

Harbour Environmental Group

# Design Brief

**1850 Bantree Street**

November 2024

## Design Brief

1850 Bantree Street

November 2024

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# 1 INTRODUCTION

The subject site is part of the parcel of land located at 1850 Bantree Street, east of Laurent Leblanc Ltd and west of Maritime-Ontario Freight Lines Ltd. Arcadis Professional Services (Canada) Inc. (formerly IBI Group) and Aquafor Beech Ltd have been retained by Harbour Environmental Group to provide professional engineering services for the property. The subject site is approximately 0.72 ha and consists of a series of equipment intended for waste (“liquid soil”) processing with material collected via hydrovac operations. Refer to key plan on **Figure 1.1** for Site location.

**Figure 1.1 Site Location**



## 1.1 Pre-Consultation Meeting

The City of Ottawa hosted a pre-consultation meeting on July 10<sup>th</sup>, 2023. Notes from the meeting and Study and Plan Identification List are provided in **Appendix A**. There were no major engineering concerns flagged in this meeting. Additional meetings were held with City staff on August 19, 2024, September 23, 2024 and November 4, 2024; as well as a number of email communications.

## 1.2 MECP Environmental Compliance

An Environmental Compliance Approval (ECA) was obtained by Harbour Environmental Group for the “outside loading and unloading of waste (liquid soil) and processed soil and receiving and shipping of waste (liquid soil)”. This ECA, Number 2401-D5NNSH issued July 12, 2024, can be found in **Appendix A**.

An Air and Noise ECA (Harbour Environmental Group (NW Calgary) Ltd, Ottawa - MECP File Ref #4101-CVGNMJ) was submitted September 8, 2023 and follow-up dialogue took place in October 2024 regarding that application. Approval is anticipated shortly.

Additionally, the City of Ottawa has requested an ECA be obtained specifically for the site stormwater. The application for this ECA will be submitted to Lily Xu under the Transfer of Review process. This SPA submission will form part of that application.

## 1.3 Zoning

The subject site is zoned IH for Heavy Industrial. The proposed use of the site, “waste processing and transfer”, falls under permitted uses per the City of Ottawa Bylaw Part 11, Section 201-202.

# 2 WATER DISTRIBUTION

## 2.1 Existing Conditions

It is proposed to service the subject site with potable water from the City of Ottawa’s existing watermains. There is an existing 305mm ductile iron watermain in Bantree Street. A road cut would be required to connect.

## 2.2 Design Criteria

### 2.2.1 Water Demands

The proposed development consists of a Heavy Industrial gross area. In order to calculate water demand rates, the per unit density and consumption rates are taken from Tables 4.1 and 4.2 of the Ottawa Design Guidelines – Water Distribution were used and are summarized as follows:

- Industrial - Heavy 55,000 l/gross ha/day
- Average Day Demand 280 l/cap/day
- Peak Daily Demand 700 l/cap/day
- Peak Hour Demand 1,540 l/cap/day

A water demand calculation sheet is included in **Appendix B** and the total water demands are summarized as follows:

- Average Day 0.46 l/s
- Maximum Day 0.69 l/s
- Peak Hour 1.24 l/s

### 2.2.2 System Pressures

The 2010 City of Ottawa Water Distribution Guidelines states that the preferred practice for the design of a new distribution system is to have normal operating pressures range between 345 kPa (50 psi) and 552 kPa (80 psi) under maximum daily flow conditions. Other pressure criteria identified in the guidelines are as follows:

- |                  |  |
|------------------|--|
| Minimum Pressure | Minimum system pressure under peak hour demand conditions shall not be less than 276 kPa (40 psi).                             |
| Fire Flow        | During the period of maximum day demand, the system pressure shall not be less than 140 kPa (20 psi) during a fire flow event. |

**Maximum Pressure** Maximum pressure at any point in the distribution system in unoccupied areas shall not exceed 689 kPa (100 psi). In accordance with the Ontario Building/Plumbing Code the maximum pressure should not exceed 552 kPa (80 psi) in occupied areas. Pressure reduction controls may be required for buildings when it is not possible/feasible to maintain the system pressure below 552 kPa.

### 2.2.3 Fire Flow Rate

Note that no buildings are proposed for this site. Water demands have been calculated for a Heavy Industrial gross area in lieu of a floor area or population density, in accordance with the Ottawa Design Guidelines for Water Distribution, however there are no proposed buildings to calculate a fire demand using the FUS.

The ground surface surrounding the equipment consists of granulars. There is a rail corridor separating the northeast property line of 1850 Bantree from the southwest property line of the adjacent property. No equipment is to be placed inside this corridor, thereby providing an additional buffer from existing buildings and reducing concerns over potential fire hazards.

A Fire Safety Plan (FSP) has been “reviewed and approved by the Fire Prevention Office of the Ottawa Fire Service” on August 21, 2024. A copy of the approval letter can be found in **Appendix B**.

Given the above considerations, it is proposed to install a private hydrant inside the property line so that water is available in case of fire, however there is no set fire demand.

### 2.2.4 Boundary Conditions

The City of Ottawa has provided a hydraulic boundary condition in front of the subject property. The boundary condition is based on the water demand provided. A copy of the boundary condition received November 28, 2024 is included in **Appendix B** and is summarized as follows:

BOUNDARY CONDITIONS	
SCENARIO	HGL (m)
Average Day	117.9
Peak Hour	109.9
Max Day + Fire Flow	N/A

## 2.3 Proposed Water Plan

The site will be serviced by a connection to the existing 305 mm ductile iron watermain on Bantree Street. There is one hydrant proposed on site, near the vehicular entrance to the site. Redundancy is not required for this site as water demands fall below the threshold for a second connection. For the purposes of this report, assuming a minimal loss within the service connection, the pressures within the site can be estimated as follows:

**Minimum Pressure (Peak Hour)** – The minimum peak hour pressure on the site can be estimated as HGL 109.9 m – hydrant elevation 69.6 m = 40.3 m or 395.3 kPa which exceeds the minimum requirement of 276 kPa.

**Fire Flow** – There is no fireflow associated with this site.

**Max HGL (High Pressure Check)** – The high-pressure check can be estimated as HGL 117.9 m – hydrant elevation 69.6 m = 48.3 m or 473.8 kPa which does not exceed the maximum of 552 kPa, therefore no pressure reducing valve is proposed.

The above results indicate the municipal infrastructure can support the proposed development.



## 3 WASTEWATER

### 3.1 Existing Conditions

There is an existing 300mm concrete sanitary sewer in the Bantree Street right-of-way adjacent to this site. There are no MSS or “high-level study” available for this industrial area. There is currently no flow from the subject site to any sanitary sewer. The capacity of the 300mm concrete sewer is discussed in Section 3.3.

### 3.2 Design Criteria

The sanitary sewers for the subject site will be based on the City of Ottawa design criteria. It should be noted that the sanitary sewer design for this study incorporates the latest City of Ottawa design parameters identified in Technical Bulletin ISTB-2018-01. Some of the key criteria will include the following:

- Industrial – Heavy Demand 55,000 l/ha/d
- ICI Peaking factor 1.5
- Infiltration allowance 0.33 l/s/ha
- Velocities 0.60 m/s min. to 3.0 m/s max.

In addition to the standard Heavy Industrial consumption rate, the use of the site will result in extra wastewater flows due to operations onsite. Per the July 2024 ECA (available in **Appendix A**), treated effluent from the liquid waste processing is suitable to be discharged to a sanitary sewer (Soil Receipt and Handling, item 24, subsection 10). Harbour Environmental Group has estimated an average sanitary discharge volume of 25 m<sup>3</sup>/day from their operations. On a peak day, this volume increases to 60 m<sup>3</sup>/day.

### 3.3 Recommended Wastewater Plan

Per Section 3.2 of this report, wastewater flow rate was calculated based on the proposed heavy industrial land use and an additional flow resulting from waste processing operations. This operations flow is expected to result in additional flows up to 60 m<sup>3</sup>/day.

Calculating sanitary flows by land-use,

$$\begin{aligned} Q_{\text{land-use}} &= 0.72 \text{ ha} * 55,000 \text{ l/ha/d} * 1.5 \text{ ICI Peak Factor} \\ &= 59,400 \text{ l/day} / (86400 \text{ s/day}) \\ &= 0.69 \text{ l/s} \end{aligned}$$

Infiltration allowance can then be calculated as follows,

$$\begin{aligned} Q_{\text{infiltration}} &= 0.72 \text{ ha} * (0.33 \text{ L/s/ha}) \\ &= 0.24 \text{ l/s} \end{aligned}$$

Considering the onsite operations flow and converting to l/s as follows,

$$\begin{aligned} Q_{\text{operations}} &= 60 \text{ m}^3/\text{day} * (1000 \text{ L/m}^3) \\ &= 60,000 \text{ l/day} / (86400 \text{ s/day}) \\ &= 0.69 \text{ l/s} \end{aligned}$$

Total flow can then be considered as the following,

$$\begin{aligned} Q_{\text{sanitary}} &= Q_{\text{land-use}} + Q_{\text{infiltration}} + Q_{\text{operations}} \\ &= 0.69 \text{ l/s} + 0.24 \text{ l/s} + 0.69 \text{ l/s} \\ &= 1.62 \text{ l/s} \end{aligned}$$

As demonstrated above and detailed in the sanitary sewer design sheet (see **Appendix C**), the calculated wastewater flow is estimated to be 1.62 l/s.

It should be noted that the additional 60 m<sup>3</sup>/day flow is not being taken from the city watermain on Bantree, rather it is being produced from site works (treating liquid waste into a product that can be discharged into the city's sanitary sewer system per the July 2024 ECA).

As discussed in Section 3.1, there are no MSS or "high-level study" available for this industrial area. The city was approached to determine if there is sufficient capacity available in the existing sewer to handle the increased sanitary flow from the site and if the sanitary HGL would be an issue. The city has confirmed that there are "no issues with capacity or the 100-yr HGL in the sanitary sewer on Bantree Road" based on a sanitary flow of 1.62 l/s (see correspondence in **Appendix C**).

In reality, the 0.69 l/s peak flow calculated from the 0.72 ha gross area of the site multiplied by 55,000 l/ha/day will not materialize. The only source of wastewater discharge to the sanitary sewer is expected to come from waste processing operations. This land-use flow has been included in our calculations in addition to the operations flow in order to be conservative.

## 4 SITE STORMWATER MANAGEMENT

### 4.1 Existing Conditions

The 0.72 ha site surface is comprised of gravel, with an equipment area located at the south end and landscaping along the east and south property line.

The entire site currently drains to the east to a 165m long enhanced swale with sand filter comprised of a 200mm perforated HDPE pipe with sock in clearstone overlain by filter fabric and drainage sand (Paterson, 2023). The facility accepts the runoff via sheet flow from the site, and stores the runoff in the media layers of the facility as well as ponding storage. Runoff is infiltrated or slowly released to the City 1050 mm diameter concrete storm sewer on Bantree Street via the perforated pipe system.

The enhanced swale with sand filter was planted upon construction completion, and vegetation has taken throughout the entire swale. The bottom of the swale varies in width from approximately 2.1m to 4m. The swale provides 219.5m<sup>3</sup> of storage in the clearstone around the perforated pipe, within the filter sand, and by ponding.

