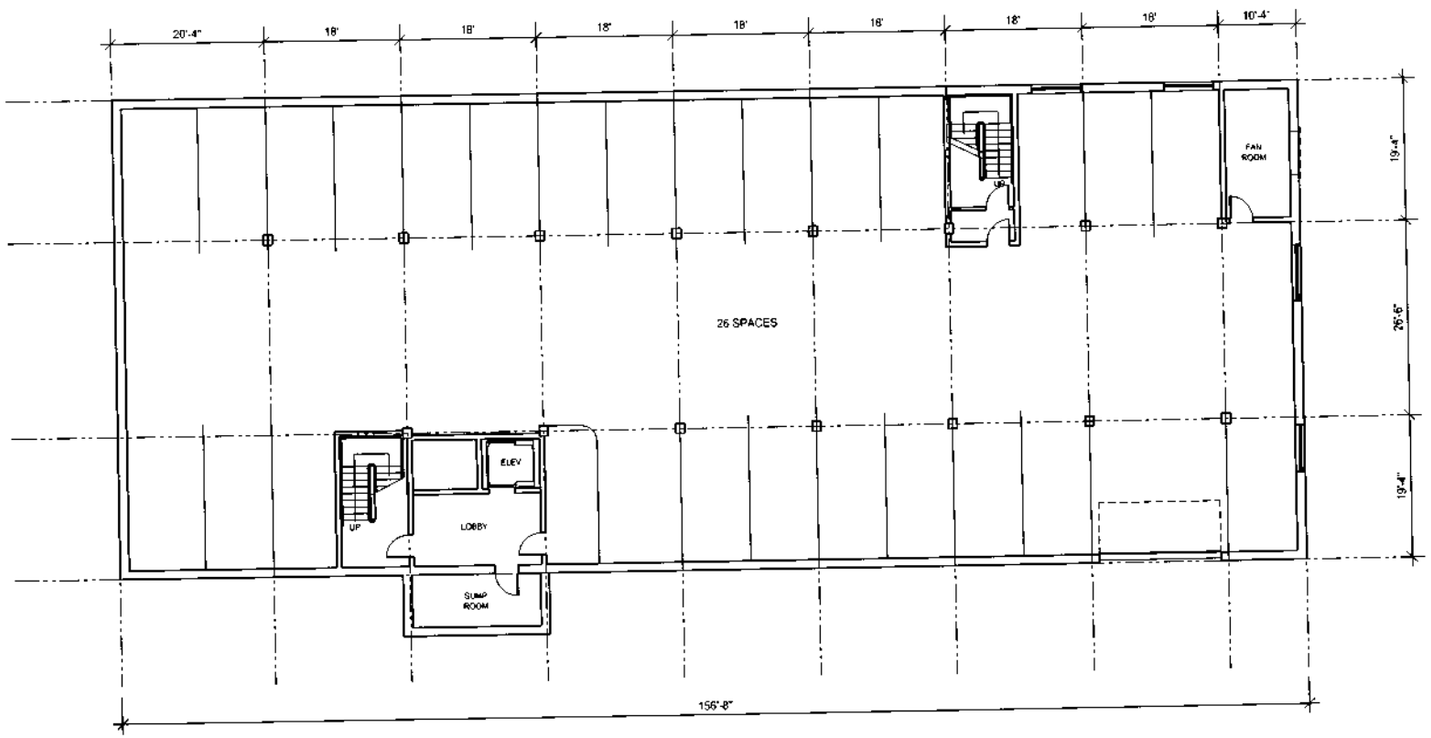
SCALE: 1"=40'-0"

SP1

APM ROYAL LEPAGE COMMERCIAL

THE BANKS

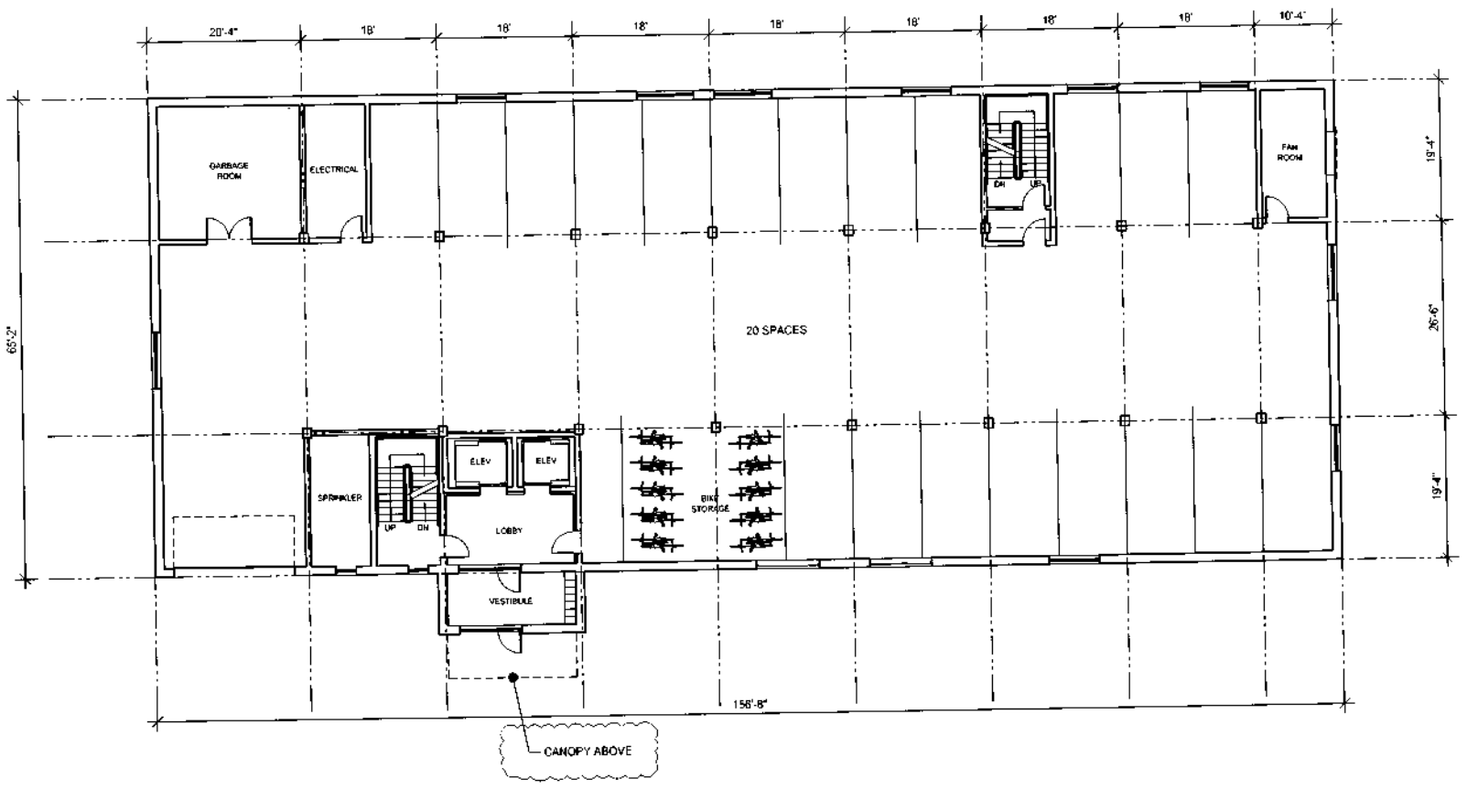
Charlottetown, PE - December 17, 2024



LOWER LEVEL (10,370 SQ.FT.)
SCALE: 1/16"=1'-0"

APM ROYAL LEPAGE COMMERCIAL

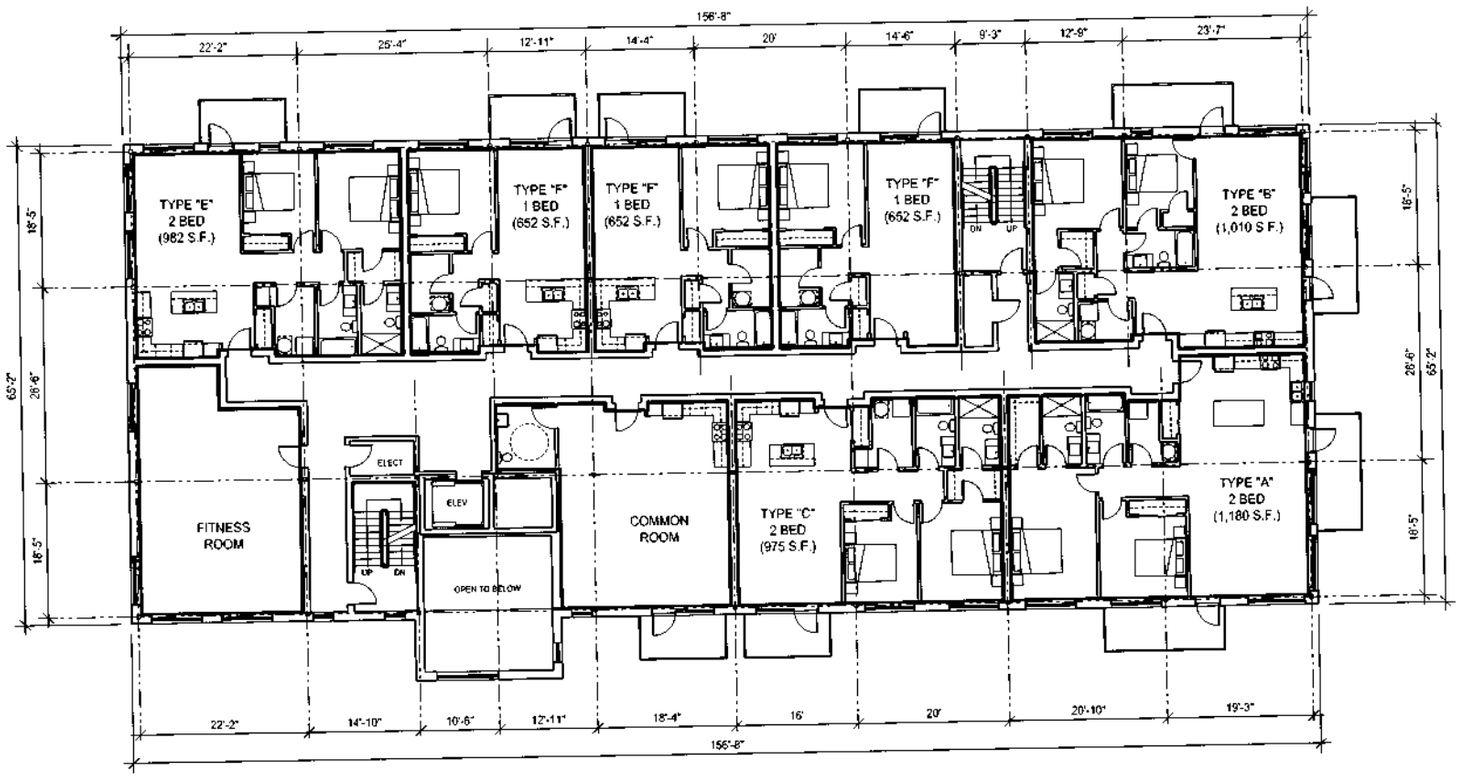
THE BANKS
Charlottetown, PE - February 10, 2025



MAIN LEVEL (10,370 SQ.FT.)
SCALE: 1/16"=1'-0"

APM ROYAL LEPAGE COMMERCIAL

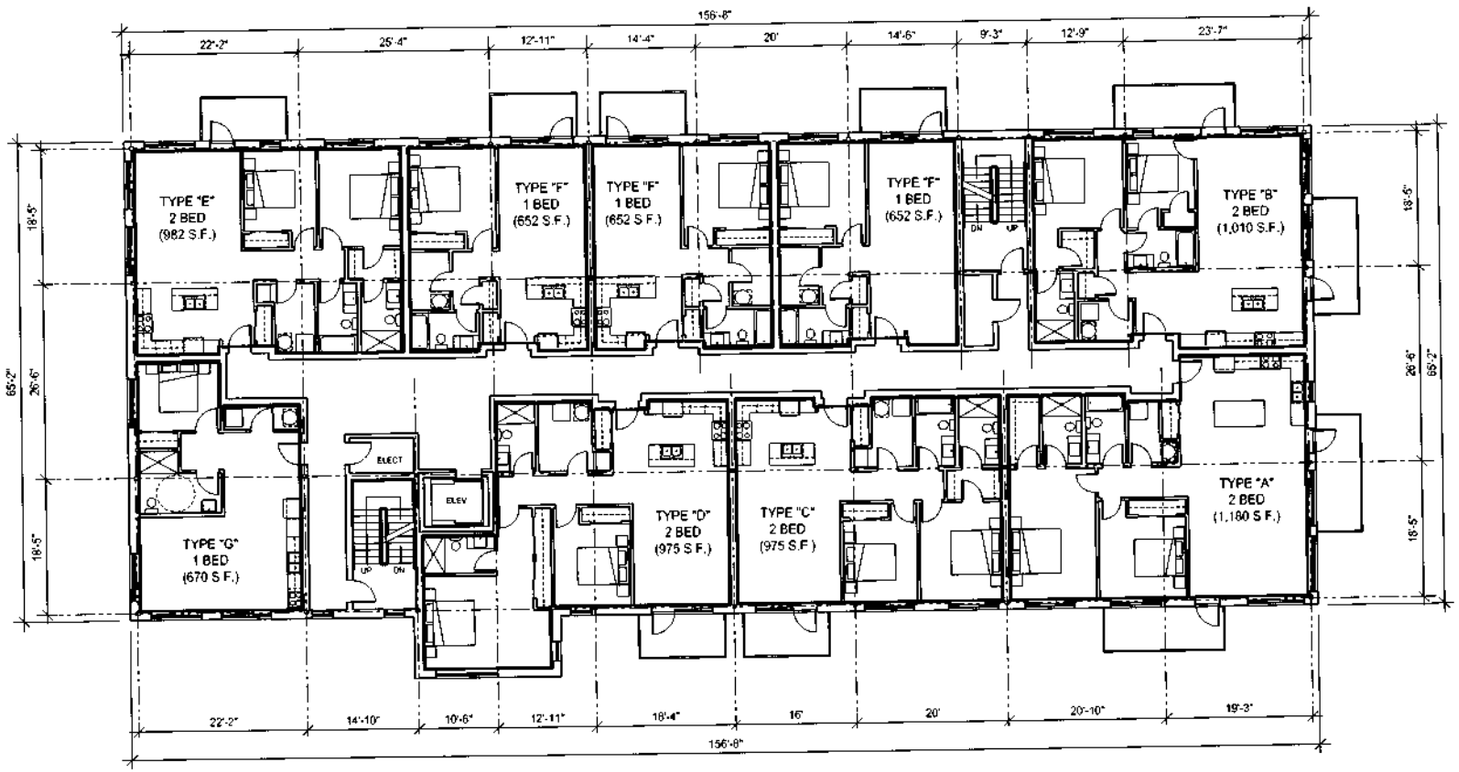
THE BANKS
Charlottetown, PE - February 10, 2025



2nd FLOOR (10,370 SQ.FT.)
SCALE: 1/16"=1'-0"

APM ROYAL LEPAGE COMMERCIAL

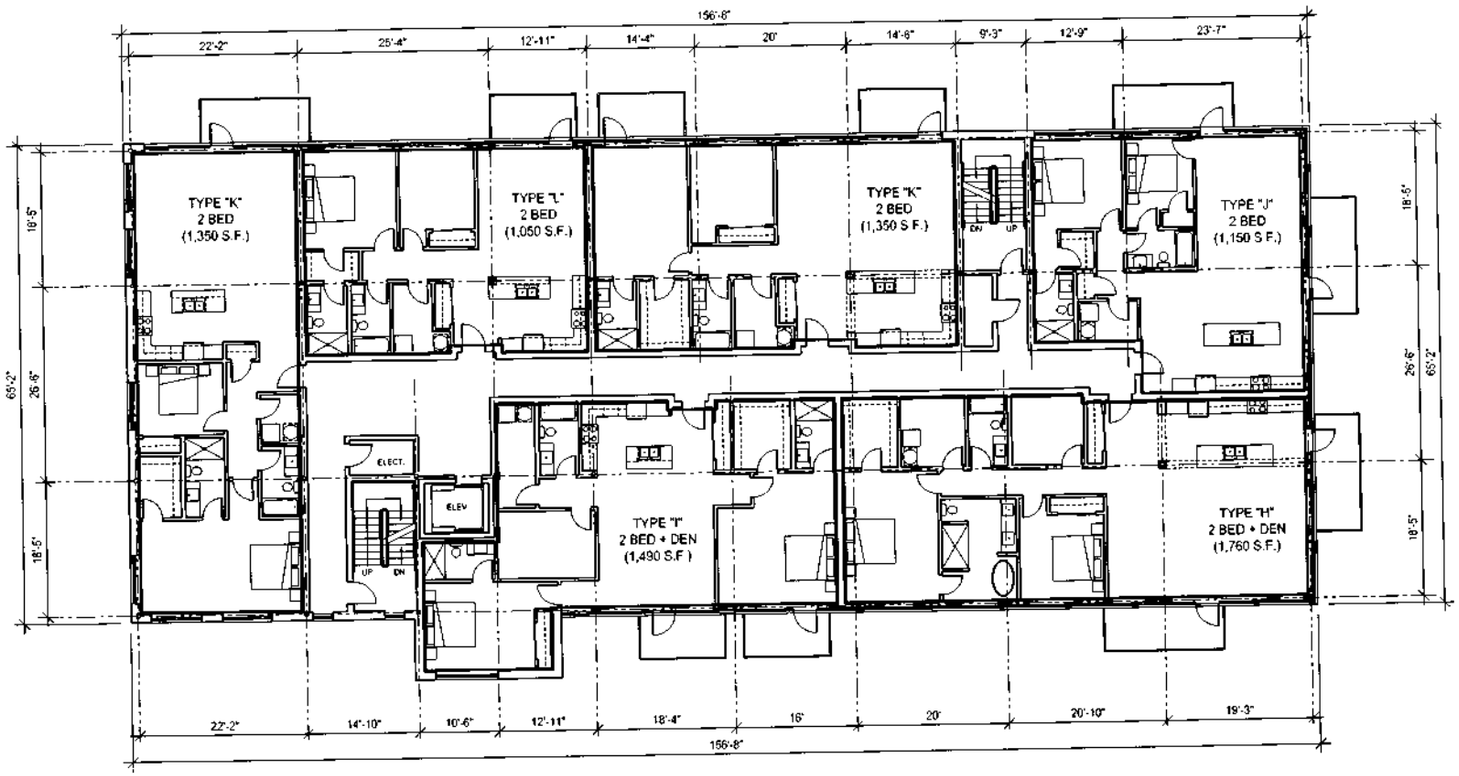
THE BANKS
Charlottetown, PE - February 10, 2025



3rd TO 6th FLOORS (10,370 SQ.FT.)
SCALE: 1/16"=1'-0"

APM ROYAL LEPAGE COMMERCIAL

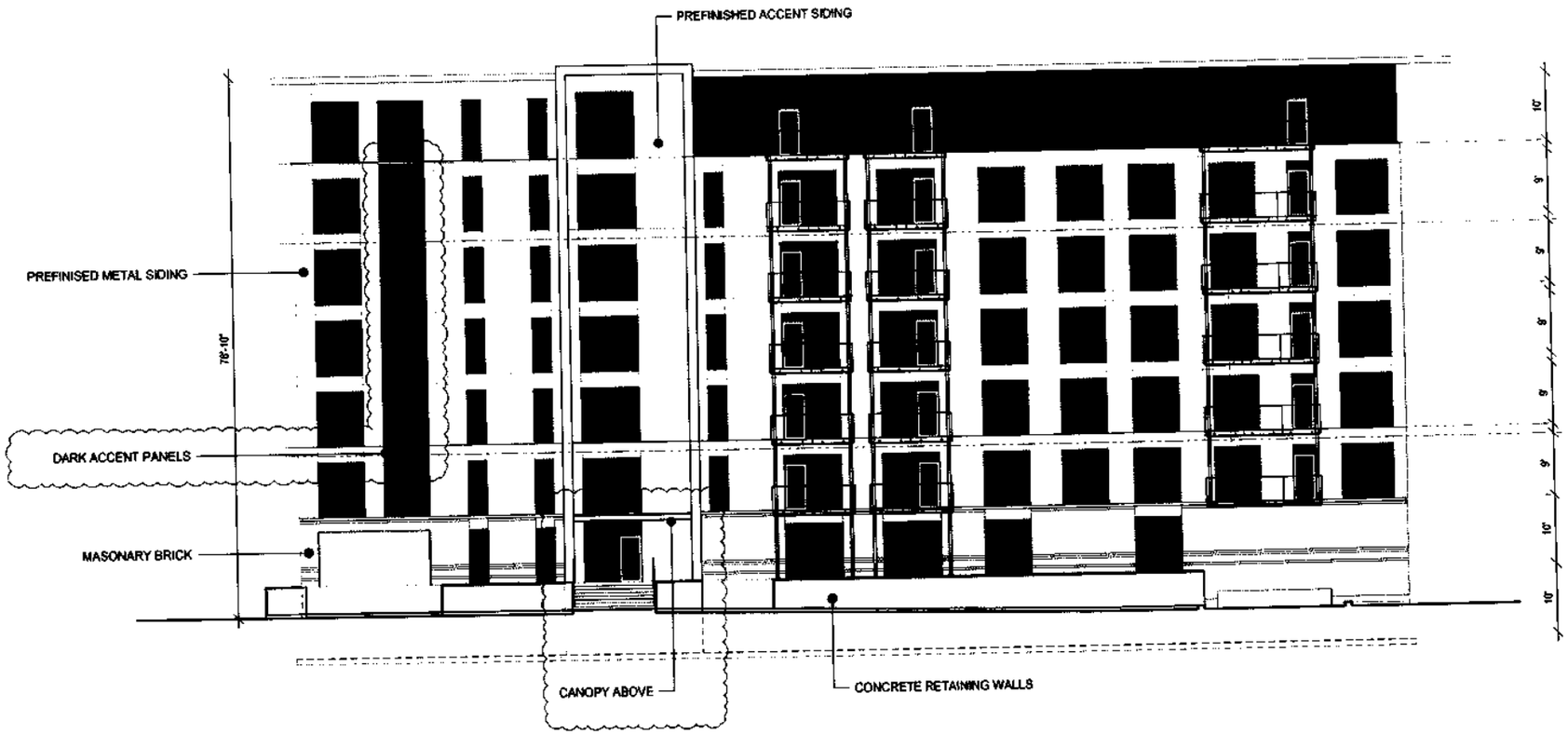
THE BANKS
Charlottetown, PE - February 10, 2025



7th FLOOR (10,370 SQ.FT.)
SCALE: 1/16"=1'-0"

APM ROYAL LEPAGE COMMERCIAL

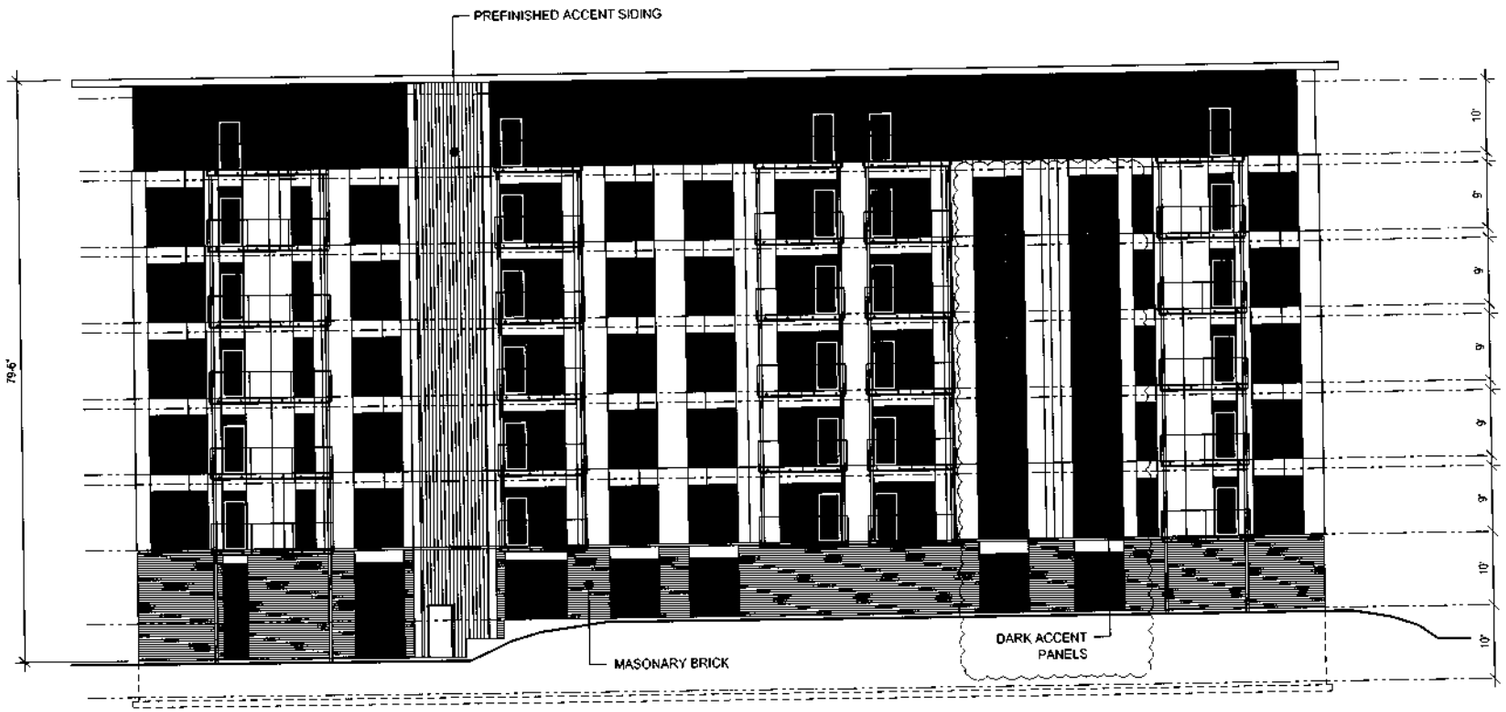
THE BANKS
Charlottetown, PE - February 10, 2025



FRONT ELEVATION
SCALE: 1/16"=1'-0"

APM ROYAL LEPAGE COMMERCIAL

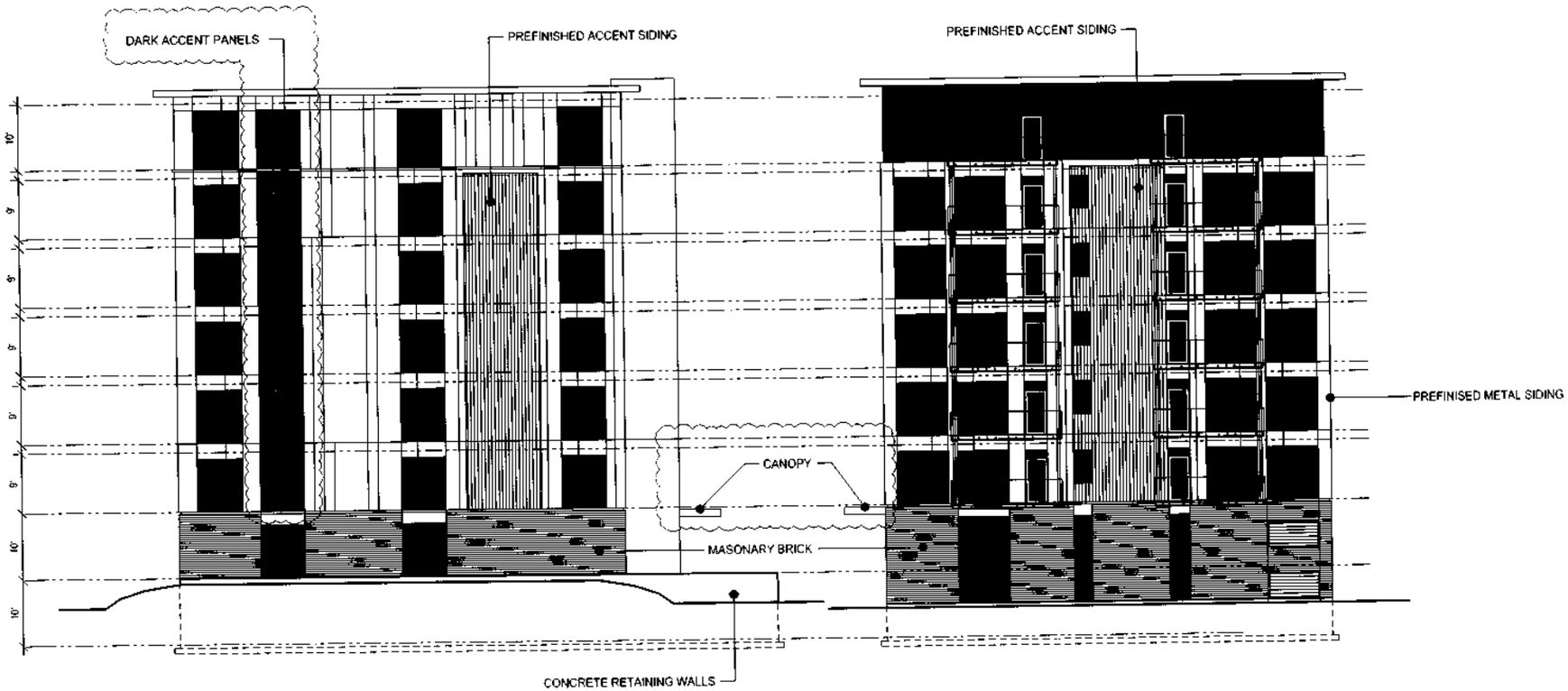
THE BANKS
Charlottetown, PE - February 10, 2025



REAR ELEVATION
SCALE: 1/16"=1'-0"

APM ROYAL LEPAGE COMMERCIAL

THE BANKS
Charlottetown, PE - February 10, 2025



LEFT ELEVATION
SCALE: 1/16"=1'-0"

RIGHT ELEVATION
SCALE: 1/16"=1'-0"

APM ROYAL LEPAGE COMMERCIAL

THE BANKS
Charlottetown, PE - February 10, 2025

Office of the Registrar of Deeds

For Queens County, Charlottetown, P.E. Island

Book 6128

Doc # 2948

The within document was registered on

The 7th Day of Apr A.D., 2025 on

COMMISSIONER WITNESSED

ASST REGISTRAR

Archived: December 5, 2025 10:48:29 AM
From: Gundrum, David
Sent: Thu, 24 Jul 2025 17:59:13
To: Jankov, Alanna Louise Aalders
Cc: Mayor of Charlottetown (Philip Brown) Muttart, Justin Beck, Norman Tweel, Mitchell Ramsay, Kevin Doiron, Bob McAleer, John MacKinnon, Trevor McCabe, Julie Bernard, Terry Ruus, Michael MacConnell, Brad
Subject: RE: PID 1100635
Importance: Normal
Sensitivity: None
Attachments:
2025-06-20 (15 Haviland) - Site Mobilization Plan.pdf

Hi Louise,

Thank you for your message regarding the proposed development by Mr. Banks and APM for the site on Haviland Street (PID# 1100635) as highlighted in the air photo at the end of this reply.

I can reinforce that as per today's date, the City has issued a Permit for site mobilization work-only on the property as per the attached site plan that APM provided which is inclusive only of installation of construction fencing around the perimeter of the site and locating a construction trailer on the property as per the attached.

We anticipate to receive (but have not yet received) a formal application for Building Permit from APM in the next number of days for a Phase 1 foundation-only Permit with respect to the project. Again, this formal submission has not been received by the City nor any preliminary materials ahead of formal submission either.

City Planning staff have been in touch with Provincial staff from the Department of Environment with regard to concerns around potential historic site contamination and to pre-empt a wider conversation with Provincial staff about these concerns ahead of formal Permits for actual construction being received. City staff have a call with Dept. of Environment staff at the Province scheduled for next week at this point to determine any next steps with respect to Provincial regulations that may apply as it regards potential for historic site contamination from past activities.

In preliminary discussions with the Province ahead of our formal call next week, we understand that the Province does not have any formal documentation in their archive to confirm that the site is indeed contaminated however we will be conducting a call to determine in the absence of any such documentation what Provincial regulations may still trigger here and any requirements that the Province could or may levy upon the Developers for future site investigative work as it pertains to potential environmental concerns. We will know more on this by this time next week after that call is had with Provincial staff. I will say that the Province does have legal authority to request that conditions be levied on any future Permit for construction that pertains to their regulations and/or they can request that certain work be carried out under their regulations prior to a Permit being issued by the local municipality.

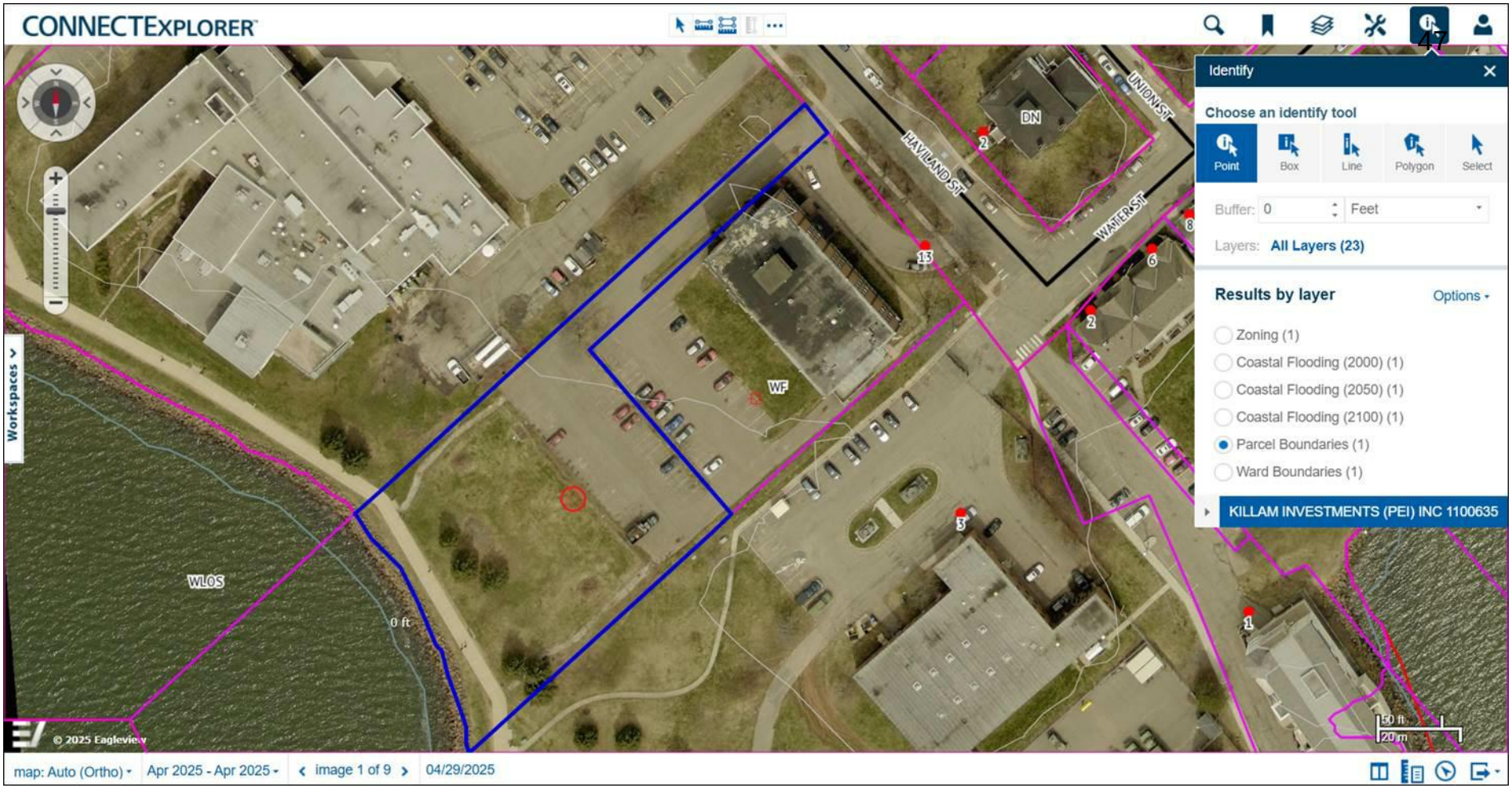
The Development Agreement you are referring to Louise pertained to a previous concept for a taller 8-storey building that would have 99 units on the site.

The current concept proposed to be built is a 7-storey building having 49 units for which a new and separate Development Agreement was entered into between the City and the Developer earlier this year. As such, the previous 2020 Agreement does not apply in this particular case based on the new and updated development proposal.

The requirement for step-back referred to for buildings within the Waterfront (WF) Zone that applies to this property has language that mentions this in regard to height greater than 13 metres (42.6 feet) above the "streetwall" (see second attachment to this message) where "streetwall" is taken to mean the face of a building projecting directly and immediately towards a public road or street. Since the building will be set some distance away from the public road in this case and does not abut directly onto a City street or public right-of-way, there is no streetwall or immediate projection of the building towards a street and therefore this requirement for step-back does not trigger in this case notwithstanding the proposed height of the building.

I hope this helps clarifies things further Louise and we will have a better understanding of the environmental aspect once we have had meeting with Provincial officials next week.

David



David Gundrum, RPP, MCIP
Manager of Development Planning

City of Charlottetown
Planning & Heritage Department
70 Kent Street
Charlottetown, Prince Edward Island
Canada, C1A 1M9
Cell: 902-393-5467

dgundrum@charlottetown.ca
www.charlottetown.ca

CHARLOTTETOWN
Great things happen here.

From: Jankov, Alanna <ajankov@charlottetown.ca>

Sent: Monday, July 21, 2025 2:44 PM
To: Louise Aalders <aalderslouise@gmail.com>; Gundrum, David <dgundrum@charlottetown.ca>
Cc: Mayor of Charlottetown (Philip Brown) <mayor@charlottetown.ca>; Muttart, Justin <jmuttart@charlottetown.ca>; Beck, Norman <nbeck@charlottetown.ca>; Tweel, Mitchell <mtweel@charlottetown.ca>; Ramsay, Kevin <kramsay@charlottetown.ca>; Doiron, Bob <rdoiron@charlottetown.ca>; McAleer, John <jmcaleer@charlottetown.ca>; MacKinnon, Trevor <tmackinnon@charlottetown.ca>; McCabe,Julie L. <jlmccabe@charlottetown.ca>; Bernard, Terry <tbernard@charlottetown.ca>; Ruus, Michael <mruus@charlottetown.ca>; MacConnell, Brad <bmacconnell@charlottetown.ca>
Subject: Re: PID 1100635

Good afternoon Louise.

Thank you for your email. I appreciate your questions and concerns. I will defer this to city of Charlottetown staff as council was not part of any decisions on this file - to date.

I also look forward to the answers.

Alanna
Alanna Jankov - Deputy Mayor
City Councillor - Ward one
Epekwitk/Charlottetown PEI
City Hall: 902-566-5548
Mobile: 902-393-3999
Pronouns: She/Her
www.alannajankov.ca

I live, work, and play on Mi'kma'ki, *the traditional territory of the Mi'kmaq people, original stewards of this land.*

I recognize that the hours I choose to work may not align with your own. Please do not feel obligated to respond to this email outside of your work hours

On Jul 21, 2025, at 2:34 'a0PM, Louise Aalders <aalderslouise@gmail.com> wrote:

Good afternoon,

I am writing to you today, as a concerned citizen of Charlottetown and on behalf of the residents of Renaissance Place at 13 Haviland St.