PARAMETER	ENHANCED SWALE WITH SAND FILTER
Length of Perforated Pipe	177m
Ponding Depth (hr)	0.4m
Total Facility Depth (dr)	0.75m
Filter Sand (Void Ratio = 0.4)	0.25m
Clearstone with 200mm diameter HDPE perforated pipe (Void Ratio = 0.4)	0.5m
Total Storage (Ponding + Media Storage)	148.7m <sup>3</sup> + 81.8m <sup>3</sup> = 230.5m <sup>3</sup>

Three catch basins are located along the swale to provide overflow into the perforated pipe. The catchbasin grates are approximately 0.4m higher than the top of swale, allowing for infiltration and storage prior to entry into the perforated pipe. The final segment of pipe between the existing 1500mm diameter concrete City storm sewer on Bantree Street and the upstream manhole on site is a 150mm diameter PVC pipe.

A site visit was completed on October 7<sup>th</sup>, 2024. The enhanced swale and sand filter was well vegetated and was functioning as intended. Minor sediment accumulation was identified at the north end of the swale which requires removal. The existing catch basin and manhole covers were in good condition with the exception of catch basin 2, which needs some concrete repairs to ensure surface ponding can occur within the swale. Images of the two maintenance requirements are below.



## 4.2 Design Criteria

The stormwater management infrastructure was designed per the City of Ottawa 2012 Sewer Design Guidelines. Previous consultation with the City has also confirmed water quantity and quality requirements for this site, as summarized below.

### 4.2.1 Water Quantity

Per the pre-consultation documentation with the City of Ottawa in **Appendix A**, post-development site runoff from the 100-year design storm must not exceed the 5-year pre-development flow.

### 4.2.2 Water Quality

Stormwater management for this site is to achieve enhanced water quality control, which requires 80% TSS removal. Runoff from events up to, and including, the 28mm event in the City of Ottawa represents 90% of the total annual rainfall events (or the 90<sup>th</sup> Percentile Event). As such per the Low Impact Development Stormwater Management Guidance Manual (MECP, Draft 2022) “Stormwater management BMPs which achieve the Runoff Volume Control Target (the control of the regionally specific 90th percentile precipitation event) may be considered to have achieved Enhanced Protection (sometimes referred to as Level 1) for the respective contributing drainage area.” Therefore by capturing, storing and filtering 90% of all rainfall events, long term 80% TSS removal performance will be achieved.

### 4.3 Proposed Conditions

The proposed conditions maintain the same land use characteristics and runoff flow patterns; however, the runoff is reduced due to the installation of the new hydro-vac waste processing equipment. The proposed series of equipment is comprised of numerous open top tanks which will collect the precipitation that falls directly onto these surfaces. Therefore, during discussion with the City it was confirmed that the area of these tanks could be removed from post-development drainage calculations. The surface area of the equipment that will be removed from the drainage calculations is equal to 316m<sup>2</sup>, as detailed below:

TANK	LENGTH	WIDTH	SURFACE AREA (M2)
Dump Tanks	18.3	3.7	68
Circulation Tanks	12.2	3.7	45
Processing Tanks	12.2	3.7	45
Coarse Solids Bin	18.3	3.7	68
Fine Solids Bin 1	12.2	3.7	45
Fine Solids Bin 2	12.2	3.7	45
<b>Total Surface Area</b>			<b>316</b>

### 4.4 Water Quantity

Pre and post-development peak flows were calculated for the 5-100 year storm using the rational method, following City standards for site servicing.

$$Q = 2.78CiA$$

Where Q = peak flow (L/s)

C = runoff coefficient

I = rainfall intensity (mm/hr)

A = drainage area (ha)

The pre-development and post-development runoff coefficients were calculated to be 0.596 and 0.596 as no change to the existing surface cover is proposed.

Pre-Development Composite Runoff Coefficient "C"			
Drainage Area	Area(ha)	C	Composite C
Landscape	0.008	0.25	
Gravel	0.710	0.6	
Total Site Area	0.718		0.596
Post-Development Composite Runoff Coefficient "C"			
Drainage Area	Area(ha)	C	Composite C
Landscape	0.008	0.25	
Gravel	0.678	0.6	
Total Post-development Drainage Area	0.686		0.596

Rainfall intensity was calculated using the IDF Curve equation and the City of Ottawa parameters.

$$I = A / (T_c + C)^B,$$

Where I = rainfall intensity (mm/hr)

A, B, C = regression constants for each return period

T<sub>d</sub> = time of duration (min)

A = drainage area (ha)

Rainfall Intensity $I = A / (T_c + C)^B$ Time of duration = 10min; A, B, C = per Section 5.4.2 of City of Ottawa Sewer Design Guidelines.						
Return Period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Rainfall Intensity (mm/hr)	76.81	104.19	122.14	144.69	161.47	178.56

Peak flows were then calculated using the rational method for both pre and post-development conditions.

Pre-Development Peak Flow Rate (L/s)						
Return Period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Total Site (C = 0.6)	91.39	123.97	145.33	172.16	192.12	212.46
Post-Development Peak Flow Rate (L/s)						
Return Period	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Post-Development Drainage Area (C = 0.6)	93.83	109.61	128.50	152.22	169.88	187.86

The release control flow rate (5 year pre-existing flow) was calculated to be **123.97 L/s**.

The required on-site storage volumes have been calculated based on the Modified Rational Method in Section 8.3.10.3 of the City's Sewer Guidelines.

Time (min)	Intensity (mm/hr)	Peak Flow (L/s)	Release Rate (L/s)	Storage Rate (L/s)	Storage Volume (m <sup>3</sup> )
10	178.56	187.86	123.97	63.87	38.33
20	119.95	126.19	123.97	2.22	2.67
30	91.87	96.65	123.97	0	0
40	75.15	79.06	123.97	0	0
50	63.95	67.28	123.97	0	0
60	55.89	58.80	123.97	0	0
70	49.79	52.38	123.97	0	0
80	44.99	47.33	123.97	0	0
90	41.11	43.25	123.97	0	0
100	37.9	39.87	123.97	0	0
110	35.2	37.03	123.97	0	0

During the 100 year storm, on-site storage of 38.33 m<sup>3</sup> is required. The existing swale provides approximately 230.5m<sup>3</sup> of storage, therefore sufficient water quantity control is provided on site.

No additional flow control is required for flows leaving the site, as the existing pipe (150mm PVC) connecting the site to the City storm sewer restricts flows sufficiently.

## 4.5 Water Quality

To capture, store, and filter the 90<sup>th</sup> percentile, the water quality volume must be calculated per the post-development site conditions. The site characteristics and calculated water quality volume are summarized in the table below.

Drainage Area (A)	0.69 ha = 6,900 m <sup>2</sup>
90 <sup>th</sup> Percentile Event (i)	28mm = 0.028 m
Runoff Coefficient (C)	0.60
I:P Ratio	5.6:1
Water Quality Control Volume	= C*i*A = <b>114.5 m<sup>3</sup></b>
Storage Volume provided by Enhanced Swale with Sand Filter	230.5m <sup>3</sup>

Per LID design guidelines enhanced swales are typically designed for I:P ratios of 5:1 in low permeability soil and drainage areas less than 2ha. The existing enhanced swale meets these requirements.

The required storage volume to capture and treat the 28mm event is equal to 114.5 m<sup>3</sup>, and as the existing enhanced swale with sand filter provides 230.5m<sup>3</sup> of storage no additional storage is required for the purpose of water quality control.

CB shields catch basin inserts are proposed for catch basins 1, 2, and 3. The addition of CB shields will prevent accumulated sediment in the catch basin sumps from being washed out, and will provide water quality treatment for events beyond the 90th percentile. These will also provide water quality treatment for flows that enter the catch basin grates during events in which the storage in the enhanced swale with sand filter is exceeded.

## 4.6 Operations and Maintenance

Specific maintenance requirements for the enhanced swale with filter sand are summarized in the following paragraph.

The enhanced swale with filter sand should be inspected after significant rainfall (events greater than 15mm) and in the spring to confirm operating conditions. Accumulated sediment should be removed from the surface of the swale, and any erosion areas should be repaired. The inlets of catch basin 1, 2, and 3 should also be kept clear of blockages, debris, and any excess vegetation to ensure flows are not impeded. The catch basin sumps should be emptied using a vac truck when the sediment depth reaches 50% of the sump capacity.

Detailed inspection guidance and maintenance activities for enhanced swales can be found in the 2016 STEP Low Impact Development Stormwater Management Practice Inspection and Maintenance Guide.

## 5 SEDIMENT AND EROSION CONTROL PLAN

### 5.1 General

During construction, existing stream and conveyance systems can be exposed to significant sediment loadings. Although construction is only a temporary situation, it is proposed to introduce a number of mitigative construction techniques to reduce unnecessary construction sediment loadings. These will include:

- groundwater in trench will be pumped into a filter mechanism prior to release to the environment;
- bulkhead barriers will be installed at the nearest downstream manhole in each sewer which connects to an existing downstream sewer;
- seepage barriers will be constructed in any temporary drainage ditches; and
- silt sacks will remain on open surface structure such as manholes and catchbasins until these structures are commissioned and put into use.

### 5.2 Trench Dewatering

During construction of municipal services, any trench dewatering using pumps will be discharged into a filter trap made up of geotextile filters and straw bales similar in design to the OPSD 219.240 Dewatering Trap. These will be constructed in a bowl shape with the fabric forming the bottom and the straw bales forming the sides. Any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filters as needed including sediment removal and disposal and material replacement as needed.

### 5.3 Bulkhead Barriers

At the first manhole constructed immediately upstream of an existing sewer, a ½ diameter bulkhead will be constructed over the lower half of the outletting sewer. This bulkhead will trap any sediment carrying flows, thus preventing any construction –related contamination of existing sewers. The bulkheads will be inspected and maintained including periodic sediment removal as needed.

### 5.4 Seepage Barriers

These barriers will consist of both the Light Duty Straw Bale Barrier as per OPSD 219.100 or the Light Duty Silt Fence Barrier as per OPSD 219.110 and will be installed in accordance with the sediment and erosion control drawing. The barriers are typically made of layers of straw bales or geotextile fabric staked in place. All seepage barriers will be inspected and maintained as needed.



## **6 CONCLUSIONS & RECOMMENDATIONS**

### **6.1 Conclusions**

This report and the accompanying working drawings clearly indicate that the proposed development meets the requirements of the stakeholder regulators, including the City of Ottawa. The proposed development is also in general conformance with the recommendations made by the 2023 Preconsultation Meeting Notes.

There is a reliable water supply available adjacent to the proposed development; a wastewater outlet is available adjacent to the site; and local storm sewers have been installed adjacent to the site.

### **6.2 Recommendations**

It is recommended that the regulators review this submission with an aim of providing the requisite approvals to permit the owners to proceed to the construction stage of the subject site.

# Appendix A



Sean Yaehne  
Harbour Environmental Group Ottawa Ltd.  
Via email: sean@harbourengroup.ca

**Subject: Pre-Consultation: Meeting Feedback  
Proposed Standard Site Plan Application – 1850 Bantree Street**

Please find below information regarding next steps as well as consolidated comments from the above-noted pre-consultation meeting held on July 10, 2023.

**Pre-Consultation Preliminary Assessment**

1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input checked="" type="checkbox"/>	5 <input type="checkbox"/>
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One (1) indicates that considerable major revisions are required while five (5) suggests that the proposal appears to meet the City’s key land use policies and guidelines. This assessment is purely advisory and does not consider technical aspects of the proposal or in any way guarantee application approval.