On Friday, July 18/25, there was a development permit (214-BLD-25) approved on July 15/25 posted by Pan American Properties on the site of PID 1100635 for site mobilization and construction hoarding, possibly starting on July 28/25, as was told to one of the residents here.

The unknown material that was used for infill to extend the shoreline was brought in sometime after 1952. One of the conditions of the permit states " All drainage

and flow of water is directed to either the natural watercourse or to Haviland St." Because of the unknown material, we expect there to be an environmental assessment completed before any site work, as to avoid any possible hazards TO neighbouring citizens, property or aquatic life.

Also, because of this flag shaped lot, why hasn't there been a letter for the variance or even a site specific amendment required?

In the development agreement dated January 6,2020 between the City of Charlottetown and Killam Investments, it states "2.11 Above a height of 42.6 ft, the building shall have a step back no less than 17.61 ft (10% of the lot width)."

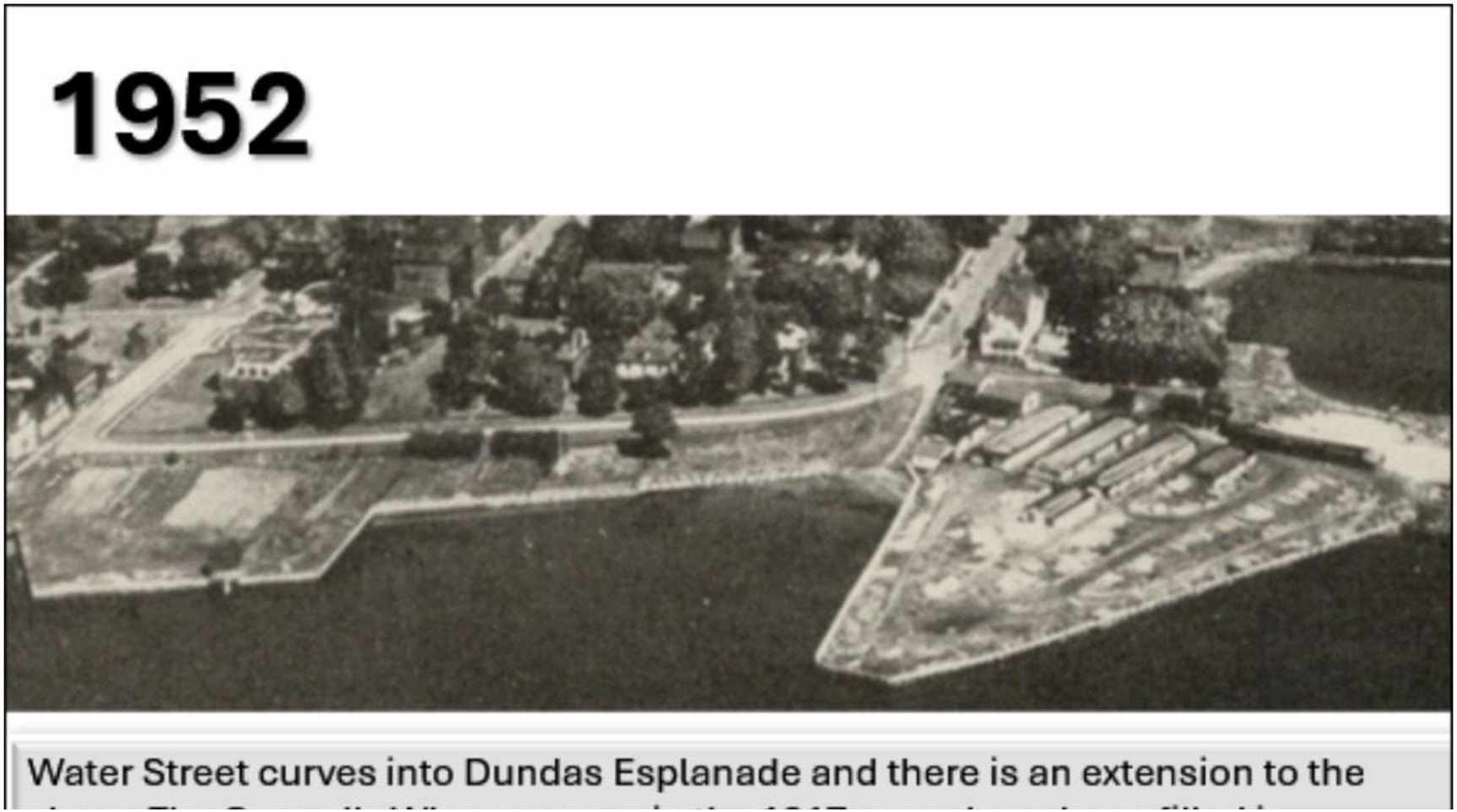
This project exceeds the height for step backs at 21+ meters. Where is the amendment for this? Has there been a change in the bylaw since 2020?

Your attention to these issues is of utmost importance and we expect a timely response.

Thank you

Louise Aalders for

Residents of Renaissance Place



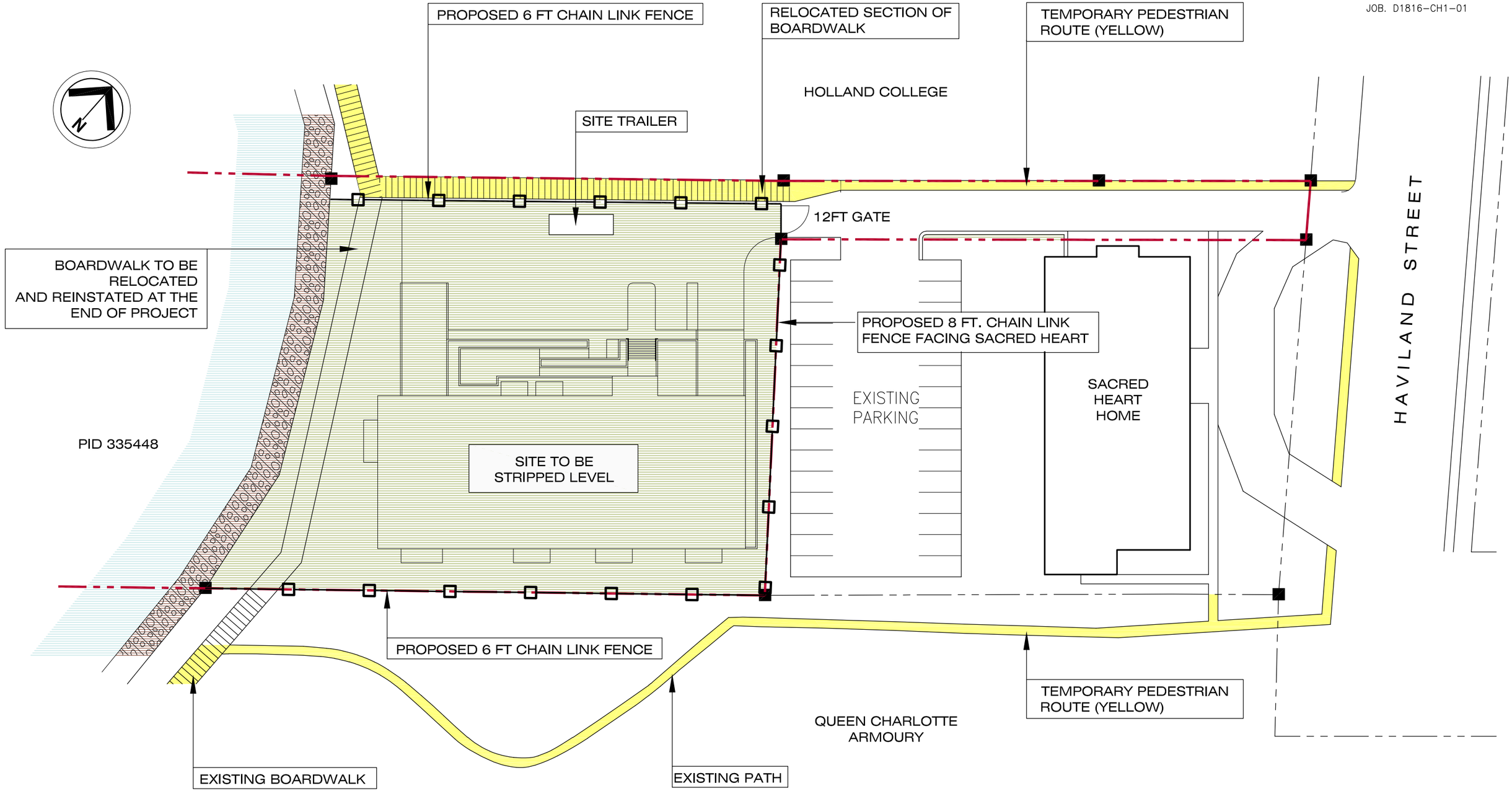
shore. The Connolly Wharves seen in the 1917 maps have been filled in (barrack buildings on the site?)

~1968

New Nurse's Residence for the Catholic Hospital is in left foreground with rest of hospital buildings behind. Sacred Heart Home has been built (centre) and Armoury building is in place. Dundas Esplanade is gone. The waterfront between the Nurse's Residence and old wharves has been filled in.

Images from https://sailstrait.wordpress.com/tag/lords-wharf/

JOB. D1816-CH1-01



SCALE - 1"=40'-0"

SITE MOBILIZATION & HOARDING PLAN - CH-1

APM ROYAL LEPAGE COMMERCIAL

THE HAVILAND

Charlottetown, PE - JUNE 12, 2025

Archived: December 5, 2025 10:50:00 AM
From: Louise Aalders
Mail received time: Fri, 8 Aug 2025 12:53:56
Sent: Fri, 8 Aug 2025 12:53:31
To: Mayor of Charlottetown (Philip Brown) Jankov, Alanna MacConnell, Brad dethompson@gov.pe.ca Gundrum, David Ruus, Michael
Cc: McCabe, Julie Tweel, Mitchell McAleer, John Beck, Norman Ramsay, Kevin Doiron, Bob MacKinnon, Trevor Muttart, Justin
Subject: Site removal of asphalt 15 Haviland St
Importance: Normal
Sensitivity: None
Attachments:
IMG_5289.png IMG_5290.png

Good morning,

Yesterday, APM was on site pulverizing the back parking area with no fencing to protect people and avoid possible property damage and today there have been three trucks removing that asphalt and soil offsite.

Earlier this morning, I contacted the Planning Dept, notified the Dept of Environment and others concerning this issue.

I have yet to receive a response as to whether APM has the required permit from Environment to proceed.

Please follow up regarding this matter and a response would be appreciated.

Thank you

Louise Aalders

Environment, Energy and Climate Action

Environnement, Énergie et Action climatique

PO Box 2000, Charlottetown
Prince Edward Island
Canada C1A 7N8

C.P 2000, Charlottetown
Île-du-Prince-Édouard
Canada C1A 7N8

PERMIT NO: WWBZ-2025-0165

PRINCE EDWARD ISLAND BUFFER ZONE ACTIVITY PERMIT

In accordance with the authority provided by Sections 3 and 6 of the Prince Edward Island Watercourse and Wetland Protection Regulations, permission is granted to:

Name: **Tim Banks (Pan American Properties)**
Address: **PO BOX 2859 Charlottetown, PEI C1A 8C4**

to undertake an activity in a buffer zone, namely:

Boardwalk Construction and Tree Cutting

on Provincial Property Number(s) 1100635 situated at Charlottetown in Queens County, PEI with coordinates of 46.23028 latitude and -63.13043 longitude.

This permit is, by order of the Minister effective on: **Thursday, August 14, 2025**
and expires on: **Wednesday, December 31, 2025**

and is subject to the full implementation of and compliance with the following terms and conditions:

[A] That all reasonable measures (in the opinion of the Minister) must be taken to minimize siltation of any watercourse/wetland.
[B] That the death of fish or any permanent alteration to, or destruction of fish habitat is prohibited unless the work, undertaking or activity is authorized by DFO and the work, undertaking or activity is carried on in accordance with the conditions established by DFO.
[C] That it is the applicant's responsibility to obtain any other necessary forms of approval or permission from other government agencies (including federal, provincial, and municipal departments) and/or private landowners prior to commencement of the work.
[D] That the issuance of this permit or approval does not imply any warranty against damages due to weather and/or climate change. Government shall not be liable for any claims, demands, losses, costs, damages, actions, suits or proceedings of every nature and kind whatsoever arising out of or resulting from the issuance of this permit or approval as a result of weather or climate change.
[E] That the Proponent must ensure that a copy of this permit is maintained on the job site at all times for reference and inspection purposes.
[F] That work takes place as outlined in your Watercourse, Wetland and Buffer Zone Activity Permit Application dated August 6, 2025, and emailed site plan D1816-CH-1-04, Site Mobilization & Hoarding Plan-CH-1, The Haviland, Dated August 13, 2025.
[G] That the boardwalk must be constructed from materials which are not toxic to aquatic life.
[H] That the proponent/contractor must ensure that all work is stabilized as required to prevent sedimentation of the wetland prior to leaving the construction site; unstable material/disturbed areas that have the potential of sediment release into the wetland/watercourse must not be left exposed to the elements without the proper erosion/sediment controls in place.
[I] That the refueling of equipment or storage of any fuel, lubricants or other toxic chemicals must occur a minimum of thirty metres from any watercourse/wetland and the contractor must have on site at all times an Emergency Spill Response Kit, appropriately sized for the equipment in use on-site. Any spills regardless of size, must be reported to the Environment Emergency Response number at 1-800-565-1633.
[J] That equipment must arrive on site in a clean/washed condition and must be maintained free of fluid leaks. Any equipment that has been in contact with a marine environment must be cleaned of any sediment, plants or animals and pressure washed with fresh water and/or sprayed with undiluted vinegar prior to being mobilized at the work site.

Tel/Tél : 902 368 5044 *princeedwardisland.ca* Fax/Téléc. : 902 368 5830

Environment, Energy and Climate Action

Environnement, Énergie et Action climatique

PO Box 2000, Charlottetown
Prince Edward Island
Canada C1A 7N8

C.P 2000, Charlottetown
Île-du-Prince-Édouard
Canada C1A 7N8

PERMIT NO: WWBZ-2025-0165

[K] That the footprint of construction in the buffer zone (operation of equipment, disturbance of the ground, etc) must be kept to the minimum required to complete the project.
[L] That a maximum of 2 live trees may be cut down in the buffer zone. A replant of 6 trees must take place within the Buffer Zone to offset this loss consisting of any mix of the following native species: Red Maple, White Birch, White Spruce, White Pine, Red Oak. No single species may make up more than 50% (3 trees) of the trees planted. Each tree must have a minimum height of 60 cm (2 Feet) and planted at a density of not less than 1.5m (5 ft) by 1.5 m (5 ft spacing between all trees). Clearly mark the location of each tree planted with a survey stake, wire flag or similar marking method to allow for identification of the planted trees during future site inspections.
[M] That all other live trees and shrubs must be maintained, i.e. not cut down, traversed by equipment, etc.
[N] That the measurements used to determine the Buffer Zone for this project must be the measurements as outlined and measured by Department of Environment staff on July 31, 2025. This map will be sent along with this permit for reference.
[O] That the works to take place under this permit are to be for the boardwalk and tree cutting works only, no building, land stripping and leveling, or development has been approved for PID 11000635 from Department of Environment, Energy and Climate Action.

Date issued: Thursday, August 14, 2025

If you have any questions regarding the foregoing permit conditions, please contact Shawn Banks at (902)314-2737 or sabanks@gov.pe.ca.

Signed: Shawn Banks

Shawn Banks

Environment Officer

Tel/Tél : 902 368 5044 *princeedwardisland.ca* Fax/Téléc. : 902 368 5830

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PERMIT NO: WWBZ-2025-0165

PRINCE EDWARD ISLAND WATERCOURSE / WETLAND AND BUFFER ZONE ACTIVITY PERMIT MODIFICATION

In accordance with the authority provided by Sections 2, 3 and 6 of the Prince Edward Island Watercourse and Wetland Protection Regulations, a modification of the Watercourse/Wetland and Buffer Zone Activity Permit number **WWBZ-2025-0165** is granted to:

Name: **Tim Banks (Pan American Properties)**
Address: **Charlottetown, PEI C1A 8C4**
Activity: **Boardwalk Construction, Tree Cutting**

on Provincial Property Number(s) 1100635 situated at Charlottetown in Queens County, PEI with coordinates of 46.23028 latitude and -63.13043 longitude.

This permit modification expires on **Wednesday, December 31, 2025** and is by order of the minister subject to the full implementation of and compliance with the existing permit and the following additional terms and conditions:

and is subject to the full implementation of the original permit issued as well as the following additional terms and conditions:

[P] That the land stripping, leveling, and excavation works to take place under this permit modification are to be in the footprint of the boardwalk, and the area of the found storm drainpipe (as outlined in email on Wed 8/20/2025) only, no building or development has been approved for PID 11000635 from Department of Environment, Energy and Climate Action, and all other permit conditions are still in effect.

If you have any questions regarding the foregoing permit conditions, please contact Shawn Banks at (902)314-2737 or sabanks@gov.pe.ca.

Date issued: Friday, August 22, 2025

Signed: Shawn Banks

Shawn Banks

Environment Officer

Tel/Tél : 902 368 5044 *princeedwardisland.ca* Fax/Téléc. : 902 368 5830

Archived: December 5, 2025 10:52:09 AM
From: Louise Aalders
Mail received time: Mon, 25 Aug 2025 13:09:09
Sent: Mon, 25 Aug 2025 13:08:23
To: Gundrum, David Ruus, Michael toddsutcliffe@charlottetown.ca
Cc: Mayor of Charlottetown (Philip Brown) Jankov, Alanna
Subject: Safety concerns - 15 Haviland St
Importance: Normal
Sensitivity: None
Attachments:
IMG_5533.jpeg IMG_5531.jpeg IMG_5530.jpeg

Good morning,

APM has recently removed the soil from this property without construction fencing to this date. Fencing was part of the approved permit (214-BLD-25).

The depth is approximately 2-3 ft in some areas and although they have put up a no trespassing sign on the driveway gate, it is still possible for people to enter their site from other areas. We are concerned for public safety. A child may run towards that area not realizing there is a substantial drop and could get hurt, seriously. It is very close to the walkway between Renaissance Place and the Armoury, as you can see in one of the photos. There is also fencing laying on the soil that could be a hazard.

We request that this issue is addressed immediately so as to prevent any possible injury to citizens and visitors.

Respectfully,

Louise Aalders


IRVING

Environment, Energy and Climate Action

PO Box 2000, Charlottetown
Prince Edward Island
Canada C1A 7N8

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Île-du-Prince-Édouard
Canada C1A 7N8

PERMIT NO: WWBZ-2025-0240

PRINCE EDWARD ISLAND WATERCOURSE / WETLAND AND BUFFER ZONE ACTIVITY PERMIT

In accordance with the authority provided by Sections 2, 3 and 6 of the Prince Edward Island Watercourse and Wetland Protection Regulations, permission is granted to:

Name: **Tim Banks (Pan American Properties)**
Address: **Charlottetown, PEI C1A 8C4**

to undertake an activity in a watercourse / wetland and adjacent buffer zone, namely:

Landscaping in a Buffer Zone, Road Construction, Other, Boardwalk Construction, Shoreline Stabilization

on Provincial Property Number(s) 1100635 situated at Charlottetown in Queens County, PEI with coordinates of 46.22849 latitude and -63.13119 longitude.

This permit is, by order of the Minister effective on: **Thursday, November 20, 2025**
and expires on: **Friday, December 31, 2027**

and is subject to the full implementation of and compliance with the following terms and conditions:

[A] That all reasonable measures (in the opinion of the Minister) must be taken to minimize siltation of any watercourse/wetland.
[B] That the death of fish or any permanent alteration to, or destruction of fish habitat is prohibited unless the work, undertaking or activity is authorized by DFO and the work, undertaking or activity is carried on in accordance with the conditions established by DFO.
[C] That it is the applicant's responsibility to obtain any other necessary forms of approval or permission from other government agencies (including federal, provincial, and municipal departments) and/or private landowners prior to commencement of the work.
[D] That the issuance of this permit or approval does not imply any warranty against damages due to weather and/or climate change. Government shall not be liable for any claims, demands, losses, costs, damages, actions, suits or proceedings of every nature and kind whatsoever arising out of or resulting from the issuance of this permit or approval as a result of weather or climate change.
[E] That the Proponent must ensure that a copy of this permit is maintained on the job site at all times for reference and inspection purposes.
[F] That heavy equipment must not operate in the watercourse.
[G] That all barren soil within fifteen metres of any watercourse/wetland must be seeded, hay mulched and stabilized immediately upon completion of construction.
[H] That the operation of a motorized vehicle in the buffer zone may only take place in support of activities conducted under this permit.
[I] That all work must take place as outlined in your Application for a Watercourse, Wetland and Buffer Zone Activity Permit dated November 4, 2025.
[J] That the installation of environmental protection measures (e.g. silt fencing, check dams) must be an initial step in the construction sequence, and that these and other erosion/sediment control measures (e.g. floating booms, mulching, erosion control blankets, seeding, etc) must be installed and maintained as required to prevent siltation of any watercourse/wetland.
[K] That the refueling of equipment or storage of any fuel, lubricants or other toxic chemicals must occur a minimum of thirty metres from any watercourse/wetland and the contractor must have on site at all times an Emergency Spill Response Kit, appropriately sized for the equipment in use on-site. Any spills regardless of size, must be reported to the Environment

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PERMIT NO: WWBZ-2025-0240

Emergency Response number at 1-800-565-1633.
[L] That equipment must arrive on site in a clean/washed condition and must be maintained free of fluid leaks. Any equipment that has been in contact with a marine environment must be cleaned of any sediment, plants or animals and pressure washed with fresh water and/or sprayed with undiluted vinegar prior to being mobilized at the work site.
[M] That any disturbance of the watercourse and or buffer zone caused by the project must be repaired as soon as the work is completed.
[N] That the deposition of material or placement of construction works must not exceed one metre (3.3 feet) on the seaward (exterior) side of the toe of the existing bank and that the deposition of material must not change the natural contours of the shoreline.
[O] That the material used for shoreline stabilization must be clean and uncontaminated and may include; rock (No PROTRUDING RE-BAR, SHALE, CONSTRUCTION RUBBLE (IE: bricks & concrete blocks), ORGANIC MATTER (IE: trees, soil) or ASPHALT is permitted in the shoreline stabilization material).
[P] That the material used for shoreline stabilization must be securely placed to avoid creation of a safety hazard.
[Q] That filter fabric (Geotextile) may be used in combination with armour to reduce undermining and possible structural failure.
[R] That the exterior face of the structure must be keyed into the beach profile a minimum of 60 cm (2 feet) to help prevent undermining and possible structural failure.
[S] That the structure must be keyed into the bank at both ends to help prevent scouring and possible structural failure.
[T] That any disturbance of the beach/or shoreline must be repaired as soon as the work is completed.
[U] That any holes created on the shoreline must be filled before the contractor leaves the site for the day.
[V] That any shoreline protection work must be completed from the top of the bank, and only if it can be done by not disturbing any trees or shrubs.
[W] That where required, all approvals around any relevant municipal bylaws must be obtained from the appropriate municipality before any works are to take place.
[X] That all permitted activities are to take place as outlined in "Surface and Grading Plans, DWG. C100-Rev.2, File no.C25198-C100-02" dated, June 6, 2025 and "Servicing Plan, DWG. C101-Rev.2-File no.C25198-C100-02" dated, June 6, 2025.

Date issued: Thursday, November 20, 2025

If you have any questions regarding the foregoing permit conditions, please contact Greg Wilson at or gbwilson@gov.pe.ca.

Signed: _____

Greg Wilson

Director of Environment Regulatory Division

Tel/Tél : 902 368 5044 *princeedwardisland.ca* Fax/Téléc. : 902 368 5830

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Geotechnical ▪ Environmental ▪ Materials Testing

GEOTECHNICAL INVESTIGATON REPORT

Haviland Street Waterfront Development

13 Haviland Street
Charlottetown
Prince Edward Island
PID# 335448

Project # 180401
April 23 2018

Prepared for:
APM Construction Services Inc.
c/o Mr. Ian Harper, P.Eng.
PO Box 2859
16 McCarville Street
Charlottetown, Prince Edward Island
C1E 2A6

Prepared By:
EastTech Engineering Consultants Inc.
1314 Mount Stewart Road
Mount Stewart, Prince Edward Island
C0A 1T0

Introduction

EastTech Engineering Consultants Inc. was retained by APM Construction Services Inc. to complete a geotechnical investigation at a site located at 13 Haviland Street in Charlottetown, Queens County, Prince Edward Island (see Figure 1). The site is the proposed location of an eight-story residential building. The purpose of this investigation was to collect detailed information pertaining to the soils, bedrock, and groundwater conditions on the site and to provide recommendations for the construction of the new building, driveways, and parking areas, as well as the earthworks associated with the proposed undertaking.

Scope of Work

In agreement with APM Construction Services Inc. the following scope of work has been completed as a part of this geotechnical investigation:

- ✓ A preliminary review of the locations of all underground services in the vicinity of the dig area was conducted between representatives from the City of Charlottetown's municipal infrastructure department, Maritime Electric, Bell, Eastlink, and EastTech Engineering.
- ✓ Two (2) test pits were excavated on the site to collect the required geotechnical data for this undertaking.
- ✓ Three (3) boreholes were extended on the site to obtain samples of bedrock and overburden soils.
- ✓ One (1) monitoring well was installed on the site to accurately determine the groundwater elevation on the site and to monitor seasonal fluctuations in groundwater levels.
- ✓ A geotechnical report outlining the findings of this investigation, test pit logs, borehole logs, site plans, and recommendations for the building foundation construction and project earthworks has been included herein.

Site Description

The site is located to the southwest of an existing apartment building that is present at 13 Haviland Street. The Culinary Institute of Canada campus is located to the north and west of the site. Several residential properties are located to the northeast and east of the site. The Queen Charlotte Armory and Charlottetown Harbour are located to the east and southwest of the site, respectively. The site is relatively level, with the general topography of the area surrounding the site trending southwest towards the Charlottetown Harbour.

Preliminary Underground Service Locates

A preliminary review of the locations of all underground services in the vicinity of the dig area was conducted with representatives from the City of Charlottetown's municipal infrastructure department, Bell, Eastlink, and Maritime Electric prior to excavating any test pits. No underground infrastructure was affected by the excavations completed on the site.

Geotechnical Site Work

On Tuesday April 3rd, 2018 EastTech Engineering staff were on-site to complete the site work for this geotechnical investigation. Two (2) test pits were put down under the direction of Dave Richard, CET, using a rubber tire backhoe provided by Birt & MacKay Construction Ltd. The test pits were put down to a maximum depth of 3.97 m. On April 13th, 2018 three (3) geotechnical boreholes were put down on the

site to collect more detailed information on the existing overburden soils, bedrock, and groundwater on the site. A test pit / borehole location plan has been included with this report as Figure 2.

Site Findings

Soils encountered during this geotechnical investigation can be generally described as Root Mat & Topsoil overlying Compact Sandstone Fill consisting of Reddish Brown Sand with Some Gravel, Cobbles & Boulders and Trace Silt. A Tidal Fluvial Deposit consisting of Grey to Black Sand was identified below the Fill Material at depth in all of the test pits and boreholes that were put down in this investigation. Compact to Dense Glacial Till was encountered below the Tidal Fluvial Deposit in the majority of the test pits and boreholes, which was overlying Sandstone Bedrock.

Bedrock was identified in the three boreholes at depths ranging from 4.02 m to 4.63 m below the existing ground surface.

Groundwater was encountered in all of the test pits and boreholes at depths ranging from 1.39 m to 2.40 m below the existing ground surface.

A more detailed account of the sub-surface conditions that were encountered in this investigation can be found in the table below and in the borehole & test pit logs that have been appended to this report.

Foundation for Structure

Given the size and height of the proposed building, the presence of high groundwater table, the presence of an natural Tidal Fluvial Deposit of varying consistency at depth, and the relatively shallow depth to Bedrock, we propose two options for the foundation design of the structure:

1. A deep foundation system consisting of a series of steel H Piles or Pipe Piles embedded into Bedrock.
2. An intermediate foundation system consisting of a series of concrete piers & grade beams.

Option 1 – Steel H Piles or Pipe Piles Embedded into Bedrock

For a deep foundation system consisting of concrete pile caps connected to Steel H Piles or Steel Pipe Piles, all piles should be driven into the Sandstone Bedrock until the recommended driving criteria of 10 blows per 25 mm of penetration has been reached. Typically, 1-2 meters of embedment into bedrock is achieved before the recommended driving criteria has been met. Driving criteria should be confirmed 24 hours after initial pile driving activities by re-taping piles. If driving criteria is not reached, pile driving activities should continue until the specified criteria has been met. The allowable pile bearing capacities with a factor of safety of 3.0 should be used, unless pile dynamic analysis (PDA) is conducted in conjunction with pile driving activities. Piles should be driven with pile driving equipment that is capable of delivering 415 – 625 N-m/cm^2 per blow.

Steel piles should be protected from corrosion with a cathotic protection system to mitigate the effects of corrosion, which can reduce ultimate pile bearing capacity. Steel H Piles and Pipe Piles should conform with the standards set forth in CAN/CSA G40.20/21. Any welding required on piles shall be conducted in compliance with CAN/CSA W59.

All pile driving activities should be continuously monitored by the geotechnical consultant during installation. Inspection requirements for pile driving activities are outlined in the Canadian Foundation Engineering Manuel (2006). Inspection for deep foundations such as this should focus on driving records and reaching the required driving criteria. An inspection plan should be developed by the geotechnical consultant prior to conducting pile driving activities.

Allowable bearing capacities and uplift capacities have been provided for several Steel H Pile and Pipe Pile sizes in the table below. If additional bearing capacities for different pile sizes are required for foundation design, contact the geotechnical consultant with required loadings for the structure or proposed pile sizes.

Option 2 – Concrete Piers Connected to Grade Beams

A foundation consisting of concrete piers connected to grade beams would be an acceptable alternative for the proposed structure. Concrete piers placed on competent Sandstone Bedrock can be designed with an allowable bearing capacity of 750 kPa. Total and differential settlements under the proposed loading will be less than 25 mm and 15 mm, respectively. The Sandstone Bedrock subgrade for all concrete piers should be inspected by the geotechnical consultant to ensure that the material is competent.

Efforts should be made to pump groundwater from the pier borings or excavations as heavy groundwater infiltration was observed during the excavation of the test pits on the site. The effects of tidal fluctuations may influence groundwater levels during construction, particularly near the Charlottetown Harbour.

If the piers are bored out, the use of forms may be required to prevent the hole from caving in due to groundwater infiltration. If the piers are to be excavated, the work should be completed with a ditching bucket to minimize the disturbance of the Sandstone Bedrock and to ensure that all loose soils are removed from the bearing surface interface with the piers. All excavation walls should be cut back and sloped as per applicable PEI Occupational Health & Safety Regulations. Given the presence of groundwater near the surface on the site, it is unlikely that and materials excavated from the hole will be suitable for re-use as backfill. If groundwater can be maintained, structural fill meeting the Prince Edward Island Department of Transportation Infrastructure & Energy (PEIDTIE) specifications for Premium Borrow is recommended for pier backfilling purposes. If groundwater cannot be controlled, the use of drainage gravel may be required until the piers can be backfilled to above groundwater levels in the excavation. The backfilling of all piers should be completed under the direct supervision of the geotechnical consultant.

Grade beams connecting the concrete piers can be cast directly on the existing Fill Materials that are present on the site. If the desired level of the grade beam is above the elevation of the top surface of the existing Fill Materials, structural fill may be used to build the site up. Structural fill meeting the Prince Edward Island Department of Transportation Infrastructure & Energy (PEIDTIE) specifications for Select Borrow would be suitable for this application. Structural fill should be placed in lifts not exceeding 12” in thickness and should be compacted to 100% of its Standard Proctor Dry Density at optimum moisture content.

Summary Table of Allowable Bearing Capacities for Steel H Piles & Pipe Piles

PILE TYPE	GRADE OF STEEL MPa	SECTION AREA m^2	PILE CAPACITY KN	TIP AREA m^2	SURFACE AREA m^2/m	NEGATIVE FRICTION KN	ULTIMATE CAPACITY KN	ALLOWABLE CAPACITY KN	ALLOWABLE CAPACITY KN	ALLOWABLE UPLIFT CAPICITY KN
H Pile Size										
HP 200 x 54	300	0.0068	2040	0.040	0.80	0	749	375	250	55
HP 250 x 85	300	0.0108	3240	0.063	1.00	0	1144	572	381	68
HP 310 x 132	300	0.0159	4770	0.090	1.24	0	1608	804	536	85
Steel Pipe Pile Size										
OD10" x 0.500"	300	0.0096	2880	0.040	0.80	0	919	460	306	53
OD12" x 0.500"	300	0.0117	3495	0.063	1.00	0	1297	649	432	64
OD14" x 0.500"	300	0.0137	4104	0.090	1.24	0	1740	870	580	75
						Factor of Safety		2.0	3.0	3.0

NOTES:
Recommended refusal for steel piles is 10 blows / 25 mm with a Min. 415 N-m/cm^2 & Max. 625 N-m/cm^2.
Factor of Safety = 2 based on confirmation of bearing capacity by Dynamic Pile Analysis or Pile Load Test
Factor of Safety = 3 without Dynamic Pile Analysis
Pile dimensions obtained from LB Foster Piling product specifications
Pile end bearing capacities determined based on work completed in Rhenman & Broms (1971)
Pile skin friction bearing capacities determined using metodology outlined in Craig's Soil Mechanics Seventh Edition
H Pile capacity is limited by soil & bedrock strength

Negative Skin Friction

No soft, highly compressible, or deleterious deposits were noted at depth during this investigation. Therefore, the effects of negative skin friction will be negligible if the structure is to be reinstated at or near existing ground surface grades. If backfill material is to be placed to bring the site grades to above existing elevations, the existing Rootmat & Topsoil deposit should be removed and the bearing surface inspected by the geotechnical consultant prior to placing additional fill on the site. The placement of addition of fill materials on the site should increase vertical, lateral, and uplift bearing capacities, however the geotechnical consultant should be advised of all fill materials being placed on the site.

Foundation Backfilling

Backfill material placed for the exterior foundation walls should consist of Select Borrow compacted in lifts to 98% of its Standard Proctor Maximum Dry Density at optimum moisture content. Common Borrow or excavated site material may be used in place of Select Borrow for exterior backfilling if the material is approved by the geotechnical consultant prior to placement. Soils immediately surrounding the building should be graded to direct surface water away from the building's foundation once backfilling has been completed.

Concrete Slabs on Grade

The concrete floor slabs may be cast over existing fill materials or placed structural fill (Select Borrow) compacted to 100% of its Standard Proctor Maximum Dry Density at optimum moisture content. The concrete floor slabs should be placed on a compacted free draining granular base material that is a minimum of 8" thick. Material meeting the PEIDTIE specifications for Class A Gravel would be acceptable for use as concrete slab granular base material. A vapor barrier is also recommended for use under all concrete slab on grade construction.

Site Seismic Classification

The proposed structure may be designed using a Site Seismic Classification of Class "C" as per the National Building Code of Canada building requirements.

Exterior Concrete Structures

Any exterior concrete structures such as sidewalks or curbs that are to be installed should be supported by a minimum 12" sub-base and a 6" base constructed of material meeting the PEIDTIE specifications for Select Borrow and Class A Gravel, respectively. All insitu subgrade soils should be inspected by the geotechnical consultant prior to the placement of sub-base and base granular materials. Any suspect areas in the insitu subgrade should be remediated at the discretion of the geotechnical consultant. Exterior concrete structures should be graded to allow for positive drainage as to avoid collection and retention of surface water.

Parking Lot & Driveway Areas

Site preparation for parking lot and driveway construction should consist of the removal of the Root Mat & Topsoil deposits into the exiting Fill Materials identified on the site to a depth to facilitate the installation of parking lot and driveway materials as prescribed below. The insitu bearing soils at the base of the excavation (*i.e.,* subgrade soils) should be compacted with a vibratory roller under the direct supervision of the geotechnical consultant. Any suspect or soft areas identified should be removed and replaced with suitable fill that is approved by the geotechnical consultant and compacted to 100% of its standard proctor dry density. Efforts should be made to direct surface water away from subgrade soils

below parking lot and driveway areas, as it may be susceptible to softening under conditions of high moisture. Traffic should also be minimized on all insitu bearing surfaces if they become wet. Parking lot & paved area construction should consist of the following materials:

Component	Material	Minimum Thickness	Installation Instructions
Asphalt	B Seal	40 mm	• Install as per PEIDTIE General Provisions and Contract Specifications for Highway Construction. • Testing of asphalt hot mixes is recommended to ensure compliance with PEIDTIE General Provisions and Contract Specifications for Highway Construction • Collection and testing of asphalt core samples is recommended after placement to evaluate thickness and compaction requirements as per PEIDTIE General Provisions and Contract Specifications for Highway Construction.
	A Base	60 mm	
Granular Base	Class A Gravel	150 mm	• Material should comply with PEIDTIE specifications for Class A Gravel. • Compact to 100% Standard Proctor Dry Density at Optimum Moisture Content • Material to be installed in one or two lifts.
Granular Sub-Base	Select Borrow	300 mm	• Material should comply with PEIDTIE specifications for Select Borrow. • Compact to 100% Standard Proctor Dry Density at Optimum Moisture Content in two lifts. • Additional Select Borrow or an approved alternative may be required to build parking lot and driveway areas up to desired grades, depending on final parking lot design elevations.

Note that the specifications provided above are for light duty traffic areas. Any parking lot or driveway areas that are to be subject to heavy traffic such as dump trucks, long haul trucks, heavy equipment, etc. should be designed accordingly to facilitate these anticipated loadings.

Winter Construction Activities

If construction activities are to be conducted during winter months or during periods when sub-zero temperatures are encountered, additional efforts must be made to ensure that all Glacial Till bearing soils and Structural Fill Materials (*i.e.*, building pad materials, granular base, granular sub-base, *etc.*) are not subject to freezing conditions. The installation of winter shelters, heating sources, or other measures may be required to prevent bearing soils and structural fill materials from freezing. Efforts should also be made to ensure that structural fill materials are not subject to freezing conditions prior to their delivery to the site. Additional inspection and oversight by the geotechnical consultant is recommended during all winter construction activities associated with site earthworks, foundation installation, and parking lot / driveway construction.

Crane Pad Construction

If a crane is to be used for construction and a crane pad is required on the site, the geotechnical consultant should be advised to ensure that the pad is designed and constructed to have an appropriate soil bearing capacity. The placement of any structural fill that is to be used in a crane pad should be directly monitored by the geotechnical consultant.

Limitations

The recommendations provided in this report are based on the observations made during the field investigation, the site conditions at the time of the investigation, and our understanding of the projects geotechnical requirements as documented herein. Further excavation or investigation may reveal unforeseen issues that may influence our recommendations. Furthermore, weather and seasonal conditions may also alter the geotechnical conditions on the site. As such, EastTech Engineering Consultants Inc. should be notified immediately if the conditions as documented herein do not reflect the conditions on the site at the time of construction.

Conclusions & Closing Remarks

I trust that the information provided is sufficient for your current needs but do not hesitate to contact the undersigned if further clarification is required. We thank you for choosing EastTech Engineering Consultants Inc. as your geotechnical consultant for this undertaking and look forward to working with you and your organization on any future projects where our services may be required.

Sincerely;

Chris MacPherson

Chris MacPherson *P.Eng. CESA*
EastTech Engineering Consultants Inc.