**Next Steps**

1. A review of the proposal and materials submitted for the above-noted pre-consultation has been undertaken. Please proceed to complete a Phase 3 Pre-consultation Application Form and submit it together with the necessary studies and/or plans to [planningcirculations@ottawa.ca](mailto:planningcirculations@ottawa.ca).
2. In your subsequent pre-consultation submission, please ensure that all comments or issues detailed herein are addressed. A detailed cover letter stating how each issue has been addressed must be included with the submission materials. Please coordinate the numbering of your responses within the cover letter with the comment number(s) herein.
3. Please note, if your development proposal changes significantly in scope, design, or density before the Phase 3 pre-consultation, you may be required to complete or repeat the Phase 2 pre-consultation process.

**Supporting Information and Material Requirements**

1. The attached **Study and Plan Identification List** outlines the information and material that has been identified, during this phase of pre-consultation, as either required (R) or advised (A) as part of a future complete application submission.
  - a. The required plans and studies must meet the City’s Terms of Reference (ToR) and/or Guidelines, as available on [Ottawa.ca](http://Ottawa.ca). These ToR and Guidelines outline



the specific requirements that must be met for each plan or study to be deemed adequate.

**Planning (Shen, Stream [Stream.Shen@ottawa.ca](mailto:Stream.Shen@ottawa.ca))**

1. The subject property is zoned as heavy industrial (IH) to the north and light industrial (IL) to the south. Waste processing and transfer facility is a permitted use in IH zones but not in IL zones. Please confirm that the proposed development will be contained on the portion of the property that is zoned IH by showing the zoning line on the site plan. Here is a link to the public [geoOttawa site](#) to help identify the line between the two zones.
2. All operations and building on site are required to be setback 7.5 metres from all property lines. Please indicate the setbacks on the site plan. Additionally, demonstrate how 1184 Innes and 1850 Bantree are considered one lot for zoning purposes using the criteria under [Section 93 – One Lot for Zoning Purposes](#).
3. 3 metres of landscaping is required around the property. Please indicate this on your site and landscape plan.
4. It is recommended that a curtesy heads-up be provided to the adjacent Canada Science and Technology Museum through the NCC ([Ted.Horton@ncc-ccn.ca](mailto:Ted.Horton@ncc-ccn.ca)) and also to the local ward Councillor (Carr, Marty [marty.carr@ottawa.ca](mailto:marty.carr@ottawa.ca))

**Urban Design (Hassan, Selma [Selma.Hassan@ottawa.ca](mailto:Selma.Hassan@ottawa.ca))**

5. Given that there are no permanent structures on the site, the Design Brief requirement can be waived.
6. Please include information on the site and landscape plan relating to access points, internal circulation, internal parking, surfacing materials, as well as the placement of structures.
7. Please provide vegetative screening in the required 3m landscape buffer. This could be a combination of large shrub and tree planting.

**Engineering (Cassidy, Tyler [tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca))**

**Infrastructure**

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MAP OF EXISTING PUBLIC SERVICES



## Water

Existing public services:

- *Bantree Street – 305 mm dia. Ductile Iron watermain (1976 Install year)*
- Watermain Frontage Fees to be paid (\$190.00 per metre)  **Yes**  **No**
- Service areas with a basic day demand greater than 50 m<sup>3</sup>/day shall provide a minimum of two water main connections to avoid the creation of vulnerable service areas.

## Sanitary Sewer

Existing public services:

- *Bantree Street – 300 mm dia. concrete sanitary sewer.*

## Storm Sewer

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Existing public services:

- *Bantree Street – 1500 mm dia. concrete storm trunk sewer.*

## Stormwater Management

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Quality Control:

- Quality control is to be provided on site.
- Quality control level of service is to the 'enhanced' criteria (80% TSS removal).
- If the soils are conducive to LIDs then explore LID measures on-site or use the City's Low Impact Development Technical Guidance Report (Dillon – February 2021) to develop Best Management Practices

Quantity Control:

- Quantity Control is to be based on:
  - Predevelopment Runoff Coefficient or 0.5, which is more conservative
  - Time of Concentration is to be calculated based on pre-development conditions.
  - Allowable release rate is to be based on the pre-development flow rate for the 5-year design storm.
  - All runoff beyond the minor system allowable release rate is to be controlled/stored on site up to the 100 year design storm

## Other

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Are there any Capital Works Projects scheduled that will impact the application?  Yes  
 No

### General Service Design Comments:

- The City of Ottawa requests that all new services be located within the existing service trench to minimize necessary road cuts.
- Monitoring manholes should be located within the property near the property line in an accessible location to City forces and free from obstruction (i.e. not a parking).
- Where service length is greater than 30 m between the building and the first maintenance hole / connection, a cleanout is required.
- The City of Ottawa Standard Detail Drawings should be referenced where possible for all work within the Public Right-of-Way.
- The upstream and downstream manhole top of grate and invert elevations are required for all new sewer connections.
- Services crossing the existing watermain or sewers need to clearly provide the obvert/invert elevations to demonstration minimum separation distances. A watermain crossing table may be provided.

- Water Boundary condition requests must include the location of the service (map or plan with connection location(s) indicated) and the expected loads required by the proposed development, including calculations. Please provide the following information:
  - Location of service
  - Type of development and the amount of fire flow required (as per FUS)
  - FUS calculations
  - Average daily demand: \_\_\_\_ l/s.
  - Maximum daily demand: \_\_\_\_ l/s.
  - Maximum hourly daily demand: \_\_\_\_ l/s

### **Exterior Site Lighting:**

Require certification by a licensed professional engineer confirming the design complies with the following:

- The location of the fixtures, fixture type (make, model, part number and the mounting height) must be shown on one of the approved plans.
- Lighting will be designed only using fixtures that meet the criteria for Full Cut-off classification, as recognized by the Illuminating Engineering Society of North America (IESNA or IES), and
- Minimal light spillage onto adjacent properties of 0.5 foot-candle

### **Sensitive Marine Clay:**

Sensitive Marine Clay (SMC) is widely found across Ottawa- geotechnical reports should include Atterberg Limits, consolidation testing, sensitivity values, and vane shear test results (at a minimum).

### **MECP ECA:**

An industrial sewage works and stormwater management works Environmental Compliance Approval from the Ministry of Environment, Conservation and Parks may be required. Consultant determines if an approval for sewage works under Section 53 of OWRA is required. Consultant then determines what type of application is required and the City's project manager confirms. (If the consultant is not clear if an ECA is required, they will work with the City to determine what is required. If the consultant is still unclear or there is a difference of opinion only then will the City PM approach the MECP.

### **References and Resources**

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- As per section 53 of the Professional Engineers Act, O. Reg 941/40, R.S.O. 1990, all documents prepared by engineers must be signed and dated on the seal.
- All required plans & reports are to be provided in \*.pdf format (at application submission and for any, and all, re-submissions)
- Servicing and site works shall be in accordance with the following documents:
  - Ottawa Sewer Design Guidelines (October 2012)
  - Ottawa Design Guidelines – Water Distribution (2010)
  - Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa (2007)

- City of Ottawa Slope Stability Guidelines for Development Applications (revised 2012)
- City of Ottawa Environmental Noise Control Guidelines (January, 2016)
- City of Ottawa Park and Pathway Development Manual (2012)
- City of Ottawa Accessibility Design Standards (2012)
- Ottawa Standard Tender Documents (latest version)
- City of Ottawa Low impact Development Technical Guidance Report (February 2021)
- Ontario Provincial Standards for Roads & Public Works (2013)
- Please find relevant City of Ottawa Links to Preparing Studies and Plans below:  
[https://ottawa.ca/en/planning-development-and-construction/residential-property-regulations/development-application-review-process/development-application-submission/planning-application-submission-information-and-materials#\\_msocom\\_1](https://ottawa.ca/en/planning-development-and-construction/residential-property-regulations/development-application-review-process/development-application-submission/planning-application-submission-information-and-materials#_msocom_1)
- To request City of Ottawa plan(s) or report information please contact the City of Ottawa Information Centre:  
[geoinformation@ottawa.ca](mailto:geoinformation@ottawa.ca)  
(613) 580-2424 ext. 44455
- geoOttawa  
<http://maps.ottawa.ca/geoOttawa/>

**Transportation (Gervais, Josiane [josiane.gervais@ottawa.ca](mailto:josiane.gervais@ottawa.ca))**

Comments:

- A TIA is not required.
- Ensure that the development proposal complies with the Right-of-Way protection requirements of the Official Plan's Schedule C16, as applicable.
- As the proposed site is commercial/institutional/industrial and for general public use, AODA legislation applies.
  - Ensure all crosswalks located internally on the site provide a TWSI at the depressed curb, per requirements of the Integrated Accessibility Standards Regulation under the AODA.
  - Clearly define accessible parking stalls and ensure they meet AODA standards (include an access aisle next to the parking stall and a pedestrian curb ramp at the end of the access aisle, as required).
  - Please consider using the City's Accessibility Design Standards, which provide a summary of AODA requirements. <https://ottawa.ca/en/city-hall/creating-equal-inclusive-and-diverse-city/accessibility-services/accessibility-design-standards-features#accessibility-design-standards>
- On site plan:
  - Ensure site access meets the City's Private Approach Bylaw.
  - Show all details of the roads abutting the site; include such items as pavement markings, accesses and/or sidewalks.
  - Turning movement diagrams required for all accesses showing the largest vehicle to access/egress the site.



- Show all curb radii measurements at site access; ensure that all curb radii are reduced as much as possible and fall within TAC guidelines (Figure 8.5.1).
- Show dimensions for site elements (i.e. lane/aisle widths, access width and throat length, parking stalls, sidewalks, pedestrian pathways, etc. as applicable)
- Grey out any area that will not be impacted by this application.

**Environment and Trees (Murray, Hayley [hayley.murray@ottawa.ca](mailto:hayley.murray@ottawa.ca) and Hayley, Matthew [Matthew.Hayley@ottawa.ca](mailto:Matthew.Hayley@ottawa.ca))**

Comments:

**Project Comments:**

- Please confirm whether 1184 Innes is part of the development site. There are trees adjacent to this parcel (at 1890 Bantree) that would need to be captured in a TCR, if the answer is yes.
- Any trees 10 cm or greater on the subject site would trigger a TCR submission.
- Adjacently owned trees must be protected through development and would need to be captured in a TCR, if present.