Attachments: ***Figure 1 - Project Location Map (1 page)***
Figure 2 – Borehole Test Pit Location Plan (1 page)
Borehole & Test Pit Logs (6 pages)

Project	13 Haviland Street Waterfront Development
Project #	180403
Client	APM Construction Services Inc.
Location	13 Haviland Street, Charlottetown, Prince Edward Island
Figure Title	Figure 1 - Project Locator Map

Comments

Project	13 Haviland Street Waterfront Development
Project #	180403
Client	APM Construction Services Inc.
Location	13 Haviland Street, Charlottetown, Prince Edward Island
Figure Title	Figure 2 - Test Pit Location Plan

Comments

PROJECT	13 Haviland Street Waterfront Development	BOREHOLE #	BH1-M
CLIENT	APM Construction Services Inc.	JOB #	180401
CONTACT	Ian Harper	SHEET	1 of 1
LOCATION	Charlottetown, Prince Edward Island	LOGGED BY	C. MacPherson
DRILL DATE	April 13, 2018	REVIEWED BY	D. Richard
DRILLING CONTRACTOR	Lantech Drilling Services	BOREHOLE DEPTH	6.41 m
METHOD	Track Mounted Rotary Drill	WATER DEPTH	2.40 m

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GROUND ELEVATION	100.0 m
DATUM	Assumed
WATER ELEVATION	97.60 m

PRELIMINARY BORING LOG

DEPTH (m)	ELEVATION (m)	SAMPLE TYPE	REC (%)	Field Observed Moisture	C_u (kPa)	Q_u (MPa)	RQD (%)	SPT N Values	SPT N - Value / % Moisture Content (0 10 20 30 40)	DESCRIPTION	SOIL SYMBOL	COMMENTS
0.50	99.39	Auger	100.0	Moist	-	-	-			Asphalt Fill - Loose to Compact Reddish Brown Sand with Some Sandstone, Cobbles & Boulders, and Trace Silt		Monitoring Well Installed in Borehole to Monitior Groundwater Levels and Observe Seasonal Fluctuations on the Site
1.00	98.78	SPT	50.0	Moist	-	-	-	3, 2, 4, 12 (6)				
1.50	98.17	SPT	66.7	Wet	-	-	-	12, 9, 6, 6 (15)				
2.00	97.60											
2.50	97.56	SPT	25.0	Wet	-	-	-	23, 10, 6, 4 (16)				
3.00	96.34	SPT	33.3	Wet	-	-	-	3, 3, 6, 10 (9)		Tidal Fluvial Deposit - Loose to Compact Black to Grey Sand with Some Silt		
3.50	95.60	SPT	75.0	Wet	-	-	-	7, 12, 11, 14 (23)				
4.00						12.6				Bedrock - Poor to Fair Reddish Brown Medium to Fine Grained Sandstone with Intermittent Mudstone Bedding Throughout		
4.50						8.0						
5.00	95.12	Core	94.4				52.8					
5.50												
6.00	93.59	Core	100				25.9					
6.50												Borehole Terminated at 6.41 m Depth
7.00												
7.50												
8.00												

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PROJECT	13 Haviland Street Waterfront Development	BOREHOLE #	BH2
CLIENT	APM Construction Services Inc.	JOB #	180401
CONTACT	Ian Harper	SHEET	1 of 1
LOCATION	Charlottetown, Prince Edward Island	LOGGED BY	C. MacPherson
DRILL DATE	April 13, 2018	REVIEWED BY	D. Richard
DRILLING CONTRACTOR	Lantech Drilling Services	BOREHOLE DEPTH	6.41 m
METHOD	Track Mounted Rotary Drill	WATER DEPTH	1.52 m
		GROUND ELEVATION	99.28 m
		DATUM	Assumed
		WATER ELEVATION	97.76 m

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PRELIMINARY BORING LOG

DEPTH (m)	ELEVATION (m)	SAMPLE TYPE	REC (%)	Field Observed Moisture	C_u (kPa)	Q_u (MPa)	RQD (%)	SPT N Values	SPT N - Value / % Moisture Content (0 10 20 30 40)	DESCRIPTION	SOIL SYMBOL	COMMENTS
0.00										Rootmat & Topsoil - Loose Brown Silty Sand with Trace Organics & Fine Roots		
0.50	98.67	SPT	58.3	Moist	-	-	-	1, 5, 5, 6 (10)		Fill - Compact Reddish Brown Sand with Some Sandstone, Cobbles & Boulders, and Trace Silt		
1.00	98.06	SPT	75.0	Moist	-	-	-	9, 12, 15, 13 (27)				
1.50	97.76											
	97.45	SPT	50.0	Wet	-	-	-	5, 6, 4, 4 (10)				
2.00	96.84	SPT	50.0	Wet	-	-	-	3, 12, 9, 11 (21)				
2.50										Tidal Fluvial Deposit - Loose Black to Grey Sand with Some Silt		
3.00	96.23	SPT	33.3	Wet	-	-	-	6, 4, 4, 3 (8)				
3.50	95.62	SPT	75.0	Wet	-	-	-	7, 15, 16, 35 (31)		Glacial Till - Dense Reddish Brown Silty Sand with Some Gravel and Trace Cobbles		
4.00	95.26	SPT	100.0	Wet	-	-	-	30, 23, 50/2" (REFUSAL)				
						7.9				Bedrock - Poor to Fair Reddish Brown Medium to Fine Grained Sandstone with Intermittent Mudstone Bedding Throughout		
4.50	92.88	HQ Core	100.0				37.5					
5.00						8.0						
5.50												
6.00	92.87	HQ Core	93.3				53.3					
6.50												Borehole Terminated at 6.41 m Depth
7.00												
7.50												
8.00												

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PROJECT	13 Haviland Street Waterfront Development	BOREHOLE #	BH3
CLIENT	APM Construction Services Inc.	JOB #	180401
CONTACT	Ian Harper	SHEET	1 of 1
LOCATION	Charlottetown, Prince Edward Island	LOGGED BY	C. MacPherson
DRILL DATE	April 13, 2018	REVIEWED BY	D. Richard
DRILLING CONTRACTOR	Lantech Drilling Services	BOREHOLE DEPTH	4.78 m
METHOD	Track Mounted Rotary Drill	WATER DEPTH	1.39 m
GROUND ELEVATION	99.51 m		
DATUM	Assumed		
WATER ELEVATION	98.12 m		

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PRELIMINARY BORING LOG

DEPTH (m)	ELEVATION (m)	SAMPLE TYPE	REC (%)	Field Observed Moisture	C_u (kPa)	Q_u (MPa)	RQD (%)	SPT N Values	DESCRIPTION	SOIL SYMBOL	COMMENTS
0.50	98.90	SPT	75.0	Moist	-	-	-	1, 4, 5, 4 (9)	Rootmat & Topsoil - Loose Brown Silty Sand with Trace Organics & Fine Roots		
1.00	98.29	SPT	58.7	Moist	-	-	-	6, 6, 6, 7 (12)	Fill - Loose to Compact Reddish Brown Sand with Some Sandstone, Cobbles & Boulders, and Trace Silt		
	98.12								▽		
1.50	97.68	SPT	62.5	Wet	-	-	-	3, 6, 6, 6 (12)			
2.00	97.07	SPT	33.3	Wet	-	-	-	3, 3, 2, 3 (5)			
2.50	96.46	SPT	33.3	Wet	-	-	-	2, 2, 3, 7 (5)	Tidal Fluvial Deposit - Compact Black to Grey Sand with Some Silt		
3.00	95.85	SPT	75.0	Wet	-	-	-	6, 6, 8, 25 (14)	Glacial Till - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Trace Cobbles		
3.50	95.24	SPT	100.0	Wet	-	-	-	27, 24, 20, 21 (44)			
4.00	94.88	SPT	66.7	Wet	-	-	-	11, 16, 50/2" (Refusal)			
4.50									Inferred Bedrock at 4.63 m Depth		Borehole Terminated at 4.63 m Depth
5.00											
5.50											
6.00											
6.50											
7.00											
7.50											
8.00											

SPT N - Value
% Moisture Content
0 10 20 30 40

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Test Pit Log

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Project	13 Haviland Street Waterfront Development	Project #	180401
Client	APM Construction Services Inc.	Test Pit ID	TP1
Location	Charlottetown, Prince Edward Island	Dig Method	Rubber Tire Backhoe
Contractor	Birt & MacKay Construction Ltd.	Elevation	99.22 m
Date	03-Apr-18	Datum	Assumed

Scale (m)	Elevation (m)	Depth (m)	Description	Stratigraphy	Groundwater	Comments
0.5	98.83	0.39	Rootmat & Topsoil - Loose Brown Silty Sand with Trace Organics & Fine Roots			
1.0			Fill- Compact Reddish Brown Sand with Some Sandstone, Cobbbles & Boulders, and Trace Silt			
1.5	97.79	1.43			▽	
2.0						
2.5						
3.0	96.17	3.05				
3.5	95.56	3.66	Tidal Fluvial Deposit - Loose to Compact Black to Grey Sand with Trace Silt			
4.0	95.25	3.97	Glacial Till - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Trace Cobbles			Test Pit Terminated at 3.97 m Depth.
4.5						
5.0						
5.5						
6.0						

Test Pit Log

Project	13 Haviland Street Waterfront Development		Project #	180401
Client	APM Construction Services Inc.		Test Pit ID	TP2
Location	Charlottetown, Prince Edward Island		Dig Method	Rubber Tire Backhoe
Contractor	Birt & MacKay Construction Ltd.		Elevation	99.61 m
Date	03-Apr-18		Datum	Assumed

Scale (m)	Elevation (m)	Depth (m)	Description	Stratigraphy	Groundwater	Comments
0.5	98.91	0.70	Rootmat & Topsoil - Loose Brown Silty Sand with Trace Organics & Fine Roots			
1.0	97.72	1.89	Fill- Compact Reddish Brown Sand with Some Sandstone, Cobbbles & Boulders, and Trace Silt		▽	
1.5						
2.0						
2.5						
3.0	96.41	3.20				
3.5			Tidal Fluvial Deposit - Loose to Compact Black to Grey Sand with Trace Silt			
4.0	95.64	3.97				Test Pit Terminated at 3.97 m Depth.
4.5						
5.0						
5.5						
6.0						

Borehole Log Symbols & Terminology

SOIL SYMBOL KEY - TYPES OF SOIL & ROCK

Sand (0.075 mm - 475 mm)		Fill	
Silty Sand / Sandy Silt		Root Mat / Topsoil	
Glacial Till (Mix of Sand, Silt, Gravel, Clay, Cobbles)		Sandstone Bedrock	
Silt (<0.075 mm)*		Siltstone / Mudstone Bedrock	
Clay (<0.075 mm)*		Other Bedrock as Specified	
Organic Silt		Asphalt	
Gravel (4.75 mm - 75.0 mm)		Concrete	
Cobbles (75 mm - 300 mm) & Boulders (>300 mm)		Wood / Timbers	
* Atterburg Limits Used To Distinguish Between Silt & Clay Sized Particles in Cohesive Soils		Groundwater	

SOIL DENSITY / CONSISTENCY

COHESIVE SOILS

N-Value	Consistency
0 - 2	Very Soft
3 - 4	Soft
5 - 8	Medium Stiff
9 - 15	Stiff
16 - 30	Very Stiff
> 30	Hard

COHESIONLESS SOILS

N-Value	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Compact
31 - 50	Dense
> 50	Very Dense

FIELD OBSERVED MOISTURE

MOISTURE CONTENTS

Ranges	Values
0% - 10%	Dry
11% - 20%	Moist
21% - 35%	Very Moist
36% - 70%	Wet
71% - 100%	Saturated

DESCRIPTIONS

% PARTICLES

Ranges	Descriptor
0% - 9%	trace
10% - 25%	some
26% - 35%	silty / sandy/ gravelly / clayey
> 35%	and (*e.g.* , Silt and Sand)

BEDROCK ROCK QUALITY DESIGNATION (RQD)

% RQD	Rock Description
0% - 25%	Very Poor - Severely Fractured & Broken
25% - 50 %	Poor - Regular Jointing Along Bedding Planes
50% - 75%	Fair - Blocky Structure Some Bedding Planes In Tact
75% - 90%	Good - Majority of Bedding Planes & Structure In Tact
90% - 100%	Very Good - In Tact, Little to No Jointing or Weathering

BEDROCK WEATHEREING & FIELD HARNESS DESCRIPTIONS

Termomology	Description
Highly Weathered	Significant decomposition of rock, broken by hand
Moderately Weathered	Discoloration visable and notably weakened
Slightly Weathered	Slight discoloration when compared with fresh rock
Unweathered	No indication of discoloration or fluid movement
Weak	Crumbles with blows of pick end of hammer
Moderately Weak	Crumbles with moderate blow of hammer
Moderately Strong	Will indent 5 mm with pick end of hammer
Strong	Specimen can be broke with single hammer blow
Very Strong	Requires several blows with hammer to break

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PHASE I ENVIRONMENTAL SITE ASSESSMENT

13 Haviland Waterfront Development

13 Haviland Street

Charlottetown, Prince Edward Island

PID#335448

Project # 180402
May 1, 2018

Prepared For:
Pan-American Properties Inc.
c/o Mr. Cain Arsenault
13 McCarville Street
Charlottetown, Prince Edward Island
C1E 2A6

Prepared By:
EastTech Engineering Consultants Inc.
1314 Mount Stewart Road
Mount Stewart, Prince Edward Island
C0A 1T0

Executive Summary

EastTech Engineering Consultants Inc. was retained by Pan-American Properties Inc. to complete a Phase I Environmental Site Assessment (ESA) at a site located at 13 Haviland Street in Charlottetown, Queens County, Prince Edward Island. The area that was assessed (i.e., the project area) is located on a vacant section of Property Identification Number (PID#) 335448. An apartment building is present on this parcel to the northeast of the project area. A multiple unit residential development has been proposed for construction on the project area. The site is cleared of trees and covered with grass and vegetation. A section of the project area is currently used as a parking lot for the existing apartment building. There have been no known developments on the site in the past and no buildings are known to have historically occupied the project area.

The purpose of this assessment was to determine if any potential or actual environmental liabilities exist on the site and if so, what actions are required to address these concerns. The findings of this report are based on a review of historical and current records, interviews with persons that are knowledgeable of the site, and a site visit conducted by EastTech Engineering staff.

A site visit was conducted on April 13th, 2018 by Chris MacPherson*, P.Eng. CESA*, of EastTech Engineering Consultants Inc. During this site visit, a thorough inspection was completed to identify any potential or actual environmental liabilities that may be present. Further visual inspection was completed along all of the site boundaries, as well the visible aspects of the properties adjacent to the project area.

No actual or potential environmental concerns were identified on or in association with the project area located at 13 Haviland Street in Charlottetown, Prince Edward Island. Therefore, no actions or corrective measures are recommended at the current time.

Note that only the area of the proposed development (i.e., the project area) was assessed. The existing apartment building that is present on PID#335448 was not included in this assessment.

A summary of the site findings has been provided for your review in the table below.

Phase I ESA Summary of Findings

Area of Concern	Level of Concern				Comment	Recommendations
	None	Low Potential	High Potential	Actual		
Current Land Use	☒				No environmental concerns were identified.	None
Historical Land Use	☒				No environmental concerns were identified.	None
Adjacent Property Use	☒				No environmental concerns were identified. Surrounding properties are primarily used for residential and institutional purposes.	None
Interior Staining	☒				No interior staining was identified, no buildings are present on the project area.	None
Exterior Staining	☒				No exterior staining was identified.	None
Floor Drains & Sumps	☒				No floor drains or sumps were identified.	None
Mechanical & Hydraulic Equipment	☒				No mechanical or hydraulic equipment was identified.	None
Refrigeration Equipment & ODMs	☒				No potential sources of banned ozone depleting materials were identified.	None
Hazardous Materials	☒				No hazardous materials were identified on the project area.	None
Hazardous Waste Storage & Disposal	☒				No sources of hazardous waste were identified on the project area.	None
Unidentified Substances	☒				No unidentified substances were identified on the project are.	None
Fuel Storage Tanks	☒				No petroleum storage tanks are present or historically known to have existed on the project area.	None
Hazardous Building Materials	☒				No sources of hazardous building materials were identified on the project area.	None
Water Damage & Mold	☒				No water damage or mold issues were identified on the project area.	None
Landfilling & Waste Management	☒				No landfilling activities were observed.	None
Noise	☒				No noise issues were observed.	None
Electric & Magnetic Fields	☒				No sources of significant electric or magnetic fields were identified.	None
Radon	☒				There is no evidence to suggest that there are elevated radon levels present on the site. No buildings or areas where radon gas accumulation could occur are present on the site.	None

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List of Appendices

1.0 Introduction

EastTech Engineering Consultants Inc. was retained by Pan-American Properties Inc. to complete a Phase I Environmental Site Assessment (ESA) at a site located at 13 Haviland Street in Charlottetown, Queens County, Prince Edward Island. The area that was assessed (i.e., the project area) is located on a vacant section of Property Identification Number (PID#) 335448. An apartment building is present on this parcel to the northeast of the project area. This assessment was limited to the project area as defined herein and does not include the apartment building and immediately surrounding areas. A multiple unit residential development has been proposed for construction on the project area. The site is cleared of trees and covered with grass and vegetation. A section of the project area is a paved parking lot associated with the existing apartment building. There have been no known developments on the site in the past and no buildings are known to have historically occupied the project area. A site location map has been included as Figure 1 in Appendix I.

1.1 Phase I ESA Purpose & Objectives

The purpose of this investigation was to determine if any potential or actual environmental liabilities exist on the site and if so, what actions are required to address these concerns. It is our understanding that the client, Pan-American Properties Inc., is required to provide a Phase I ESA Report for the site as a term of financing, prior to developing the site.

1.2 Phase I ESA Scope of Work

In agreement with Pan-American Properties Inc., the following scope of work was completed as a part of this Phase I Environmental Site Assessment:

- ✓ A preliminary review of historical and current site records, property information, and aerial photographs.
- ✓ A review of regulatory records of the site and neighboring properties of potential concern was conducted from Prince Edward Island Department of Communities, Land & Environment (PEIDCLE) records and databases.
- ✓ A detailed factual report outlining the findings of this Phase I ESA, actual and potential sources of contamination, and recommendations for further investigation that may be warranted as a result of this investigation has been prepared herein.

1.3 Phase I ESA Procedures & Methodology

The procedures and practices that were used in the development and implementation of this Phase I ESA are based on those outlined in *CSA Standard Z768-01 Phase I Environmental Site Assessment*. This standard was developed to establish and standardize the principles and practices associated with conducting Phase I ESA's, which are intended to identify actual and potential site contamination through the evaluation and reporting of existing information collected through a review of applicable site records, site visits, and interviews conducted with persons knowledgeable of the site being assessed.

1.4 Phase I ESA Enhancements

In certain circumstances, the standard Phase I ESA procedure may be enhanced to include additional evaluation or interpretation of site impacts or liabilities. This is generally completed when there are sources of contaminants present which are known prior to the investigation. The purpose of completing these enhancements is typically to determine if a Phase II ESA will be required on a property or site as a result of known contaminants being present. Enhancements may also be requested to provide preliminary information that can be used to more accurately scope a Phase II ESA that is to be conducted at a later date.

No enhancements or modifications to the standard Phase I ESA procedure were completed in this assessment.

1.5 Limitations

The information and recommendations provided in this report are based on the observations made during the site visit on the dates documented herein. The findings of this report reflect site conditions at the time of this assessment and are based on the information provided by the site owner and the owner's representatives, and from the various records and information sources that were accessed as a part of this assessment. Further intrusive investigation may reveal unforeseen issues that may influence our findings and recommendations. As such, EastTech Engineering Consultants Inc. should be notified immediately if further discovery of potential environmental impacts or contaminants are encountered which do not reflect the conditions as documented in this report. This report is intended solely for the client and is not intended for third-party use unless written consent has been provided. EastTech Engineering Consultants Inc. will not assume any responsibility for the use of this report by any unauthorized third parties.

2.0 Records Review

2.1 Review of Current & Historical Aerial Photographs

Historical aerial photographs were reviewed from 1935, 1958, 1974, 1990, 2000 and 2010. These aerial photographs have been included in Appendix I as Figures 2 through 7.

The aerial images from 1935 and 1958 show a former building present on PID# 335448 to the north of the project area. The project area extends into the Charlottetown Harbour in both of these historical aerial images. The aerial image from 1974 shows the building that currently exists on PID# 335448, which is thought to have been the location of the Sacred Heart Home for the Aged at this time. The aerial photograph from 1974 also shows the southwest end of the project area infilled as it currently is today. The former Charlottetown Hospital is visible on the adjacent property to the north and northwest of the project area in the historic aerial images from 1958 and 1974. The aerial image from 1990 shows the project area prior to the construction of the lower parking lot associated with the existing apartment building. This lower parking lot first appears in the aerial photograph from 2000. The Culinary Institute of Canada Campus also first appears to the northwest of the project area in the 2000 aerial photograph. The aerial image from 2010 shows a similar layout on the project area and surrounding areas that was observed during the site visit.

2.2 Historical Fire & Insurance Maps

The Insurance Plan from the City of Charlottetown (1956 updated in 1963 & 1968) shows that the Sacred Heart Home for the Aged formerly occupied the existing building on PID# 335448 located to the northeast of the project area. The Charlottetown Hospital is shown in this insurance plan on the adjacent property to the north and northwest of the project area, where the Culinary Institute of Canada currently exists. A copy of the historical insurance plan showing the project area is included as Figure 8 in Appendix I.

2.3 Historical Land Use

Based on the historical insurance plan and the aerial photographs, it has been determined that the project area has never been developed. The southwest end of the project area used to extend into the tidal zone of the Charlottetown Harbour but was infilled at some point between 1958 and 1974. The historical insurance plan shows that the Sacred Heart Home for the Aged formerly occupied the existing building on PID# 335448 located to the northeast of the project

area, and that the Charlottetown Hospital occupied the property to the north and northwest of the project area, where the Culinary Institute of Canada currently exists. The Canadian Armed Forces military barracks is thought to have occupied the adjacent property to the southeast of the project area since the 1930's.

2.4 PEIDCLE Records Review

According to the records provided by the PEIDCLE, there have been no historical spills or occurrences associated with PID# 335448, where the project area is located. No existing or former underground or aboveground petroleum storage tanks were identified in the PEIDCLE database. No spills or occurrences have been documented in the PEIDCLE records for the adjacent properties to the north / northwest (PID#335463) or to the east / southeast (PID#335018) of the project area. A copy of the Site Specific Environmental Review has been included in Appendix II.

2.5 Local Geology & Hydrogeology

The bedrock formations that are predominantly found in the province of Prince Edward Island consist of the characteristically red colored flat lying sedimentary deposits commonly referred to as the PEI Redbeds. The PEI Redbeds are a part of the Pictou Group of deposits that makes up a section of the Maritime Plane and lie within the Appalachian Mountain System. Bedrock in Prince Edward Island is generally covered by a thin drift of Ground Morain or Basal Till with occurrences of Residual, Ablation Till, and minor Glaciofluvial and Marine Deposits (MacDougall, Veer, & Wilson, 1988).

An initial review of available soils information for the area revealed that the natural surficial soils identified on the site are noted as Charlottetown type soils, which are described as a well-drained to moderately well-drained, coarse-loamy glacial moraine, ablation, or residual material deposited on gently undulating to rolling relief (MacDougall, Veer, & Wilson, 1988).

2.6 Site Topography

The project area gently slopes southwest. The areas surrounding the site slope west to southwest towards the Charlottetown Harbour. An orthographic photograph showing the site with topographic contours overlaying the image has been included as Figure 9 in Appendix I.

3.0 Site Visit

A site visit was completed on April 20, 2018 by Chris MacPherson*, P.Eng. CESA*, of EastTech Engineering Consultants Inc. During this site visit, a thorough inspection of the site and surrounding areas was completed to identify any potential or actual environmental liabilities that may be present. Further visual inspection was completed of the exterior areas of the site and along all of the site boundaries, as well the visible aspects of the properties adjacent to the site.

A geotechnical test pit investigation was conducted on the project area by EastTech Engineering on April 3, 2018. A geotechnical borehole investigation was also completed on the project area on April 20, 2018. No environmental issues or concerns were identified during the excavation of any of the test pits or boreholes on the site, which were extended to a maximum depth of 6.41 meters. Groundwater was encountered in all of the boreholes and test pits at an approximate depth of 1.5 meters below the existing ground surface.

4.0 Interviews

No persons with extensive knowledge were available to interview for this assessment. General information was obtained from Mr. Cain Arsenault of Pan-American Properties Inc.

5.0 Site Description

5.1 Property Information

The project area is located on a section of a property that is registered in the Prince Edward Island Geomatics Information Center Database as property identification number (PID#) 335448 (see Figure 1 in Appendix I). The property is a 1.8 acre parcel that is registered as a non-commercial and residential property. The registered owner of the property is Avonlea Holdings Ltd. who have been in possession of the parcel since February of 2006. The property records have been included in Appendix III.

5.2 Description of Buildings & Site Infrastructure

Building Descriptions

No buildings are present on the project area. As apartment building is present on PID# 335448 to the northeast of the project area, which was not included in this assessment.

Heating Systems & On-Site Fuel Storage

There are no heating systems or on-site fuel storage systems present on the project area.

Potable Water Supply

Potable water is available from the City of Charlottetown's municipal system.

Wastewater Treatment & Disposal

Wastewater and storm water services are available from the City of Charlottetown's municipal systems.

5.3 Surface Water Drainage

Surface water runoff is currently directed from the project area towards the southwest from existing site grades and topography. A catch basin is located in the west corner of the project area within the grassed area.

5.4 Watercourses & Standing Water

No watercourses or standing water was identified on the project area. The Charlottetown Harbour is located adjacent to the project area to the southwest.

5.5 Ecologically Sensitive Areas

No ecologically sensitive areas were identified within the project area.

5.6 Land Use

Current Land Use

The project area is currently vacant and undeveloped. A section of the project area is used as a parking lot associated with the apartment building located to the northeast.

Historical Land Use

The project area was never known to have been developed. Based on the aerial photographs, the southwest end of the site extended into the tidal zone of the Charlottetown Harbour and was infilled at some point between 1958 and 1974.

Adjacent Properties & Adjacent Land Use

The properties surrounding the project area are primarily used for institutional and residential purposes. An orthographic photograph showing the locations of the properties with respect to the site has been included as Figure 10 in Appendix I.

5.7 Staining & Suspected Surficial Contamination

Interior Staining & Suspected Surficial Contamination

No buildings are present on the project area.

Exterior Staining & Suspected Surficial Contamination

No exterior staining or suspected surficial contamination was identified during the site visit.

5.8 Building Systems & Equipment

Floor Drains & Sumps

No floor drains or sumps were identified during the site visit as there are no buildings present on the project area.

Mechanical & Hydraulic Equipment

No mechanical or hydraulic equipment is present on the project area.

Refrigeration Equipment & Ozone Depleting Materials (ODMs)

No refrigeration equipment or any other sources of ozone depleting substances were identified on the project area.

5.9 Hazardous Materials & Controlled Substances

Hazardous Materials

No hazardous materials were identified on the project area.

Hazardous Waste Storage & Disposal

No hazardous wastes are produced or known to be stored on the project area.

Unidentified Substances

No unidentified substances were identified on the project area.

5.10 Fuel Storage Tanks

Aboveground Petroleum Storage Tanks (ASTs)

There are no aboveground petroleum storage tanks known to have been present on the project area.

Underground Petroleum Storage Tanks (USTs)

No underground storage tanks were identified or are known to have been present on the project area in the past.

Propane Tanks

No propane tanks are present on the project area.

5.11 Hazardous Building Materials

Asbestos

No potential sources of asbestos were identified during the site visit.

Lead

No potential sources of lead were identified during the site visit.

Mercury

No sources of mercury were identified on the project area.

Polychlorinated Biphenyl's (PCBs)

No potential sources of PCBs were identified during the site visit.

Urea Foam Formaldehyde Insulation (UFFI)

No potential sources of UFFI were identified during the site visit.

5.12 Water Damage & Mold

No signs of water damage or mold were noted during the site visit.

5.13 Landfilling & Waste Management

No evidence of landfilling activities were noted during the site visit.

5.14 Noise

No environmental concerns were identified with respect to excessive noise.

5.15 Electric & Magnetic Fields

No sources of electric or magnetic fields were observed on the site or on any of the adjacent properties.

5.16 Radon

No concerns were identified with respect to radon gas build-up.

6.0 Evaluation of Environmental Concerns & Recommendations

The objective of a Phase I ESA is to identify all potential and actual environmental concerns associated with a property or site. EastTech Engineering Consultants Inc. has developed a systematic method for evaluating environmental concerns where each individual area of concern is evaluated and categorized based on the probability that the concern exists, the level of impact associated with the environmental concern, the level of action that would be required to address or investigate the concern, and the specific characteristics and requirements for a given site. Several factors are considered when completing this evaluation including land use, future site activities, historical land use, potential ecological receptors, and potential risk to human health. The evaluation criteria for the four categories are defined as follows:

Level of Concern	Symbol	Definition
None		There is little or no evidence to suggest that any potential environmental concern exists with respect to this type of impact or contamination source.
Low Potential / Low Impact		The possibility that contamination or a potential environmental concern does exist, however the potential source of contamination has been speculated based on site information and has not been observed or is of low potential impact if it does exist. At this level of concern there is no immediate risk to human health or the environment so long as the potential source of impact is not disturbed or handled.
High Potential / High Impact		There is a possibility that contamination or a potential environmental concern is present in concentrations that exceed allowable criteria however the potential source of the contamination is not visible or accessible. Further intrusive investigation is generally required to confirm or deny the presence of a contaminant if it is categorized in this level of concern. Some form of action to may also be recommended as a preventative measure under this level of concern.
Actual		Known or high probability that contamination is present in concentrations that exceed allowable criteria based on observations made during the site visit. Further intrusive investigation would generally be recommended to delineate the extent of the impacts and remedial action would typically be required to address an environmental concern in this category.

A summary of the findings of this Phase I ESA has been provided in the table below.

Phase I Environmental Site Assessment – 13 Haviland Street Waterfront Development

Area of Concern	Level of Concern				Comment	Recommendations
	None	Low Potential	High Potential	Actual		
Current Land Use	☒				No environmental concerns were identified.	None
Historical Land Use	☒				No environmental concerns were identified.	None
Adjacent Property Use	☒				No environmental concerns were identified. Surrounding properties are primarily used for residential and institutional purposes.	None
Interior Staining	☒				No interior staining was identified, no buildings are present on the project area.	None
Exterior Staining	☒				No exterior staining was identified.	None
Floor Drains & Sumps	☒				No floor drains or sumps were identified.	None
Mechanical & Hydraulic Equipment	☒				No mechanical or hydraulic equipment was identified.	None
Refrigeration Equipment & ODMs	☒				No potential sources of banned ozone depleting materials were identified.	None
Hazardous Materials	☒				No hazardous materials were identified on the project area.	None
Hazardous Waste Storage & Disposal	☒				No sources of hazardous waste were identified on the project area.	None
Unidentified Substances	☒				No unidentified substances were identified on the project are.	None
Fuel Storage Tanks	☒				No petroleum storage tanks are present or historically known to have existed on the project area.	None
Hazardous Building Materials	☒				No sources of hazardous building materials were identified on the project area.	None
Water Damage & Mold	☒				No water damage or mold issues were identified on the project area.	None
Landfilling & Waste Management	☒				No landfilling activities were observed.	None
Noise	☒				No noise issues were observed.	None
Electric & Magnetic Fields	☒				No sources of significant electric or magnetic fields were identified.	None
Radon	☒				There is no evidence to suggest that there are elevated radon levels present on the site. No buildings or areas where radon gas accumulation could occur are present on the site.	None

7.0 Summary of Recommendations

No actual or potential environmental concerns were identified in association with the project area located at 13 Haviland Street in Charlottetown, Prince Edward Island. Therefore, no actions or corrective measures are recommended at the current time.

8.0 Conclusions & Closing Remarks

EastTech Engineering Consultants Inc. was retained by Pan-American Properties Inc. to complete a Phase I ESA at the proposed location of a multiple story residential building (i.e., the project area) located at 13 Haviland Street in Charlottetown, Queens County, Prince Edward Island. The project area is currently vacant and has never been developed. The purpose of this investigation was to determine if any potential or actual environmental liabilities exist on the site and if so, what actions are required to address these concerns. The findings of this report are based on a review of historical and current records, interviews with persons that are knowledgeable of the site, and a site visit.

No actual or potential environmental concerns were identified in association with the project area located at 13 Haviland Street in Charlottetown, Prince Edward Island. Therefore, no actions or corrective measures are recommended at the current time.

We trust that the information presented in this report is sufficient to meet your needs. Please do not hesitate to contact the undersigned if further clarification is required. We thank you for choosing EastTech Engineering Consultants Inc. as your environmental consultant and look forward to working with you in the future should you require any further services.

Sincerely;

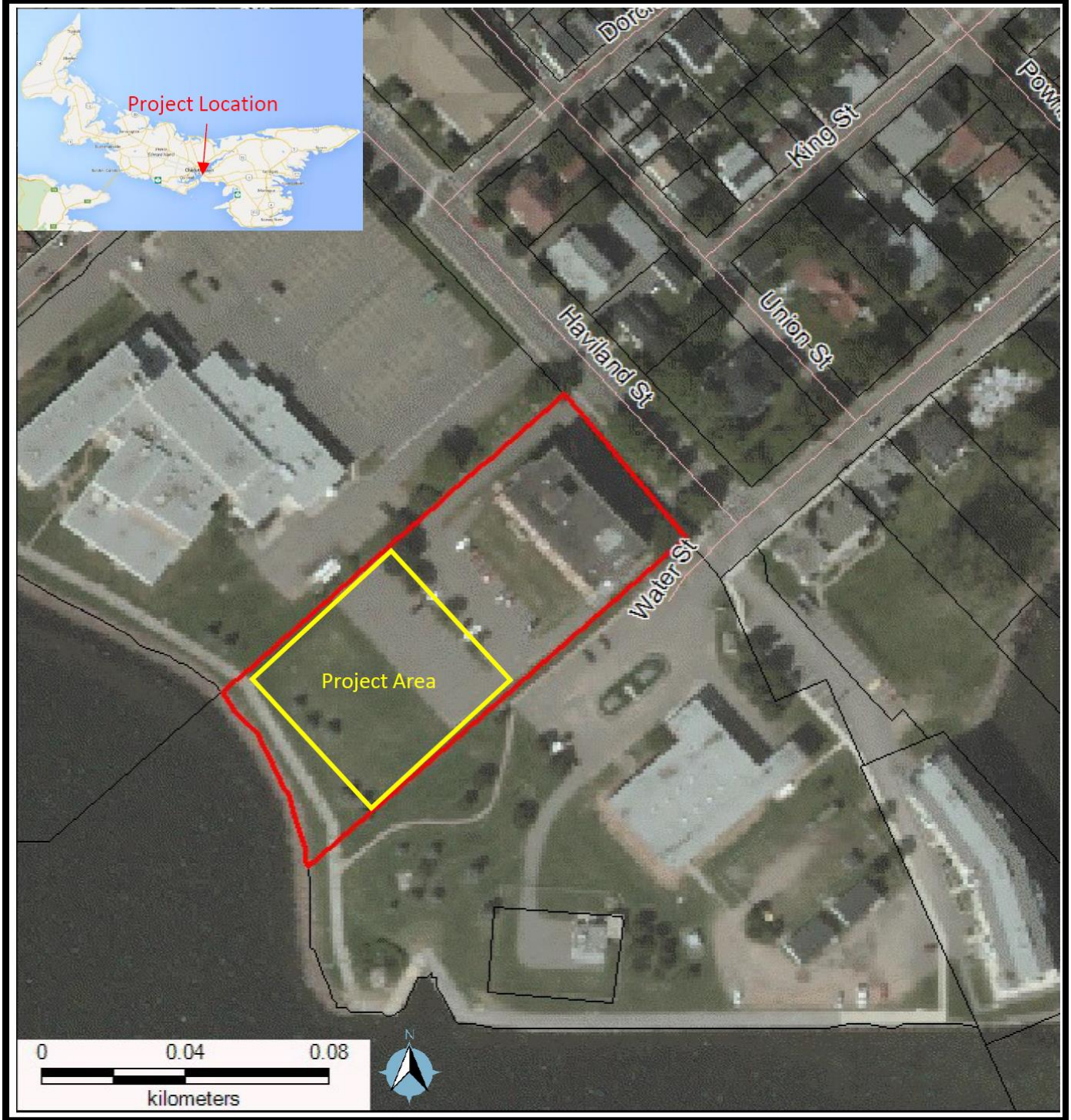
Chris MacPherson

Chris MacPherson ***P.Eng. CESA***
EastTech Engineering Consultants Inc.

Appendix I Site Location Map, Site Plan, Aerial Photographs, & Topographic Map

Phase I Environmental Site Assessment – 13 Haviland Street Waterfront Development

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 1 - Project Locator Map



Comments

Project locator map showing the location of the location of the project area (highlighted yellow) and the associated property identified as PID# 335448 (highlighted red) located at 13 Haviland Street in Charlottetown, Prince Edward Island.

EASTTECH
ENGINEERING CONSULTANTS
Geotechnical • Environmental • Materials Testing

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 2 - 1935 Aerial Photograph

Comments

Aerial image from 1935 shows the site with a building present at the northeast end of PID# 335448 and the project location located on the southwest end of this parcel vacant. The southwest end of the project location appears to extend onto the tidal zone of the Charlottetown Harbour at this time. A road also appears to extend through the site during this time.

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 3 - 1958 Aerial Photograph

Comments

A former building is present on PID# 335448 to the northeast of the project area is visible in this aerial image. The southwest end of the project area extends into the tidal area of the Charlottetown Harbour at this time.

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Geotechnical • Environmental • Materials Testing

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 4 - 1974 Aerial Photograph

Comments

The building that currently exists on PID# 335448 is first visible in this aerial photograph from 1974. The building is thought to have been used as the Sacred Heart Home for the Aged at this time. The southwest end of the project area is infilled at this time along with a section of the property to the northwest of the project location.

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 5 - 1990 Aerial Photograph

Comments

Similar layout to the aerial photograph from 1974 is observed on the site and surrounding properties in this aerial image from 1990.