**TCR requirements**

1. The TCR must list all trees on site, as well as off-site trees if the CRZ extends into the developed area, by species, diameter and health condition
  - a. please identify trees by ownership – private onsite, private on adjoining site, city owned, boundary (trees on a property line)
2. If trees are to be removed, the TCR must clearly show where they are, and document the reason they cannot be retained
3. All retained trees must be shown, and all retained trees within the area impacted by the development process must be protected as per City guidelines available at [Tree Protection Specification](#) or by searching Ottawa.ca
4. The location of tree protection fencing must be shown on the plan
5. The City encourages the retention of healthy trees; if possible, please seek opportunities for retention of trees that will contribute to the design/function of the site.
6. For more information on the process or help with tree retention options, contact Hayley Murray [hayley.murray@ottawa.ca](mailto:hayley.murray@ottawa.ca) or on [City of Ottawa](#)

**LP Tree planting requirements**

***Minimum Setbacks***

- Maintain 1.5m from sidewalk or MUP/cycle track or water service laterals.
- Maintain 2.5m from curb

- Coniferous species require a minimum 4.5m setback from curb, sidewalk or MUP/cycle track/pathway.
- Maintain 7.5m between large growing trees, and 4m between small growing trees. Park or open space planting should consider 10m spacing, except where otherwise approved in naturalization / afforestation areas. Adhere to Ottawa Hydro’s planting guidelines (species and setbacks) when **planting around overhead primary conductors.**

***Tree specifications***

- Minimum stock size: 50mm tree caliper for deciduous, 200cm height for coniferous.
- Maximize the use of large deciduous species wherever possible to maximize future canopy coverage
- Tree planting on city property shall be in accordance with the City of Ottawa’s Tree Planting Specification; and include watering and warranty as described in the specification (can be provided by Forestry Services).
- Plant native trees whenever possible
- No root barriers, dead-man anchor systems, or planters are permitted.
- No tree stakes unless necessary (and only 1 on the prevailing winds side of the tree)

***Hard surface planting***

- Curb style planter is highly recommended
- No grates are to be used and if guards are required, City of Ottawa standard (which can be provided) shall be used.
- Trees are to be planted at grade

**Soil Volume**

- Please document on the LP that adequate soil volumes can be met:

Tree Type/Size	Single Tree Soil Volume (m3)	Multiple Tree Soil Volume (m3/tree)
Ornamental	15	9
Columnar	15	9
Small	20	12
Medium	25	15
Large	30	18
Conifer	25	15

- \*\* Please note that these soil volumes are not applicable in cases with Sensitive Marine Clay \*\*
- Please follow the City's 2017 Tree Planting in Sensitive Marine Clay guidelines for trees in the Right of Way

### **Tree Canopy**

- The landscape plan shall show how the proposed tree planting will replace and increase canopy cover on the site over time, to support the City's 40% urban forest canopy cover target.
- At a site level, efforts shall be made to provide as much canopy cover as possible, through tree planting and tree retention, with an aim of 40% canopy cover at 40 years, as appropriate. Indicate on the plan the projected future canopy cover at 40 years for the site.

### **Other**

8. The High Performance Development Standard (HPDS) is a collection of voluntary and required standards that raise the performance of new building projects to achieve sustainable and resilient design. The HPDS was passed by Council on April 13, 2022.
  - a. At this time, the HPDS is not in effect and Council has referred the 2023 HPDS Update Report back to staff with direction to bring forward an updated report to Committee with recommendations for revised phasing timelines, resource requirements and associated amendments to the Site Plan Control By-law by no later than Q1 2024.
  - b. Please refer to the HPDS information attached and [ottawa.ca/HPDS](http://ottawa.ca/HPDS) for more information.

Should there be any questions, please do not hesitate to contact myself or the contact identified for the above areas / disciplines.

Yours Truly,  
Stream Shen

**ENVIRONMENTAL COMPLIANCE APPROVAL**

NUMBER 2401-D5NNSH

Issue Date: July 12, 2024

Harbour Environmental Group (NW Calgary) Ltd.  
3500 25th St NE, No. 3432  
Calgary, Alberta  
T1Y 6C1

Site Location: 1850 Bantree Street  
Ottawa, Ontario  
K1B 5L6

*You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:*

a waste disposal site

to be used for the processing of the following types of waste:

non-hazardous Liquid Soil originated from hydrovac and horizontal directional drilling operations using Harbour Soil Reclamation System .

Note: Use of the site for any other type of waste is not approved under this environmental compliance approval, and requires obtaining a separate approval amending this environmental compliance approval.

*For the purpose of this environmental compliance approval, the following definitions apply:*

"Approval" means this entire provisional Environmental Compliance Approval document, issued in accordance with Part II.1 of the EPA, and includes any schedules to it, the application and the supporting documentation listed in Schedule "A", as amended from time to time;

"Design and Operations Report" means the document describing all on-site operations, procedures and environmental protection measures, further described in the conditions of this Approval;

"Director" means any Ministry employee appointed in writing by the Minister pursuant to section 5 of the EPA as a Director for the purposes of Part V of the EPA;

"District Manager" means the District Manager of the local district office of the Ministry in which the Site is geographically located;

"EPA" means Environmental Protection Act, R.S.O. 1990, c. E.19, as amended;

"Liquid Soil" has the same meaning as in O. Reg. 406/19 and means a soil that has a slump of more than 150 millimetres using the Test Method for the Determination of "Liquid Waste" (slump test) set out in Schedule 9 to Regulation 347;

"Minister" means the Minister of the Environment, Conservation and Parks, or such other member of the Executive Council, as may be assigned the administration of the EPA and OWRA under the Executive Council Act, R.S.O. 1990 c. E.25;

"Ministry" means the ministry of the Environment, Conservation and Parks;

"NMA" means the Nutrient Management Act, 2002, S.O. 2002, c. 4, as amended.

"Operator" means any person, other than the Owner's employees, authorized by the Owner as having the charge, management or control of any aspect of the Site, and includes its successors or assigns;

"O. Reg. 406/19" means Ontario Regulation 406/19 - On-Site and Excess Soil Management, made under the EPA, as amended from time to time;

"Owner" means any person that is responsible for the establishment or operation of the Site being approved by this Approval, and includes Harbour Environmental Group (NW Calgary) Ltd., its successors and assigns;

"OWRA" means the Ontario Water Resources Act, R.S.O. 1990, c. O.40, as amended;

"PA" means the Pesticides Act, R.S.O. 1990, c. P.11, as amended;

"Provincial Officer" means any person designated in writing by the Minister as a provincial officer pursuant to section 5 of the OWRA or section 5 of the EPA or section 17 of PA;

"Regional Director" means the Regional Director of the local regional office of the Ministry in which the Site is located;

"Reg. 347" means R.R.O. 1990, Regulation 347: General - Waste Management, made under the EPA, as amended from time to time;

"SDWA" means the Safe Drinking Water Act, 2002, S.O. 2002, c. 32, as amended.

"Site" means the facility located at 1850 Bantree Street, Ottawa, Ontario, authorized by this Approval;

"Soil Rules" means the Ministry's "Rules for Soil Management and Excess Soil Quality Standards" document, 2020;

"Trained Personnel" means persons knowledgeable in the following through instruction and/or

practice:

- a. relevant waste management legislation, regulations and guidelines;
- b. major environmental concerns pertaining to the material being handled;
- c. occupational health and safety concerns pertaining to the processes and materials being handled;
- d. site management procedures, including the use and operation of the equipment that person is required to operate for the processes and materials being handled by that person;
- e. emergency response procedures;
- f. specific written procedures for the control of nuisance conditions;
- g. specific written procedures for management of unacceptable loads;
- h. the requirements of this Approval.

*You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:*

## TERMS AND CONDITIONS

### GENERAL

#### **Compliance**

1. The Owner and Operator shall ensure compliance with all the conditions of this Approval and shall ensure that any person authorized to carry out work on or operate any aspect of the Site is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.
2. Any person authorized to carry out work on or operate any aspect of the Site shall comply with the conditions of this Approval.

#### **In Accordance**

3. (1) Except as otherwise provided by this Approval, the Site shall be designed, developed, built, operated and maintained in accordance with the application for this Approval, dated March 11, 2024, and the supporting documentation listed in Schedule "A".
  - (2) a. Construction and installation of the aspects of the Site described in the application for

this Approval must be completed within 5 years of the later of:

- (i) the date this Approval is issued; or
  - (ii) if there is a hearing or other litigation in respect of the issuance of this Approval, the date that this hearing or litigation is disposed of, including all appeals.
- b. This Approval ceases to apply in respect of the aspects of the Site noted above that have not been constructed or installed before the later of the dates identified in Condition 3(2)1 above.

### **Interpretation**

- 4. Where there is a conflict between a provision of any document, including the application, referred to in this Approval, and the conditions of this Approval, the conditions in this Approval shall take precedence.
- 5. Where there is a conflict between the application and a provision in any documents listed in Schedule "A", the application shall take precedence, unless it is clear that the purpose of the document was to amend the application and that the Ministry approved the amendment.
- 6. Where there is a conflict between any two documents listed in Schedule "A", other than the application, the document bearing the most recent date shall take precedence.
- 7. The requirements of this Approval are severable. If any requirement of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such requirement to other circumstances and the remainder of this Approval shall not be affected thereby.

### **Other Legal Obligations**

- 8. The issuance of, and compliance with, this Approval does not:
  - (a) relieve any person of any obligation to comply with any provision of any applicable statute, regulation or other legal requirement including, but not limited to:
    - (i) obtaining site plan approval from the local municipal authority;
    - (ii) obtaining all necessary building permits from the local municipal authority Building Services Division;
    - (iii) obtaining approval from the Chief Fire Prevention Officer, or local municipal authority.

- (b) limit in any way the authority of the Ministry to require certain steps be taken or to require the Owner and Operator to furnish any further information related to compliance with this Approval.

### **Adverse Effects**

- 9. The Owner and Operator shall take steps to minimize and ameliorate any adverse effect (as defined in the EPA) or impairment of air quality or water quality resulting from operations at the Site, including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment.
- 10. Despite an Owner, Operator or any other person fulfilling any obligations imposed by this Approval the person remains responsible for any contravention of any other condition of this Approval or any applicable statute, regulation, or other legal requirement resulting from any act or omission that caused the adverse effect (as defined in the EPA) or impairment of water quality.

### **Change of Owner**

- 11. The Owner shall notify the Director in writing, and forward a copy of the notification to the District Manager, within 30 days of the occurrence of any of the following changes:
  - a. the ownership of the Site
  - b. the Owner or Operator of the Site;
  - c. the name or address of the Owner or Operator;
  - d. the partners, where the Owner or Operator is or at any time becomes a partnership and a copy of the most recent declaration filed under the Partnerships Act, R.S.O. 1990, c. P.5 shall be included in the notification; or
  - e. the directors, where the Owner of the Operator is or at any time becomes a corporation, and a copy of the most current information filed as required by the Corporations Information Act, R.S.O. 1990, c. C.39 shall be included in the notification.
- 12. No portion of this Site shall be transferred or encumbered prior to or after closing of the Site unless the Director is notified in advance and sufficient financial assurance is deposited with the Ministry to ensure that these conditions will be carried out.

### **Inspections**

- 13. No person shall hinder or obstruct a Provincial Officer in the performance of their duties, including any and all inspections authorized by the OWRA, the EPA or the PA or the NMA or



the SDWA of any place to which this Approval relates, and without limiting the foregoing to:

- a. enter upon the premises where the Site is located, or the location where the records required by the conditions of this Approval are kept;
- b. have access to, inspect, and copy any records required by the conditions of this Approval;
- c. inspect the practices, procedures, or operations required by the terms and conditions of this Approval; and
- d. sample and monitor for the purposes of assessing compliance with the conditions of this Approval or the EPA, the OWRA or the PA or the NMA or the SDWA.