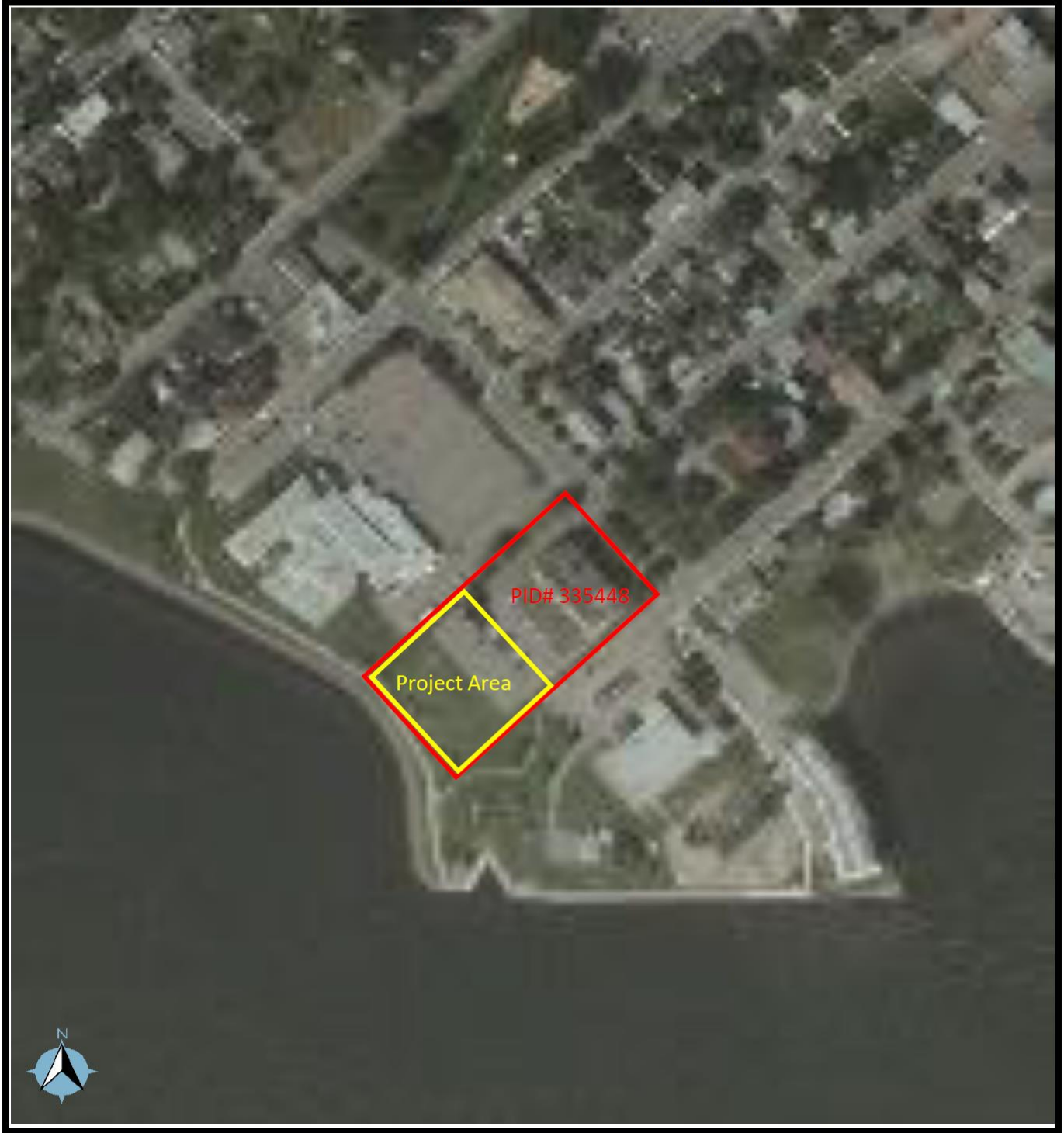
Phase I Environmental Site Assessment – 13 Haviland Street Waterfront Development

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 6 - 2000 Aerial Photograph

Comments

The Cullinary Institute of Canada campus is located to the northwest of the project location, and lower parking lot is present on the site.

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 7 - 2010 Aerial Photograph

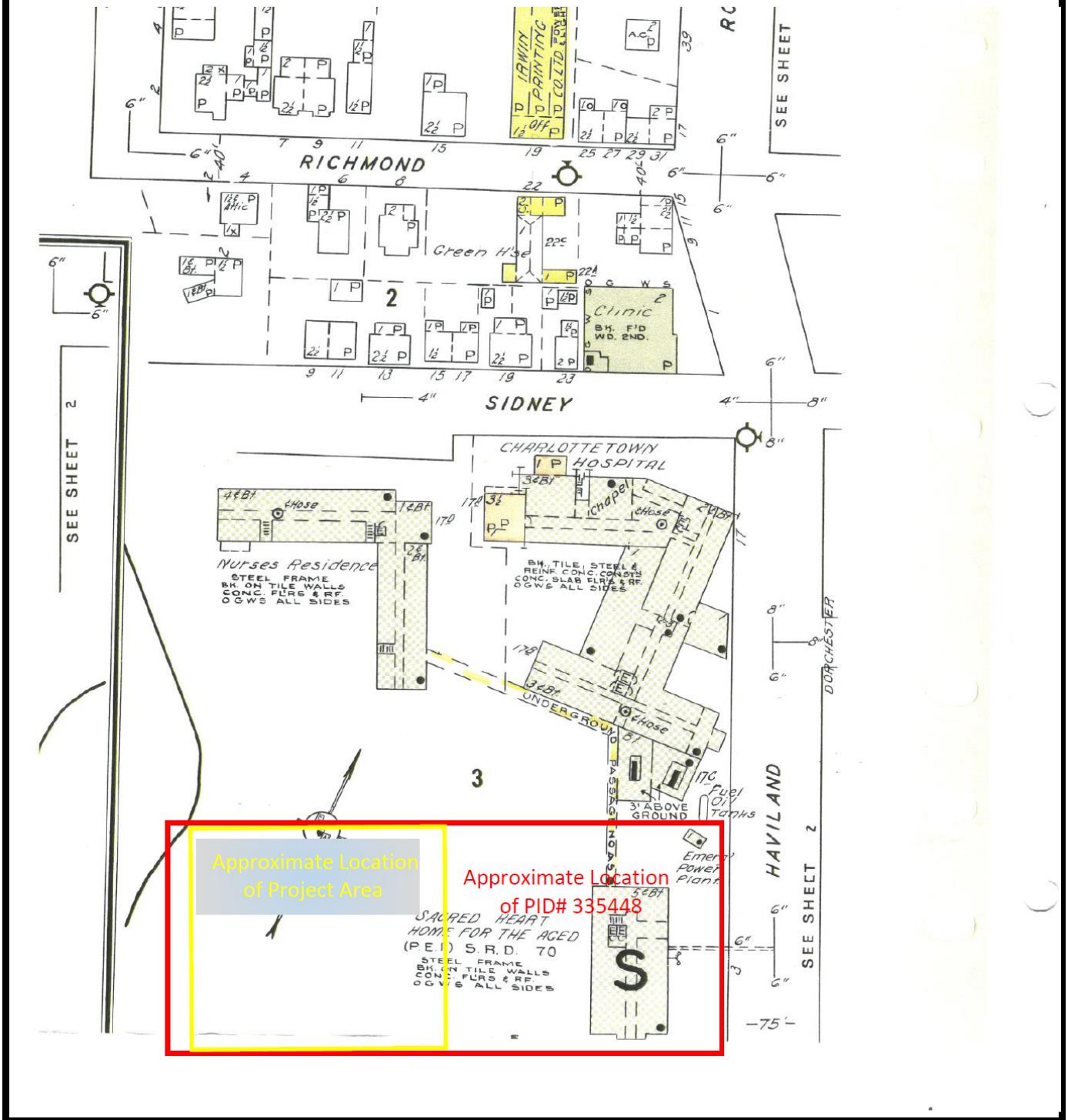


Comments

Similar layout on the project locaton and surrounding areas that was observed during the site visit.

Phase I Environmental Site Assessment – 13 Haviland Street Waterfront Development

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 8 - Historical Insurance Plan of the City of Charlottetown



Comments

The insurance plan from the City of Charlottetown (1956 updated in 1963 & 1968) shows that the site is the former location of the Sacred Heart Home for the Aged. The Charlottetown Hospital was located on the property to the northwest of the site where the Culinary Institute Campus is located.

Phase I Environmental Site Assessment – 13 Haviland Street Waterfront Development

EASTTECH ENGINEERING CONSULTANTS
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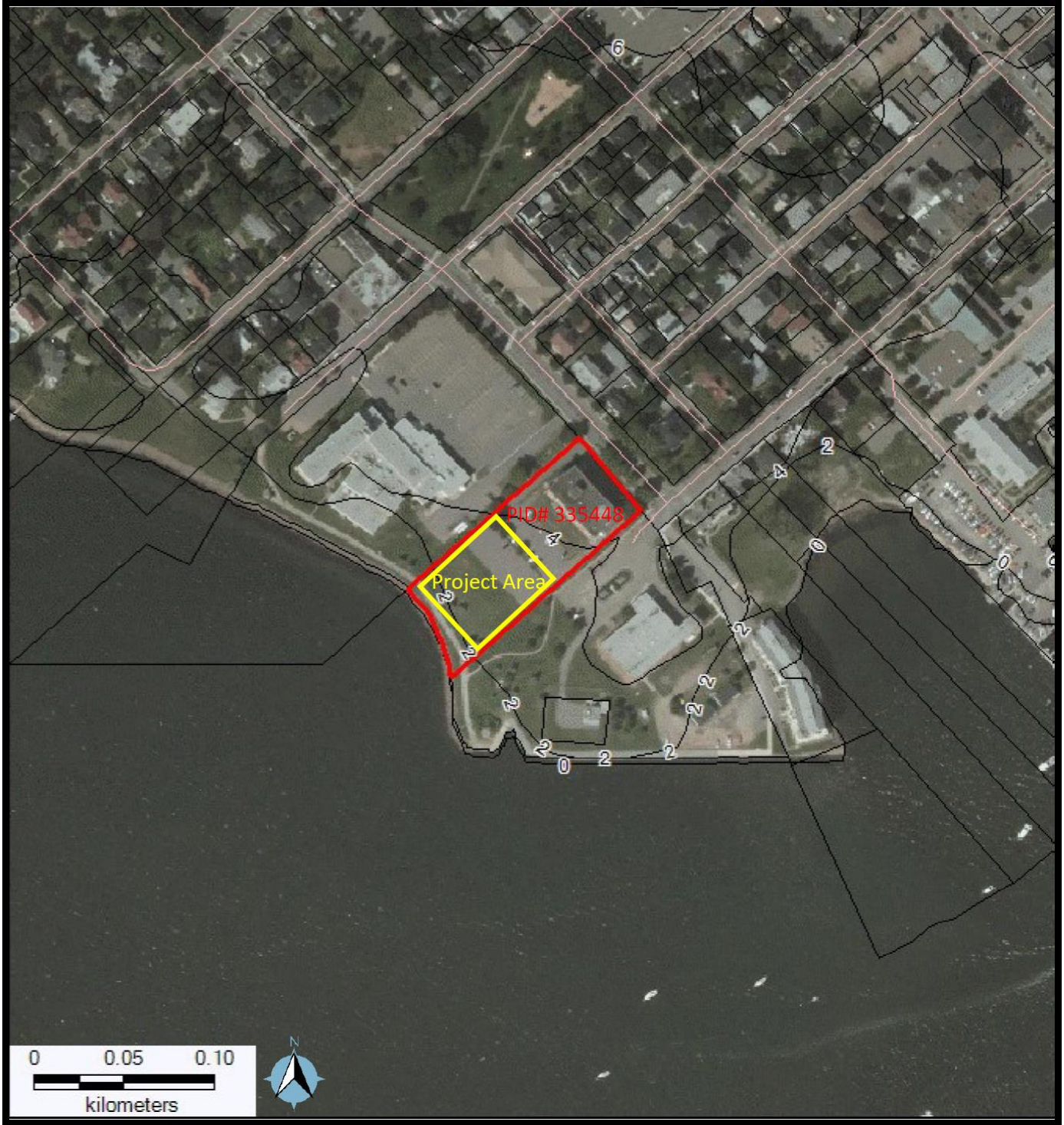
Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 9 - Topography of Site & Surrounding Areas



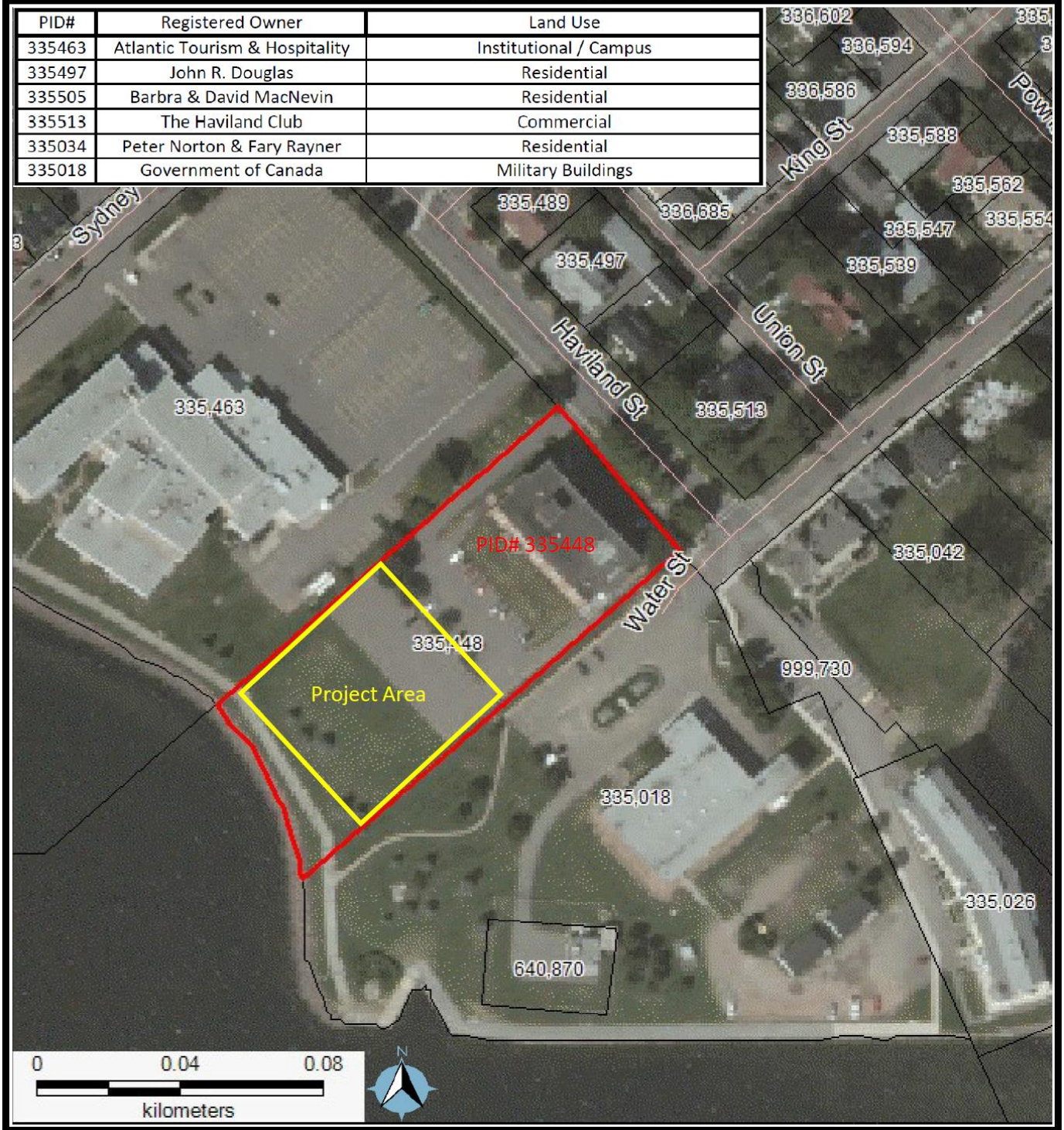
Comments

Orthographic image with topographic contours shows the site and surrounding areas sloping southwest towards the Charlottetown Harbour. Contours are in 2 meter intervals.

Phase I Environmental Site Assessment – 13 Haviland Street Waterfront Development

Project	Phase I ESA - 13 Haviland Street Waterfront Development
Project #	180402
Client	Pan American Properties
Location	Charlottetown, Prince Edward Island
Figure Title	Figure 10 - Location of Adjacent Properties Surrounding the Site

PID#	Registered Owner	Land Use
335463	Atlantic Tourism & Hospitality	Institutional / Campus
335497	John R. Douglas	Residential
335505	Barbra & David MacNevin	Residential
335513	The Haviland Club	Commercial
335034	Peter Norton & Fary Rayner	Residential
335018	Government of Canada	Military Buildings



Comments

Orthographic image showing the location of the adjacent properties surrounding the site.

Appendix II Regulatory Information

Communities Land and Environment

Communautés Terres et Environnement

Environment Division
PO Box 2000, Charlottetown
Prince Edward Island
Canada C1A 7N8

Division de l'environnement
C.P. 2000, Charlottetown
Île-du-Prince-Édouard
Canada C1A 7N8

Audit #7395

April 26, 2018

Mr. Chris MacPherson
EastTech Engineering Consultants Inc.
1314 Mount Stewart Road
Mount Stewart, PE C0A 1T0
c.macpherson@easttech.ca

Dear Mr. MacPherson:

RE: Site - Specific Environmental Review Request

The Department has completed a review of our records as per the request made in your Environmental Records Review application dated April 3, 2018. We have the following information for the property or properties.

Property identified as PID # 335448

In connection with the above property:

- The Department has no records on file for the reporting of any hydrocarbon spills on the property.
- The property has not been designated to the Department's contaminated sites registry.
- The Department has record of the following permit, order or Section 9 *Environmental Protection Act* approval for the property; permit for shoreline protection (QA18-025).

Property identified as PID # 335018

In connection with the above property:

- The Department has record of one 11350 litre underground petroleum storage tank. Any records of removal of this tank or its condition at the time of removal would be with the property owner (Government of Canada).
- The Department has no records on file for the reporting of any hydrocarbon spills on the property.

Tel/Tél. : 902 368 5044 Toll-free/Sans frais : 1 866 368 5044 *princeedwardisland.ca* Fax/Téléc. : 902 368 5830

- The property has not been designated to the Department's contaminated sites registry.
- The Department has no records on file for any permits, orders or approvals under Section 9 of the *Environmental Protection Act.*

Property identified as PID # 335463

In connection with the above property:

- The Department has no records on file for the reporting of any hydrocarbon spills on the property.
- The property has not been designated to the Department's contaminated sites registry.
- The Department has no records on file for any permits, orders or approvals under Section 9 of the *Environmental Protection Act.*

Please consider the enclosed summary as our acknowledgement that your payment submitted for the request meets the fee requirements pursuant to subsection 2(2) of the Environmental Records Review Regulations under the *Environmental Protection Act.*

If you have any questions regarding the above, please call the Department at (902) 368-5024.