### **Financial Assurance**

14. By July 30th, 2024, the Owner shall submit financial assurance as defined in Section 131 of the EPA to the Director in the amount of \$72,933.00. This financial assurance shall be in a form and amount acceptable to the Director and shall provide sufficient funds to pay for compliance with and performance of any action specified in this Approval, including Site clean-up, monitoring and the disposal of all quantities of waste on-site, closure and post-closure care of the Site and contingency plans for the Site.
15. Commencing on June 30th, 2029, and every 5 years thereafter, the Owner shall provide to the Director a re-evaluation of the amount of the financial assurance required to facilitate the actions described under condition 14 above.
16. The amount of financial assurance is subject to review at any time by the Director and may be amended at his/her discretion. If any financial assurance is scheduled to expire or notice is received, indicating financial assurance will not be renewed, and satisfactory methods have not been made to replace the financial assurance at least 60 days before the financial assurance terminates, the financial assurance shall forthwith be replaced by cash.

### **Information and Record Retention**

17. Any information requested by the Ministry concerning the Site and its operation under this Approval, including, but not limited to, any records required to be kept by this Approval, shall be provided in a timely manner to the Ministry, upon request. Records shall be retained for 5 years unless otherwise authorized in writing by the Director.
18. The receipt of any information by the Ministry or the failure of the Ministry to prosecute any person or to require any person to take any action, under this Approval or under any statute, regulation or other legal requirement, in relation to the information, shall not be construed as:
  - a. an approval, waiver, or justification by the Ministry of any act or omission of any person that contravenes any term or condition of this Approval or any statute, regulation or other

legal requirement; or

- b. acceptance by the Ministry of the information's completeness or accuracy.

## **OPERATIONS**

### **Hours of Operation**

- 19. (1) Outside loading and unloading of waste (Liquid Soil) and processed soil and receiving and shipping of waste (Liquid Soil) and processed soil may be carried out between the hours of 6:00 am and 7:00 pm, Monday through Friday, and between 7:00 am and 5:00 pm on Saturdays, unless otherwise restricted by municipal by-laws.
- (2) Notwithstanding Condition 19(1) above, waste generated through emergency activities (including emergency repair work) may be received at the Site 24 hours per day, 7 days per week, unless otherwise restricted by municipal by-laws.
- (3) Within 24 hours of receiving waste in accordance with Condition 19(2) above, the Owner shall notify the District Manager in writing of the following:
  - a. the date and time of receipt;
  - b. the type and amount of waste received; and
  - c. the nature of the emergency activity.

### **Service Area**

- 20. Only waste generated in the Province of Ontario shall be accepted at the Site.

### **Acceptable Materials**

- 21. No waste other than non-hazardous Liquid Soil originated from hydrovac and horizontal directional drilling operations shall be accepted at the Site.

### **On-Site Management**

- 22. The Site is approved for the following waste management activities:
  - (1) The receipt, temporary storage and transfer of Liquid Soil, and processed soil.
  - (2) The processing of Liquid Soil using the equipment described in Item 1 of Schedule "A", including the screening of Liquid Soil, mechanical shaker to separate rock, sand, flocculation (mixing flocculent agents) to remove silt and clay, processed soil storage stockpile on a concrete lined containment cells and filtration of decanted water for removal

of suspended solids.

- (4) Non-hazardous flocculant agents included in the Design and Operations Report included as Item 2 in Schedule "A" shall only be used for separation of silt and clay from Liquid Soil.

### **Receiving and Storage Limits**

23. (1) The amount of Liquid Soil received at the Site shall not exceed 650 cubic metres per day.
- (2) The amount of waste present at the Site at any one time shall not exceed the following:
  - a. 130 cubic metres of residual liquid wastewater;
  - b. 2,100 tonnes excess soil (processed) including debris.
- (3) The Owner shall refuse any load if the receipt of that load could reasonably be expected to cause non-compliance with this Approval, including the receipt and storage limitations set out above.

### **Soil Receipt and Handling**

24. (1) a. Trained Personnel shall supervise all shipments of waste received at the Site. Prior to any shipment being unloaded, Trained Personnel shall review the accompanying information for that shipment, and examine the contents of the truck where possible, to ensure the waste matches the description provided and that the waste is permitted to be received further to the conditions of this Approval. At minimum, Trained Personnel shall conduct fielding testing as specified in Appendix E - Harbour Environmental Group Relevant Standard Operating Procedures and in accordance with Table 1 included in Schedule "B" of this Approval. If any shipment is suspected of containing unapproved waste, that shipment shall be refused and shall not be unloaded at the Site.
- b. Trained Personnel shall examine all shipments of waste while they are being unloaded. If at any time a shipment is discovered to contain unapproved material, the shipment shall be refused and all portions of the shipment that can be recovered shall be removed from the Site.
- (2) In the event that a shipment of waste is rejected from the Site, the Owner shall forthwith notify the District Office of the following in writing:
  - a. the name of the company that brought the rejected load to the Site;
  - b. the license plate number of the vehicle that brought the rejected load to the Site;

- c. a description of the rejected waste and the reason for rejecting the shipment; and
  - d. the destination of the rejected waste if the driver provides that information.
- (3) All Liquid Soil shall be unloaded directly into the dump tank in a manner that prevents spills during transfer.
- (4) The Owner shall ensure that:
  - a. no process water is loaded onto trucks for reuse purposes;
  - b. no process water is discharged directly to any waterbody or any other part of the natural environment, or otherwise in a manner that requires approval under Section 53 of the OWRA, unless such an approval is in effect for the Site; and
  - c. all process water is otherwise managed in accordance with applicable municipal, provincial and federal requirements, which may include discharge to sanitary sewer as permitted by the local municipality or disposal of the process water off-site in a facility permitted to receive such material.
- (5) Processes soil shall not be stored (stockpiled) within 30 m of waterbody and 10 m of the property boundary. The height of any outdoor stockpile shall not exceed 4.3 m in height.
- (6) Soil and aggregate (rock) recovered from processing of Liquid Soil may be stored outdoors in designated areas (concrete lined containment cell).
- (7) The Owner shall ensure the following to minimize impacts from wind-blown dust:
  - a. cloth barrier material is attached to all perimeter fencing, or other barriers such as concrete blocks or acoustic barriers are employed in a manner that prevents off-site impacts from wind-blown dust;
  - b. stockpiles are wetted as necessary, using water from the municipal or on-site water supply source;
  - c. water from on-site water supply source is used as necessary during any outdoor loading or unloading operation;
  - d. the site is regularly wet-swept clean using water from the municipal or on-site water supply source.
- (8) Soils that have been tested shall remain segregated from all other soils on-site.
- (9) The Owner shall ensure that all process water is stored in accordance with the Ministry's "Guidelines for Environmental Protection Measures at Chemical and Waste Storage"

Facilities" document dated May 2007, specifically Sections 2, 3, 7, 8, 9 and 10 of that document.

- (10) The decanted effluent shall be transported to the City of Ottawa approved wastewater treatment facility (Robert O. Pickard Environmental Centre) using transportation system having an approved waste management system or discharged to sanitary sewer as permitted by the local municipality in accordance with applicable municipal and provincial requirements.

### **Soil Sampling, Analysis and Reuse**

25. No processed soil or dewatered soil shall leave the Site for reuse unless it has been sampled, analysed and managed in accordance with the following:
  - a. The Owner shall ensure that sampling, analysis and the number of samples collected for each stockpile is in accordance with Table 2 of Schedule E in Ontario Regulation 153/04 or Section B of Part I of the Soil Rules.
  - b. The Owner shall ensure that discrete samples of the processed soil or dewatered soil are taken and analysed for:
    - i. metals;
    - ii. hydride-forming metals;
    - iii. petroleum hydrocarbons (PHCs) [F1 to F4];
    - iv. benzene, toluene, ethylbenzene, xylene (BTEX);
    - v. Sodium adsorption ratio (SR) and electrical conductivity (EC)
    - vi. Volatile organic compounds (VOC)
    - v. Semi-volatile organic compounds (SVOC) including polychlorinated biphenyls (PCB)
  - c. The Owner shall ensure that each processed soil load leaving the Site is tested in accordance with Schedule 9 in Reg. 347 ("slump test") to ensure the processed soil is solid.
  - d. The Owner shall ensure that any additional sampling and analysis specific to the receiving site shall be carried out as required by the local municipality, the local conservation authority and any applicable federal/provincial legislation.
  - e. Should the receiving site be subject to the requirements set out in Ontario Regulation 153/04, the Owner shall ensure that any additional sampling and analysis specific to the

receiving site shall be carried out as recommended by the Qualified Person for the receiving site.

- f. Sampling procedures, including methods, equipment and techniques for collection of representative samples and procedures for handling of the samples shall be in accordance with the requirements set out in the Section B of Part I of the Soil Rules and in accordance with the instructions of the accredited laboratory service provider carrying out the analytical testing.
- g. When determining bulk concentrations of contaminants in the processed soil to verify compliance with the Soil Standards, the testing shall be in compliance with the “Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act”, dated July 1, 2011, as amended and in accordance with the industry standards.
- h. The Owner shall submit the samples to an accredited laboratory for the required analysis. All samples shall be handled in accordance with the instructions of the accredited laboratory carrying out the analytical testing.
- i. Processed soil to be sent off-site for beneficial reuse as described Section 5(1)3 in Ontario Regulation 406/19 shall only be sent off-site for reuse in accordance with Section 3 of Ontario Regulation 406/19 and the Soil Rules. All other processed soil shall only be transferred off-site to a waste disposal site that is approved to accept that type of material in accordance with the Environmental Compliance Approval for that site, or to a location not required to obtain an Environmental Compliance Approval to manage that material.
- j. Rock (having a same meaning as in Ontario Regulation 406/19) that does not meet the definition of inert fill set out in Reg. 347 shall only be transferred off-site to a waste disposal site that is approved to accept that type of material in accordance with the Environmental Compliance Approval for that site, or to a location not required to obtain an Environmental Compliance Approval to manage that material.
- k. The Owner shall maintain a Quality Assurance/Quality Control (QA/QC) program for sampling and analysis of wastes, as required by this Approval, and shall make the results of the QA/QC program, including all analyses carried out by an accredited laboratory service provider, available for inspection upon request by the District Manager, the Director and any Provincial Officer.

### **Signage and Security**

- 26. A sign shall be posted and maintained at the entrance to the Site in a manner that is clear and legible, and shall include the following information:
  - a. the name of the Site and Owner;

- b. this Approval number;
  - c. the name of the Operator;
  - d. the normal hours of operation as described in Condition 19 above;
  - e. the allowed materials that may be accepted at the Site, and any materials explicitly prohibited by conditions of this Approval;
  - f. a telephone number to which complaints may be directed; and
  - g. a twenty-four (24) hour emergency telephone number (if different from above).
27. The Site shall be operated and maintained in a secure manner, such that unauthorized persons cannot enter the Site.

### **Design and Operations Report**

28. 1. The Company shall maintain an up-to-date Design and Operations Report for the Site, which shall contain at a minimum the information required by the Ministry's "Guide to applying for an Environmental Compliance Approval" as it applies to the Site.
2. The Design and Operations Report shall be:
- a. kept up-to-date at all times so that it accurately reflects the ongoing Site activities as approved under this Approval;
  - b. retained at the Site;
  - c. available for inspection by a Provincial Officer upon request; and
  - d. updated and submitted with all future Environmental Compliance Approval applications for the Site, including a revisions tracking log.
3. Changes to the Site's operations that do not require an amendment to this Approval under Section 27 of the EPA shall be recorded in a revisions tracking log in the Design and Operations Report and submitted to the District Manager for record keeping.