Sincerely,

Jocelyn Robbins

Jocelyn Robbins
Contaminated Sites Technician

Appendix III Property Information

FINANCE AND MUNICIPAL AFFAIRS
TAXATION AND PROPERTY RECORDS
GEOMATICS INFORMATION CENTRE

Property Assessment Information Listing
BY Parcel Number

Apr 10, 2018 9:15:11 AM
Page: 1

Parcel	Map #	Property Location	Owner Name & Mailing Address
335448	11L036F1-22	13 HAVILAND ST CHARLOTTETOWN	AVONLEA HOLDINGS LTD CHARLOTTETOWN PE C1A 7L1

Original Prop No:

School District: 2001
Work Unit: 8700

Lot/Township #: 70
School Unit #: 3

Parcel and Lease	Acreage	Assessment Values		Taxable	Designated Taxpayer and Mailing Address
335448 - 0	1.8	Commercial:		0	AVONLEA HOLDINGS LTD
Account Status: A		Non Commercial:	$ 2334500	2334500	
		Residential:	$ 46700	46700	CHARLOTTETOWN PE C1A 7L1
Farm Qual: N		Farm:		0	

Municipality: 2410 Charlottetown
Region# and Assr: 2 MACKINNON DEAN
% in Municip: 100
Spec Prop Code: 213
MHI Number:

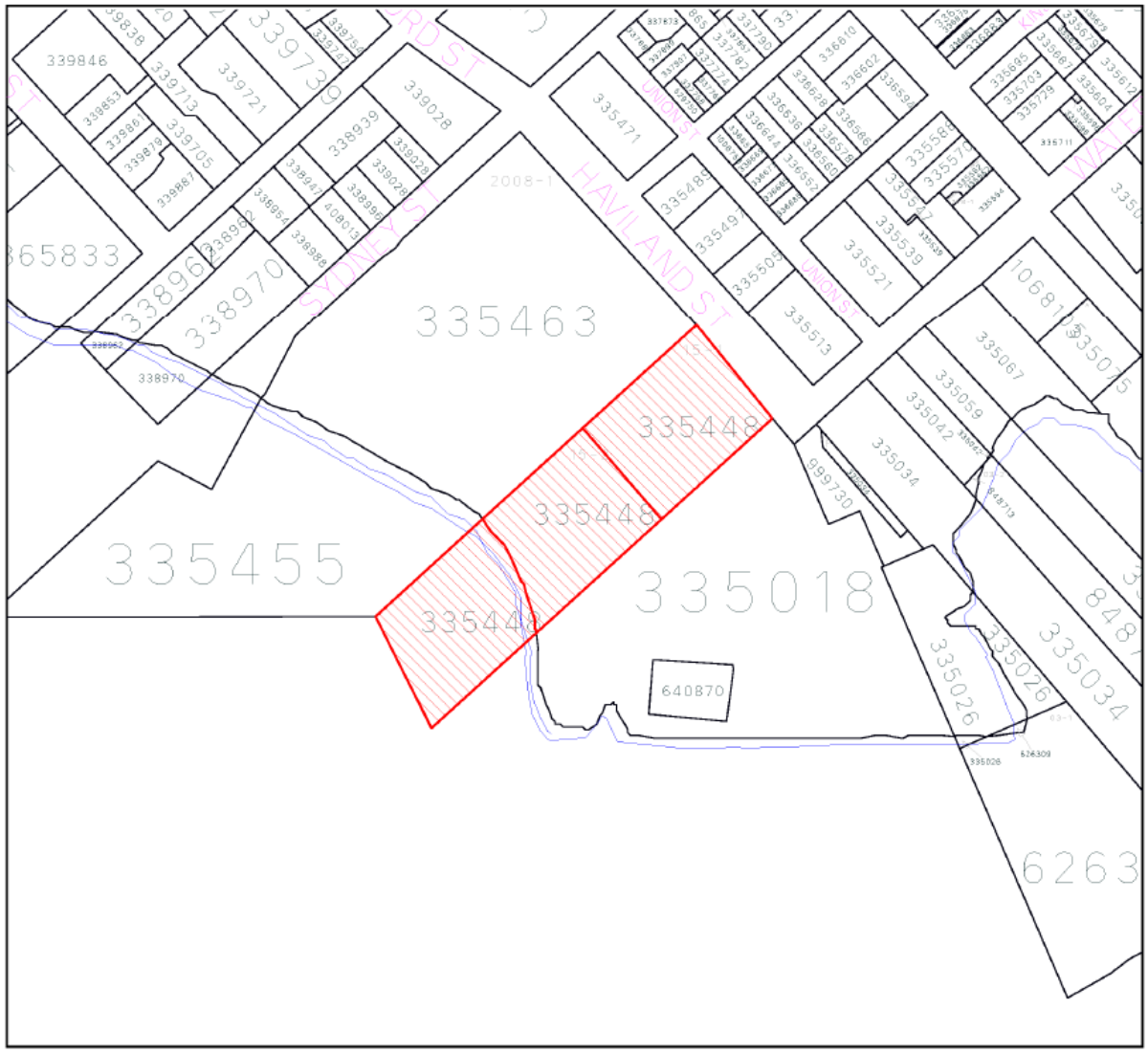
Owner ID Code:
Ownership Code: C61
Tax Exempt Code:

No. Farm Qual:
No. Referrals:
No. Transfers:
No. Tax Credits:
No. Building Permits:
No. Appeals:

Dates
Assessment Effective: 01-JAN-17
Last Inspection: 17-OCT-17
Last Owner Chg: 01-FEB-06
Initially Filed: 01-JAN-00
Dormant:

PEI GEOMATICS
INFORMATION CENTRE

Owner Name: AVONLEA HOLDINGS LTD
Location: 13 HAVILAND ST CHARLOTTETOWN



NORTH

PROVINCE OF PEI DEPARTMENT OF
PROVINCIAL TREASURY
GEOMATICS INFORMATION CENTRE
11 KENT ST. CHARLOTTETOWN
PEI C1A 7NB

PHONE: 902-368-5178
FAX: 902-368-4399

WHILE THIS MAP MAY NOT BE FREE FROM ERROR OR OMISSION, CARE HAS BEEN TAKEN TO ENSURE THE BEST POSSIBLE QUALITY. THIS MAP IS A GRAPHICAL REPRESENTATION. IT IS NOT INTENDED TO BE USED TO CALCULATE EXACT DIMENSIONS OR AREAS.

SCALE: 1:2500
DATE: Apr 10, 2018
TIME: 09:15:11 AM
ACREAGE: 2.64
WORK UNIT: 8700

FINANCE AND MUNICIPAL AFFAIRS
TAXATION AND PROPERTY RECORDS
GEOMATICS INFORMATION CENTRE

Registry Information Listing
BY Parcel Number

Apr 10, 2018 9:15:15 AM
Page: 1

Parcel	Map #	Property Location	Owner Name & Mailing Address
335448	11L036F1-22	13 HAVILAND ST CHARLOTTETOWN	AVONLEA HOLDINGS LTD
		County:	CHARLOTTETOWN PE C1A 7L1

Status: Active
Last Parcel Update: 01-FEB-06

Acres: 1.8
School District: 2001
Lot/Township: 70

DOCUMENTS FILED ON PARCEL:

Year	Description	Type	Doc No	Liber/Book	Folio/Page
2013	MORTGAGE	51	7619	5488	-
2013	DISCHARGE, RELEASE OR SATISFACTION (i.e. MORTGAGE, MECHANICS' LIEN)	61	8381	5491	-
2013	DISCHARGE, RELEASE OR SATISFACTION (i.e. MORTGAGE, MECHANICS' LIEN)	61	8382	5491	-
2013	OTHER ASSIGNMENTS	68	7620	5488	-
2010	DISCHARGE, RELEASE OR SATISFACTION (i.e. MORTGAGE, MECHANICS' LIEN)	61	3512	5310	-
2008	MORTGAGE	51	5156	5205	-
2008	DISCHARGE, RELEASE OR SATISFACTION (i.e. MORTGAGE, MECHANICS' LIEN)	61	6298	5211	-
2008	ASSIGNMENT OF MORTGAGE	62	5157	5205	-
2008	OTHER ASSIGNMENTS	68	6299	5211	-
2007	MORTGAGE	51	4957	5144	-
2006	DEED	11	865	5070	-
2006	RELEASE OF RIGHT OR INTEREST, CONSENT TO TRANSFER PROPERTY, SURRENDER OF	28	3081	5080	-
2006	POWER OF ATTORNEY	35	3080	5080	-
2006	AGREEMENT CONCERNING MORTGAGE	74	1556	5073	-
2003	MORTGAGE	51	4435	1451	4

The information contained in this screen attempts to match Registry Documents with specific Parcel identifiers. While care has been taken in the Interpretation of matching documents to parcel identifiers, errors and omissions may occur.

FINANCE AND MUNICIPAL AFFAIRS
TAXATION AND PROPERTY RECORDS
GEOMATICS INFORMATION CENTRE

Registry Information Listing
BY Parcel Number

Page: 2

Year	Description	Type	Doc No	Liber/Book	Folio/Page
2003	DISCHARGE, RELEASE OR SATISFACTION (i.e. MORTGAGE, MECHANICS' LIEN)	61	8551	1282	51
2003	DISCHARGE, RELEASE OR SATISFACTION (i.e. MORTGAGE, MECHANICS' LIEN)	61	8550	-	-
2003	OTHER ASSIGNMENTS	68	4436	1259	53
1999	DEED	11	72	975	21
1998	MORTGAGE	51	1740	1017	20
1998		5122	2344	930	52
1998	DISCHARGE, RELEASE OR SATISFACTION (i.e. MORTGAGE, MECHANICS' LIEN)	61	1824	-	-
1997	DEED	11	341	857	54
1997	RELEASE OF RIGHT OR INTEREST, CONSENT TO TRANSFER PROPERTY, SURRENDER OF	28	442	858	27
1997	POWER OF ATTORNEY	35	2411	870	18
1997	POWER OF ATTORNEY	35	2412	870	19
1997	MORTGAGE	51	342	947	52
1997	MORTGAGE	51	2413	961	53
1997	DISCHARGE, RELEASE OR SATISFACTION (i.e. MORTGAGE, MECHANICS' LIEN)	61	2603	-	-
1997	BOUNDARY AGREEMENT	72	3683	13	53
1997	AGREEMENT CONCERNING MORTGAGE	74	2691	872	10
1997	AGREEMENT CONCERNING MORTGAGE	74	2461	962	16
1997	OTHER AGREEMENTS	78	1143	862	29
1995	OTHER AGREEMENTS	78	19956140	791	3
1992	EASEMENT, RIGHT-OF-WAY	22	19926216	674	64
1988	LEASE	21	19883972	515	80
1975	DEED	11	19751412	203	122
1963	MORTGAGE	51	19630591	165A	1
1961	DEED	11	19611056	148	208

PLANS FILED ON PARCEL:

Plan No

The information contained in this screen attempts to match Registry Documents with specific Parcel identifiers. While care has been taken in the Interpretation of matching documents to parcel identifiers, errors and omissions may occur.

FINANCE AND MUNICIPAL AFFAIRS
TAXATION AND PROPERTY RECORDS
GEOMATICS INFORMATION CENTRE

Registry Information Listing
BY Parcel Number

Page: 3

Plan No

N7 1593

N8 1249

N8 1257

N8 38747

The information contained in this screen attempts to match Registry Documents with specific Parcel identifiers. While care has been taken in the Interpretation of matching documents to parcel identifiers, errors and omissions may occur.

FINANCE AND MUNICIPAL AFFAIRS
TAXATION AND PROPERTY RECORDS
GEOMATICS INFORMATION CENTRE

Tax Value Information Listing
BY Parcel Number

Apr 10, 2018 9:15:15 AM
Page: 1

Parcel	Map #	Property Location	Owner Name & Mailing Address
335448	11L036F1-22	13 HAVILAND ST CHARLOTTETOWN	AVONLEA HOLDINGS LTD
Acres:	1.8		CHARLOTTETOWN

Assessment Values	
Commercial Assessment:	$0.00
Non Commercial Assessment:	$2334500.00
Residential Assessment:	$46700.00
Farm Assessment:	$0.00
Market Assessment Value:	$2334500.00
Municipal Assessment Value:	$2334500.00
Taxable Commercial:	$0.00
Taxable Non-Commercial:	$2334500.00
Taxable Residential:	$46700.00
Taxable Farm:	$0.00

Tax Rates	
Provincial Commercial Rate:	$1.50
Provincial Non-Commercial Rate:	$1.50
Municipal Commercial Rate:	$0.00
Municipal Non-Commercial Rate:	$0.00
Provincial Tax Credit:	$-.5

Summary of Annual Charges: _

Province of PEI Charges	$0.00	
Less Provincial Credits *	$0.00	
Less Municipal Credits *	$0.00	$0.00
Municipality of Charlottetown		$0.00
Island Waste Mangement Corp. Charges		$0.00
Annual Charges		$0.00

* Provincial and Municipal Credits

	Municipal	Provincial
Provincial Tax Credit:	N/A	$0.00
Farm Assessment Credit:	$0.00	$0.00
Farm Use Credit:	$0.00	$0.00
Owner-Occupied Residential Credit:	$0.00	$0.00
Environmental Building Credit:	$0.00	$0.00
Environmental Land Credit:	$0.00	$0.00
	$0.00	$0.00

PE C1A 7L1

Appendix IV Photographs from Site Visit

Photograph of project area facing northeast towards the existing apartment building on the site. Note the catch basin located on the left side of this image.

Photograph of the southwest end of the project area facing southeast.

Photograph of the Canadian Armed Forces Barracks located on the adjacent property to the southeast of the project area

Photograph of the Culinary Institute of Canada Campus located on the adjacent property to the northwest of the project area.

Photograph of the Culinary Institute of Canada Campus located on the adjacent property to the northwest of the project area.

Photograph of the existing apartment building that occupies the northeast end of PID# 335448 and is adjacent to the project area.

Photograph of the east corner of the project area taken from the existing parking lot associated with the apartment building on PID# 335448 facing east

Photograph of the north corner of the project area facing north.

Appendix V List of References

List of References

Asbestos Information: Health Canada Website - http://healthycanadians.gc.ca/healthy-living-vie-saine/environment-environnement/air/contaminants/asbestos-amiante-eng.php. April 28, 2016.

Lead Information: Health Canada Website - http://www.hc-sc.gc.ca/ewh-semt/contaminants/lead-plomb/asked_questions-questions_posees-eng.php. April 28, 2016.

MacDougall, J.I., Veer, C., & Wilson, F., "Soils of Prince Edward Island – Prince Edward Island Soil Survey" Research Branch – Agriculture Canada, 1988.

PCB Information: Health Canada Website - https://www.ec.gc.ca/bpc-pcb/. April 28, 2016.

PCB Products: US EPA Website - https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs. April 28, 2016.

Radon Gas: Health Canada Website - http://healthycanadians.gc.ca/security-securite/radiation/radon/home-test-maison-eng.php April 28, 2016.

UFFI Information: Health Canada Website - http://hc-sc.gc.ca/cps-spc/advisories-avis/info-ind/formaldehyde-eng.php April 28, 2016.

Appendix VI Qualifications of the Assessor

Chris MacPherson *P.Eng. CESA*

President & Director of Engineering Services

EastTech Engineering Consultants
Geotechnical • Environmental • Materials Testing

Education

Bachelor of Science in Geological Engineering (Geotechnical Option) – University of New Brunswick, Fredericton, New Brunswick (2008)

Environmental Technology Graduate
Holland College, Summerside, Prince Edward Island (2002)

Associations

Registered as a Professional Engineer (P.Eng.) with the Association of Professional Engineers of Prince Edward Island

Registered as a Certified Environmental Site Assessor (CESA) through the Associated Environmental Site Assessors of Canada Inc.

Professional Record

Geotechnical & Environmental Engineer
Fundy Engineering & Consulting Ltd. - Saint John, New Brunswick & Charlottetown, Prince Edward Island
December 2008 – April 2016

Construction & Geotechnical/Geomechanical Drilling Supervisor Mary River Project (Baffin Island, Nunavut)
Knight Piésold Consulting Ltd. - North Bay, Ontario
April 2007 – September 2008 (Summer Field Seasons)

Project Experience

Chris has exceled in a wide array of projects over the course of his career in the geotechnical and environmental consulting industry. With a natural ability to apply technical knowledge to real world problems, Chris prides himself as being a highly technical engineer with a diverse skill set and an aptitude for developing practical, cost effective solutions to meet the needs of the industries that he serves. Some notable projects that Chris has recently undertaken include:

- **Geotechnical Engineer of Record - University of Prince Edward Island School of Sustainable Design Engineering Building in Charlottetown, PE**
- **Environmental Engineer of Record – Phased I & II Environmental Site Assessment – Carleton Motel & Coffee Shop, Borden-Carleton, PE**
- **Geotechnical Engineer of Record – Red Sands Hotel Parking Lot, Charlottetown, PE**

Areas of Expertise

- Geotechnical Investigations & Foundation Design Support
- Construction Materials Laboratory & Field Testing
- Phase I Environmental Site Assessments
- Phase II Environmental Site Assessments
- Contaminated Sites Remedial Action & Management of Contaminated Sites
- Atlantic Risk Based Corrective Action for Contaminated Sites Protocol

Completed parking lot design using reinforced geotextile for subgrade support in Charlottetown, PE eliminating the need for approximately 700 cubic meters of structural fill for parking lot construction.

- **Geotechnical Engineer of Record – Sleep Country Building Charlottetown, PE**
  Completed a shallow concrete strip footing design to allow for the safe installation of the buildings footings on structural fill that was placed over a deposit of organic soils at depth.
- **Environmental Engineer of Record - Phase I & II Environmental Site Assessments and Remedial Action – Carl's Auto Service Ltd. (54 acre automobile salvage yard & automobile repair garage) Harmony, PE.**
- **Phase I Environmental Site Assessments for dozens of local businesses in Prince Edward Island including Montgomery's Recycling Depot, Peakes Quay Bar & Restaurant, Phinley's Diner & Dairy Bar, Swept Away Cottages & Motel, Churchill Arms Pub & Restaurant, Christmas Discounters, Wash A Way Carwash, Glen Afton Golf Course & Country Club, & The Olde Glasgow Mill Restaurant.**
- **Geotechnical Engineer of Record / Phase I & II Environmental Site Assessments and Remedial Action – Prince & Grafton Development (multi-unit commercial and residential building).**
- **Geotechnical Engineer of Record – Various Bridge Structures, PE**
  Conducted geotechnical investigations and provided foundation design support for over 20 bridge structures across Prince Edward Island for the PEI Department of Transportation.
- **Geotechnical Lead – Wind Energy Institute of Canada (WEICan) Wind Project**
  Completed geotechnical investigation and foundation design support for five 2 MW wind turbines. The access road required a "floating foundation design" where a combination of geotextile and structural fill was placed over soft saturated marshland.

Professional Development

- **Tensar Geogrid Roadway Design Seminar – Technical session on the applications for Tensar Geogrid products in roadway design, theory, and in the use of associated software developed specifically for Tensar products.**
- **AESAC Phase I and Phase II Environmental Site Assessment Training Course – Overview of aspects and standards in completing environmental assessments in compliance with CSA Standards in Vaughn, ON.**
- **Rammed Aggregate Pier® Systems technical seminar discussing the use, design, and construction of hosted by the Geopier Foundation Company and AMCON Limited, Dartmouth, NS.**
- **Geosynthetic Clay Liner Technical Seminar - Arrow Construction, Saint John, NB.**
- **Videoconference/course held by Conastoga, Rovers, & Associates Institute Education & Training Services – "Engineering Principals Applicable to Sediment Management Projects".**

Appendix VI List of Acronyms

ACMs	Asbestos Containing Materials
AST	Aboveground Petroleum Storage Tank
ESA	Environmental Site Assessment
ODMs	Ozone Depleting Materials
PCBs	Polychlorinated Biphenyls
PEIDCLE	Prince Edward Island Department of Communities, Land, & Environment
UFFI	Urea Foam Formaldehyde Insulation
UST	Underground Petroleum Storage Tank

Appendix VII Glossary of Terms

Glossary of Terms as Defined in CSA Standard Z768 - Phase I Environmental Site Assessment

Adjoining Properties – Any properties that are contiguous or immediately adjacent to the property being assessed.

Assessor – A person or business entity that carries out a Phase I ESA according to the requirements of [CSA Standard Z768].

Client – A person or business entity that commissions an assessor to perform a Phase I ESA.

Contamination- The presence of a substance of concern, or a condition, in concentrations above appropriate pre-established criteria in soil, sediment, surface water, groundwater, air or structure.

Criteria – Limits or levels for a substance of concern that are established prior to commencing a Phase II ESA.

Environmental Audit – A systematic process of objectively obtaining and evaluating evidence regarding a verifiable assertion about an environmental matter to ascertain the degree of correspondence between the assertion and established criteria, and then communicating the results to the client. A verifiable assertion is a declaration or statement about specific subject matter that is supported by documented data.

Hazardous Material A material that may, upon exposure, constitute an identifiable risk to human health or the natural environment. Hazardous material criteria are established with regard to appropriate regulatory requirements.

Neighboring Property – Any properties that are contiguous or immediately adjacent to the site, in addition to those that can be reasonably expected to have been a source of substances of concern on the site.

Phase I Environmental Site Assessment (ESA) – The systematic process, as prescribed by [CSA Standard Z768], by which an assessor seeks to determine whether a particular property is or may be subject to actual or potential contamination. A Phase I ESA does not involve the investigative procedures of sampling, analyzing, and measuring unless enhancements are agreed upon between the client and the assessor.

Phase II Environmental Site Assessment (ESA) – The systematic, iterative process, as outlined in CSA Standard Z769, by which an assessor seeks to characterize and/or delineate the concentrations or quantities of substances of concern related to a site and compare those levels to established criteria.

Property – Land and any improvements to land, consisting of any physical object attached to the land with some degree of permanence, including buildings and other fixtures. For the purpose of this report, the terms “property” and “site” are used interchangeably.

Site- a subset or combination of properties, as defined by the scope of work. For the purpose of this report, the terms “property” and “site” are used interchangeably.

Site Owner / Contact – The person designated by the client to have responsibility for the site and to act as a principal contact for the assessor.

User – A third-party person or business entity, other than the client, that uses and/or relies on the information obtained in a Phase I ESA.