### **Staff Training**

29. The Owner shall maintain a training plan to be used to train all employees that operate the Site.
30. The Owner shall ensure that Trained Personnel are available at all times during the hours of operation of this Site, and that Trained Personnel supervise all management of dry excess soils,

Liquid Soils, aggregate, processed soils and process water at the Site.

### **Site Inspection**

31. An inspection of the entire Site and all equipment on the Site shall be conducted each day the Site is in operation to ensure that:
- a. the Site is secure;
  - b. the operation of the Site is not causing any nuisances;
  - c. the operation of the Site is not causing any adverse effects on the environment; and
  - d. the Site is being operated in compliance with this Approval.

Any deficiencies discovered as a result of the inspection shall be remedied immediately or as soon as practicable, which may require temporarily ceasing operations at the Site if needed.

32. A record of the inspections, including the following information, shall be kept in the daily log book:
- a. the name and signature of person that conducted the inspection;
  - b. the date and time of the inspection;
  - c. a list of any deficiencies discovered;
  - d. any recommendations for remedial action; and
  - e. the date, time and description of actions taken.

### **Nuisances**

33. The Site shall be operated and maintained such that vermin, vectors, dust, litter, odour, noise and traffic do not create a nuisance. The Owner shall implement the nuisance control measures noted in the application for this Approval as required to address any nuisances.

### **Complaint Response**

34. If at any time the Owner receives a complaint regarding an adverse effect (as defined in the EPA) due to operation of the Site, the Owner shall respond to the complaint according to the following procedure:
- (1) The Owner shall record and number each complaint, either electronically or in a separate



log book, along with the following information:

- a. the nature of the complaint;
- b. the name, address and telephone number of the complainant (if provided);
- c. the date and time the complaint was received;
- d. a description of the weather conditions at the time of the complaint;
- e. a description of the Liquid Soils, processed soils and process water handling activities taking place at the time of the complaint; and
- f. a description of the known or suspected activity causing the complaint.

(2) The Owner shall:

- a. initiate appropriate steps to determine all possible causes of the complaint;
- b. proceed to take the necessary actions to eliminate the cause of the complaint;
- c. notify the District Manager of the complaint within one business day of receiving the complaint;
- d. forward a written response to the District Manager within 5 business days of receiving the complaint, with a copy to the complainant if they have identified themselves, that describes the actions taken to address the complaint; and
- e. forward daily updates to the District Manager, if requested, until the complaint is resolved.

(3) The Owner shall complete and retain on-site a report written within 10 business days of the complaint date, including:

- a. the information required in conditions 34(1) and 34(2) above;
- b. a list of the actions taken to resolve the complaint; and
- c. recommendations for any remedial measures, managerial changes or operational changes that would reasonably avoid the recurrence of similar incidents in the future.

### **Emergency Response Plan**

35. The Owner shall prepare and provide copies of an emergency response plan to the Fire Department within 30 days of the issuance of this Approval, and shall inform the District

Manager in writing within 10 days of receiving acceptance of the plan by the Fire Department.

36. The emergency response plan shall be kept up to date, and a copy shall be retained and accessible to all staff at all times.
37. The equipment, materials and personnel requirements outlined in the emergency response plan shall be immediately available on the Site at all times. The equipment shall be kept in a good state of repair and in a fully operational condition.
38. Each staff member that operates the Site shall be fully trained in the use of the equipment they are required to operate under the emergency response plan and in the procedures to be employed in the event of an emergency.
39. The Owner shall immediately take all measures necessary to contain and clean up any spill (as defined in the EPA) which may result from the operation of this Site and immediately implement the emergency response plan if required.

#### **Closure Plan**

40. A Closure Plan shall be submitted to the Director for approval, with a copy to the District Manager, no later than six (6) months before the planned closure date of the Site. The Closure Plan shall include, at a minimum, a description of the work that will be done to facilitate closure of the Site and a schedule for completion of that work.
41. The Site shall be closed in accordance with the approved Closure Plan.
42. No more than 10 days after closure of the Site, the Owner shall notify the Director, in writing, that the Site is closed and that the approved Closure Plan has been implemented.

#### **Daily Log Book**

43. A daily log shall be maintained at the Site, either electronically or in written format, and shall include the following information as a minimum:
  - a. the date;
  - b. quantities and sources of all waste received at the Site;
  - c. estimated quantities of all stockpiled soil on-site at the end of each operating day;
  - d. quantities and destinations of all dry soil, Liquid Soil, processed soil, process water, rock and debris shipped from the Site;
  - e. a record of all sampling and analysis carried out further to the conditions of this Approval;

- f. a record of daily inspections required by this Approval;
- g. a record of any process upsets or spills with the potential to enter the natural environment, the nature of the spill or process upset and the action taken for the clean up or correction of the spill, the time and date of the spill or process upset, and for spills, the time that the Ministry and other persons were notified of the spill in fulfilment of the reporting requirements in the EPA .
- h. a record of any refusals, including the types and amounts of waste refused, reasons for refusal and actions taken;
- i. a record of all complaints received regarding operations at the Site; and
- j. incoming Liquid Soil screening information collected under Condition 24(1)(a).

## **Reporting**

44. By December 31, 2025, and on an annual basis thereafter, the Owner shall prepare a written report for the previous calendar year that shall be kept on-site and made available to any Provincial Officer upon request. The report shall include, at a minimum, the following information:
- a. a detailed monthly summary of the type and quantity of all incoming and outgoing Liquid Soil, processed soils, process water, rock and debris and the destination of all outgoing processed soils, process water, rock and debris along with a summary of all sampling and analysis for outgoing materials;
  - b. any environmental and operational problems, that could negatively impact the natural environment (as defined in the EPA), encountered during the operation of the Site and during the facility inspections and any mitigative actions taken;
  - c. any changes to the emergency response plan or the Design and Operations Report since the last Annual Report;
  - d. any recommendations to minimize environmental impacts from the operation of the Site and to improve Site operations and monitoring programs in this regard.

## **Schedule "A"**

### **This Schedule forms a part of this Approval:**

1. Environmental Compliance Approval application dated March 11, 2024, signed by Sean Yaehne, including all supporting documentation.
2. Design and Operations Report, LEA Consulting Ltd., dated March 11, 2024.

## Schedule "B"

**Table 1 - Field Testing of Slurry (for each hydrovac slurry load delivered to the site)**

Parameter	Analytical Method	Sampling Frequency	Limits	Disposal
<b>Field Testing of Slurry (for each Hydrovac Slurry Load Delivered to Site)</b>				
Petroleum Hydrocarbons	OilScreenSoil™	If contamination is suspected	Not contaminated: = < 500 ppm Contaminated = > 500 ppm	Clean: dump tank  Dirty: back into hydrovac truck for offsite disposal at accredited facility
If contamination is suspected by means of material provenance, visible sheen, odor or PHC screening, the following tests are performed:				
pH	pH Test Strips	If contamination is suspected	Not contaminated: 6 to 8 Contaminated: < 6 or > 8	Testing Waste: stored in waste bin and disposed of at an approved waste management facility
Chlorides	QuanTab Test Strips®			

*The reasons for the imposition of these terms and conditions are as follows:*

- 1. The reason for the definitions section is to simplify the wording of the subsequent conditions and define the specific meaning of terms as used in this Approval.*
- 2. The reason for Conditions 1, 2, 4, 5, 6, 7, 8, 9, and 10 to clarify the legal rights and responsibilities of the Owner and Operator.*
- 3. The reason for Condition 3 is to ensure that the Site is operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider.*
- 4. The reasons for Condition 11 are to ensure that the Site is operated under the corporate name which appears on the application form submitted for this approval and to ensure that the Director is informed of any changes.*
- 5. The reasons for Condition 12 are to restrict potential transfer or encumbrance of the Site without the approval of the Director and to ensure that any transfer of encumbrance can be made only on the basis that it will not endanger compliance with this Approval.*
- 6. The reason for Conditions 13 is to ensure that appropriate Ministry staff have ready access to the Site for inspection of facilities, equipment, practices and operations required by the conditions in this Approval. This condition is supplementary to the powers of entry afforded a Provincial Officer pursuant to the EPA, OWRA and PA.*
- 7. The reason for Conditions 14, 15 and 16 is to ensure that sufficient funds are available to the Ministry to clean up the Site in the event that the Owner is unable or unwilling to do so.*
- 8. The reason for Conditions 17 and 18 Condition 1.8 has been included in order to clarify what information may be subject to the Freedom of Information Act.*
- 9. The reason for Condition 19 is to specify the hours of operation for the Site.*
- 10. The reason for Condition 20 is to specify the approved service area from which waste may be accepted at the Site.*
- 11. The reasons for Conditions 21, 22 and 23 are to specify the types of materials that may be accepted at the Site, the maximum amounts of waste that may be stored at the Site, the maximum rate at which the Site may receive and ship waste and the allowable methods of processing based on the Owner's application and supporting documentation.*
- 12. The reason for Condition 24 is to ensure that all wastes received at the Site are properly identified and classified to ensure they are managed in a manner that protects the health and*

*safety of people and the environment.*

13. *The reasons for Condition 25 is to ensure that all processed material is testing and to ensure that any processed material is only sent off-site for reuse to an appropriate receiving facility.*
14. *The reason for Condition 26 is to ensure that users of the Site are fully aware of important information and restrictions related to Site operations and access under this Approval.*
15. *The reason for Condition 27 is to ensure the controlled access and integrity of the Site by preventing unauthorized access when the Site is closed and no site attendant is on duty.*
16. *The reason for Conditions 28 and 33 is to ensure that the Site is operated in a manner which does not result in a nuisance or a hazard to the health and safety of people and the environment.*
17. *The reason for Conditions 29 and 30 is to ensure that the Site is operated by properly Trained staff in a manner which does not result in a hazard or nuisance to people or the environment.*
18. *The reason for Conditions 31 and 32 is to ensure that inspections of all Site grounds and infrastructure are carried out on a regular basis, and that detailed records of Site inspections are recorded and maintained for compliance and information purposes.*
19. *The reason for Condition 34 is to ensure that any complaints regarding Site operations at the Site are responded to in a timely manner.*
20. *The reasons for Conditions 35, 36, 37, 38 and 39 is to ensure that an Emergency Response Plan and a Fire Safety Plan are developed and maintained at the Site, and that staff are properly trained in the operation of the equipment used at the Site and emergency response procedures.*
21. *The reason for Conditions 40, 41 and 42 is to ensure that the Site is closed in accordance with Ministry standards and to protect the health and safety of the public and the environment.*
22. *The reason for Condition 43 is to provide for the proper assessment of effectiveness and efficiency of site design and operation, their effect or relationship to any nuisance or environmental impacts, and the occurrence of any public complaints or concerns. Record keeping is necessary to determine compliance with this Approval, the EPA and its regulations.*
22. *The reason for Condition 44 is to ensure that regular review of site development, operations and monitoring data is documented and any possible improvements to site design, operations or monitoring programs are identified. An annual report is an important tool used in reviewing site activities and for determining the effectiveness of site design.*

In accordance with Section 139 of the *Environmental Protection Act*, you may by written notice served upon me, the Ontario Land Tribunal and in accordance with Section 47 of the *Environmental Bill of Rights*, 1993, the Minister of the Environment, Conservation and Parks, within 15 days after receipt of this notice, require a hearing by the Tribunal. The Minister of the Environment, Conservation and Parks will place notice of your

appeal on the Environmental Registry. Section 142 of the *Environmental Protection Act* provides that the notice requiring the hearing ("the Notice") shall state:

- a. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
- b. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

- 1. The name of the appellant;
- 2. The address of the appellant;
- 3. The environmental compliance approval number;
- 4. The date of the environmental compliance approval;
- 5. The name of the Director, and;
- 6. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

Registrar\*  
Ontario Land Tribunal  
655 Bay Street, Suite 1500  
Toronto, Ontario  
M5G 1E5  
OLT.Registrar@ontario.ca

and

The Minister of the Environment,  
Conservation and Parks  
777 Bay Street, 5th Floor  
Toronto, Ontario  
M7A 2J3

and

The Director appointed for the purposes of  
Part II.1 of the *Environmental Protection Act*  
Ministry of the Environment,  
Conservation and Parks  
135 St. Clair Avenue West, 1st Floor  
Toronto, Ontario  
M4V 1P5

**\* Further information on the Ontario Land Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349 or 1 (866) 448-2248, or [www.olt.gov.on.ca](http://www.olt.gov.on.ca)**

This instrument is subject to Section 38 of the *Environmental Bill of Rights*, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at <https://ero.ontario.ca/>, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the *Environmental Protection Act*.

DATED AT TORONTO this 12th day of July, 2024



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Mohsen Keyvani, P.Eng.

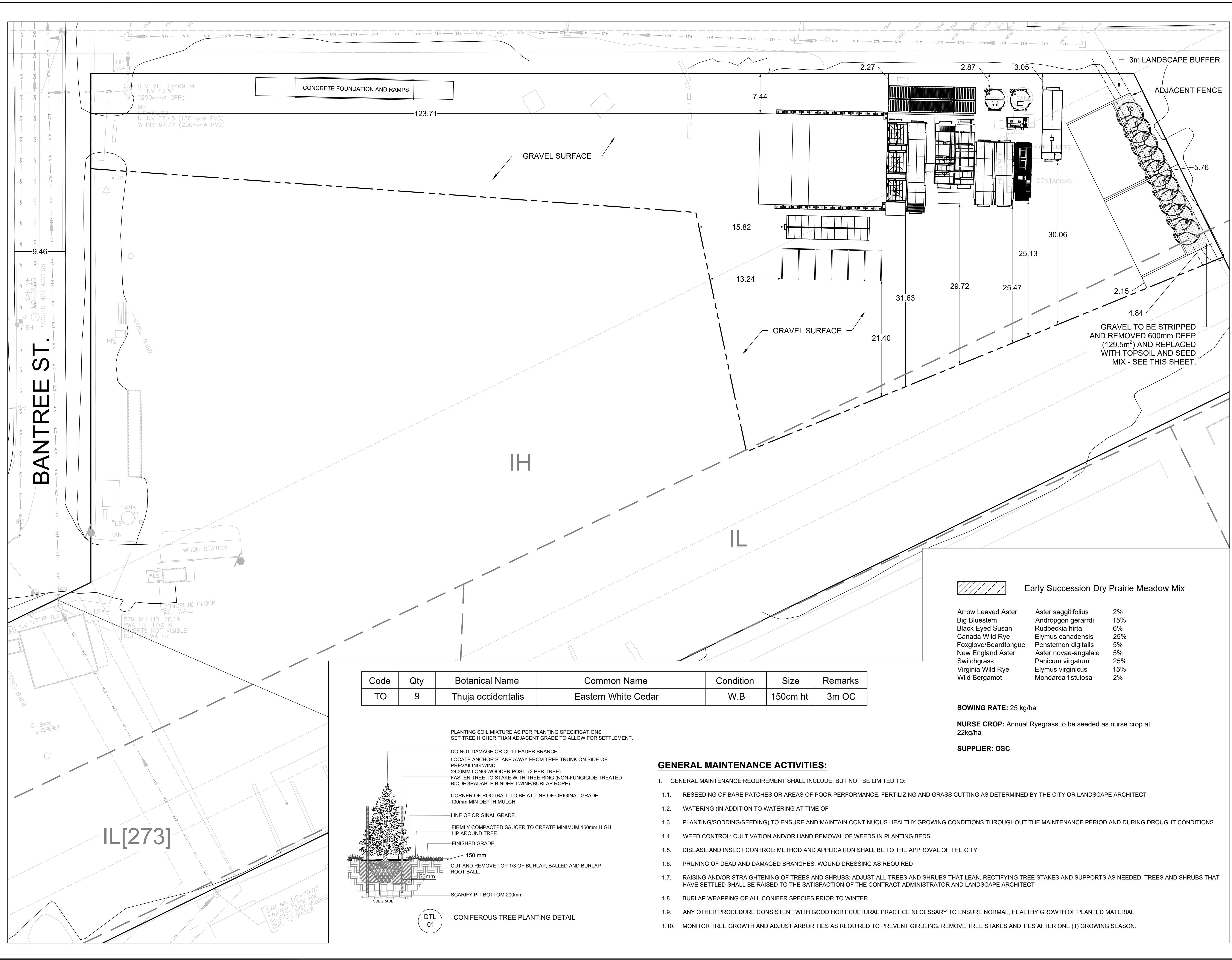
Director

appointed for the purposes of Part II.1 of the  
*Environmental Protection Act*

AQ/

c: District Manager, MECP Ottawa  
Drew Chevalier, LEA Consulting Ltd.





construction NORTH

true NORTH

0 5 10 20 25

THE POSITION OF THE POLE LINES, CONDUITS, WATERMANS, SEWERS, AND OTHER UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED.

BEFORE STARTING WORK THE CONTRACTOR SHALL CONFIRM THE POSITION AND EXACT LOCATION OF ALL SUCH UTILITIES, AND SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO THEM MADE DURING THE COURSE OF THE CONTRACT WORK.

KEY PLAN

NTS

DISCLAIMER

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**Aquafor Beech Limited**

36-203-2000 SKYMARK AVE.  
MISSISSAUGA, ONTARIO, L4W 1R2  
PHONE: (905) 876-0909  
55 REGAL ROAD, UNIT 3 GUELPH, ONTARIO, N1K 1S6  
PHONE: (519) 224-2750

DESIGNED BY:

APPROVED BY:

ISSUED FOR REVIEW	MD	11/27/2024
REVISION	BY	MM/DD/YY

GENERAL NOTE:  
ADJACENT LAND IS AN ACTIVE AGGREGATE SUPPLIER, THEREFORE GRADES ARE CONSTANTLY CHANGING

LEGEND:

- PARCEL BOUNDARY
- - - LEASED AREA BOUNDARY
- - - ZONING BOUNDARY

CLIENT:  
**HARBOUR ENVIRONMENTAL GROUP**

**1850 BANTREE ST**

**SITE AND LANDSCAPE PLAN**

DRAWN BY: BR    DESIGNED BY:    DATE: 11.27.2024

CHECKED BY: MD    SCALE: **1:300**    SHEET No: **1**

CHECKED BY:    DATE:    DWG No:    **L-1**

PROJECT No: 67582

**Early Succession Dry Prairie Meadow Mix**

Arrow Leaved Aster	Aster sagittifolius	2%
Big Bluestem	Andropogon gerardi	15%
Black Eyed Susan	Rudbeckia hirta	6%
Canada Wild Rye	Elymus canadensis	25%
Foxglove/Beardtongue	Penstemon digitalis	5%
New England Aster	Aster novae-angliae	5%
Switchgrass	Panicum virgatum	25%
Virginia Wild Rye	Elymus virginicus	15%
Wild Bergamot	Mondarda fistulosa	2%

**SOWING RATE:** 25 kg/ha

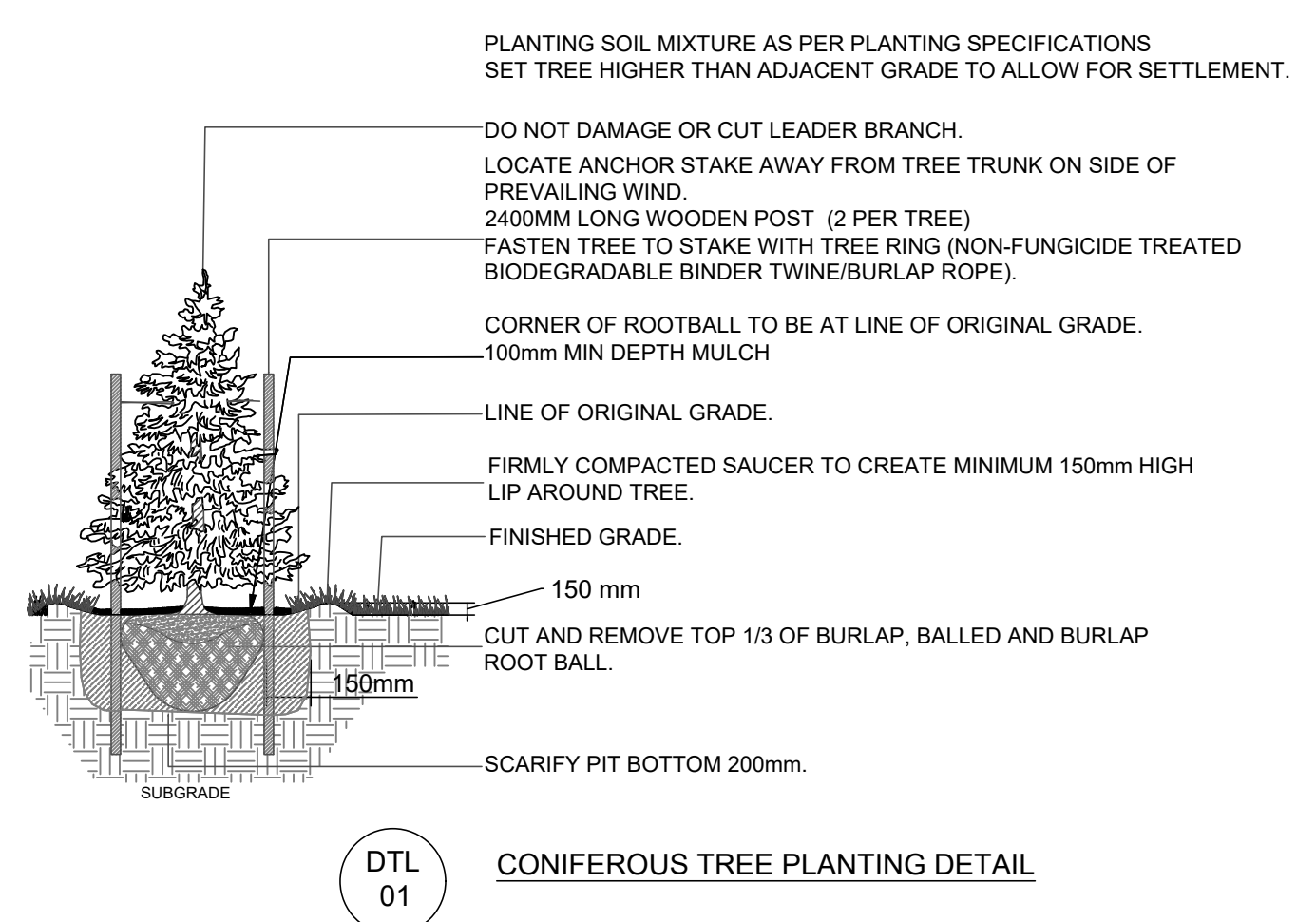
**NURSE CROP:** Annual Ryegrass to be seeded as nurse crop at 22kg/ha

**SUPPLIER:** OSC

**GENERAL MAINTENANCE ACTIVITIES:**

- GENERAL MAINTENANCE REQUIREMENT SHALL INCLUDE, BUT NOT BE LIMITED TO:
  - RESEEDING OF BARE PATCHES OR AREAS OF POOR PERFORMANCE, FERTILIZING AND GRASS CUTTING AS DETERMINED BY THE CITY OR LANDSCAPE ARCHITECT
  - WATERING (IN ADDITION TO WATERING AT TIME OF
  - PLANTING/SODDING/SEEDING) TO ENSURE AND MAINTAIN CONTINUOUS HEALTHY GROWING CONDITIONS THROUGHOUT THE MAINTENANCE PERIOD AND DURING DROUGHT CONDITIONS
  - WEED CONTROL: CULTIVATION AND/OR HAND REMOVAL OF WEEDS IN PLANTING BEDS
  - DISEASE AND INSECT CONTROL: METHOD AND APPLICATION SHALL BE TO THE APPROVAL OF THE CITY
  - PRUNING OF DEAD AND DAMAGED BRANCHES: WOUND DRESSING AS REQUIRED
  - RAISING AND/OR STRAIGHTENING OF TREES AND SHRUBS: ADJUST ALL TREES AND SHRUBS THAT LEAN, RECTIFYING TREE STAKES AND SUPPORTS AS NEEDED. TREES AND SHRUBS THAT HAVE SETTLED SHALL BE RAISED TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR AND LANDSCAPE ARCHITECT
  - BURLAP WRAPPING OF ALL CONIFER SPECIES PRIOR TO WINTER
  - ANY OTHER PROCEDURE CONSISTENT WITH GOOD HORTICULTURAL PRACTICE NECESSARY TO ENSURE NORMAL, HEALTHY GROWTH OF PLANTED MATERIAL
  - MONITOR TREE GROWTH AND ADJUST ARBOR TIES AS REQUIRED TO PREVENT GIRDLING. REMOVE TREE STAKES AND TIES AFTER ONE (1) GROWING SEASON.

Code	Qty	Botanical Name	Common Name	Condition	Size	Remarks
TO	9	Thuja occidentalis	Eastern White Cedar	W.B	150cm ht	3m OC



# Appendix B

## Labadie, Sam

---

**From:** Cassidy, Tyler <tyler.cassidy@ottawa.ca>  
**Sent:** November 28, 2024 9:52 AM  
**To:** Labadie, Sam; Sean Yaehne  
**Cc:** Peterman, Tess; Xu, Lily (Planning); Joseph Sullivan  
**Subject:** RE: 1850 Bantree - Boundary Condition Request  
**Attachments:** 1850 Bantree Road November 2024.pdf

**Arcadis Warning:** Exercise caution with email messages from external sources such as this message. Always verify the sender and avoid clicking on links or scanning QR codes unless certain of their authenticity.

Hi Sam,

Better yet, please find the boundary conditions below:

The following are boundary conditions, HGL, for hydraulic analysis at 1850 Bantree Road (zone 1E) assumed to be connected to the 305 mm watermain on Bantree road (see attached PDF for location).

Min HGL: 109.9 m  
Max HGL: 117.9 m

These are for current conditions and are based on computer model simulation.

*Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.*

Thank you,

**I will be away on leave from December 16th, 2024, returning January 23rd, 2025.**

**Tyler Cassidy, P.Eng**

Infrastructure Project Manager,  
Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch  
City of Ottawa | Ville d'Ottawa  
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1  
613.580.2424 ext./poste 12977, [Tyler.Cassidy@ottawa.ca](mailto:Tyler.Cassidy@ottawa.ca)

---

**From:** Labadie, Sam <samantha.labadie@arcadis.com>  
**Sent:** November 27, 2024 10:08 PM  
**To:** Cassidy, Tyler <tyler.cassidy@ottawa.ca>; Sean Yaehne <sean@harbournvgroup.ca>  
**Cc:** Peterman, Tess <tess.peterman@ottawa.ca>; Xu, Lily (Planning) <Lily.Xu@ottawa.ca>; Joseph Sullivan <joseph@harbournvgroup.ca>  
**Subject:** RE: 1850 Bantree - Boundary Condition Request

**CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.**

**ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.**

Hi Tyler,

Would it be possible for us to submit the report without boundary conditions and follow up with a memo once boundary conditions are available? We would make mention in the report that the memo will follow.

Thanks,

**Sam Labadie** P.Eng  
Civil Engineer  
Arcadis Professional Services (Canada) Inc.  
Suite 500, 333 Preston Street | Ottawa | ON | K1S 5N4 | Canada  
C: +1 613 899 5717  
[www.arcadis.com](http://www.arcadis.com)



---

**From:** Cassidy, Tyler <tyler.cassidy@ottawa.ca>  
**Sent:** November 27, 2024 3:20 PM  
**To:** Sean Yaehne <sean@harbourengroup.ca>  
**Cc:** Labadie, Sam <samantha.labadie@arcadis.com>; Peterman, Tess <tess.peterman@ottawa.ca>; Xu, Lily (Planning) <Lily.Xu@ottawa.ca>; Joseph Sullivan <joseph@harbourengroup.ca>  
**Subject:** RE: 1850 Bantree - Boundary Condition Request

**Arcadis Warning:** Exercise caution with email messages from external sources such as this message. Always verify the sender and avoid clicking on links or scanning QR codes unless certain of their authenticity.

Hi Sean,

I've reached out to our water resources group to see if we can expedite the boundary conditions. I'll touch base tomorrow and see if we can come up with a solution to keep the application in motion in the event the boundary conditions aren't ready yet.

Thank you,

**I will be away on leave from December 16th, 2024, returning January 23rd, 2025.**

**Tyler Cassidy, P.Eng**  
Infrastructure Project Manager,  
Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch  
City of Ottawa | Ville d'Ottawa  
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1  
613.580.2424 ext./poste 12977, [Tyler.Cassidy@ottawa.ca](mailto:Tyler.Cassidy@ottawa.ca)

---

**From:** Sean Yaehne <[sean@harbourengroup.ca](mailto:sean@harbourengroup.ca)>  
**Sent:** November 27, 2024 11:54 AM  
**To:** Cassidy, Tyler <[tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca)>  
**Cc:** 'Labadie, Sam' <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>; Peterman, Tess <[tess.peterman@ottawa.ca](mailto:tess.peterman@ottawa.ca)>; Xu, Lily (Planning) <[Lily.Xu@ottawa.ca](mailto:Lily.Xu@ottawa.ca)>; Joseph Sullivan <[joseph@harbourengroup.ca](mailto:joseph@harbourengroup.ca)>  
**Subject:** RE: 1850 Bantree - Boundary Condition Request

**CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.**

**ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.**

Hi Tyler,

I hope you are well, and I am sorry to bother you here.

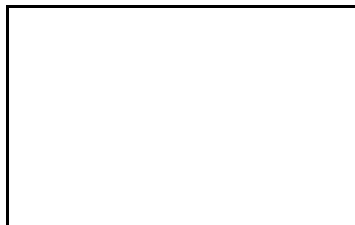
We are really hoping to have this application package back to your team for review this week, but we are waiting on the boundary conditions.

Do you have a line of site on when they will be returned to us?

If they already have been sent to Sam, please disregard and my apologies to bother.

Thank you for your understanding.

Cheers,



**Sean Yaehne** MBA PMP BSc. Geology  
VP, Business Strategy Development

Direct 403.888.8321

Email [sean@harbourengroup.ca](mailto:sean@harbourengroup.ca)

Website [www.harbourengroup.ca](http://www.harbourengroup.ca)

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---

**From:** Labadie, Sam <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>  
**Sent:** November 26, 2024 1:29 PM  
**To:** Sean Yaehne <[sean@harbourengroup.ca](mailto:sean@harbourengroup.ca)>  
**Subject:** FW: 1850 Bantree - Boundary Condition Request

FYI

**Sam Labadie** P.Eng  
Civil Engineer  
Arcadis Professional Services (Canada) Inc.

Suite 500, 333 Preston Street | Ottawa | ON | K1S 5N4 | Canada

C: +1 613 899 5717

[www.arcadis.com](http://www.arcadis.com)

[Redacted]

[Redacted]

---

**From:** Cassidy, Tyler <[tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca)>

**Sent:** November 26, 2024 11:38 AM

**To:** Labadie, Sam <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>

**Subject:** RE: 1850 Bantree - Boundary Condition Request

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Hi Sam,

Looks like they aren't ready yet. I've queried our Water Resources group on the status of the boundary conditions. I'll let you know what to expect once I hear back from them.

Cheers,

**I will be away on leave from December 16th, 2024, returning January 23rd, 2025.**

**Tyler Cassidy, P.Eng**

Infrastructure Project Manager,

Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 12977, [Tyler.Cassidy@ottawa.ca](mailto:Tyler.Cassidy@ottawa.ca)

---

**From:** Labadie, Sam <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>

**Sent:** November 26, 2024 11:23 AM

**To:** Cassidy, Tyler <[tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca)>

**Subject:** RE: 1850 Bantree - Boundary Condition Request

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Hi Tyler,

I don't think we received these yet, unless I missed an email? Can you let us know the status?

Thanks,

**Sam Labadie** P.Eng

Civil Engineer

Arcadis Professional Services (Canada) Inc.

Suite 500, 333 Preston Street | Ottawa | ON | K1S 5N4 | Canada

C: +1 613 899 5717

[www.arcadis.com](http://www.arcadis.com)



---

**From:** Cassidy, Tyler <[tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca)>  
**Sent:** November 13, 2024 11:51 AM  
**To:** Labadie, Sam <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>  
**Subject:** RE: 1850 Bantree - Boundary Condition Request

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Hi Sam,

I've submitted the request to boundary conditions, results should be available before the end of next week.

Please let me know if you have any other questions.

Thank you,

**Tyler Cassidy, P.Eng**

Infrastructure Project Manager,

Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 12977, [Tyler.Cassidy@ottawa.ca](mailto:Tyler.Cassidy@ottawa.ca)

---

**From:** Labadie, Sam <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>  
**Sent:** November 08, 2024 12:01 PM  
**To:** Cassidy, Tyler <[tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca)>  
**Subject:** 1850 Bantree - Boundary Condition Request

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**ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.**

Hi Tyler,

We are requesting boundary conditions for 1850 Bantree. One connection to Bantree Street is proposed as shown in the attached location sketch.

Note that no buildings are proposed for this site. Water demands have been calculated for a Heavy Industrial gross area. One new private hydrant is being considered to be installed onsite for safety, however there are no proposed buildings to calculate a fire demand using the FUS. We will go into further details in the Site Servicing Report.

A copy of the water demands are attached and summarized as follows;

Avg Day = 0.72 l/s  
Max day = 0.46 l/s  
Peak Hour = 1.24 l/s  
Fireflow = N/A

Thank you,

**Sam Labadie** P.Eng  
Civil Engineer  
Arcadis Professional Services (Canada) Inc.  
Suite 500, 333 Preston Street | Ottawa | ON | K1S 5N4 | Canada  
C: +1 613 899 5717  
[www.arcadis.com](http://www.arcadis.com)



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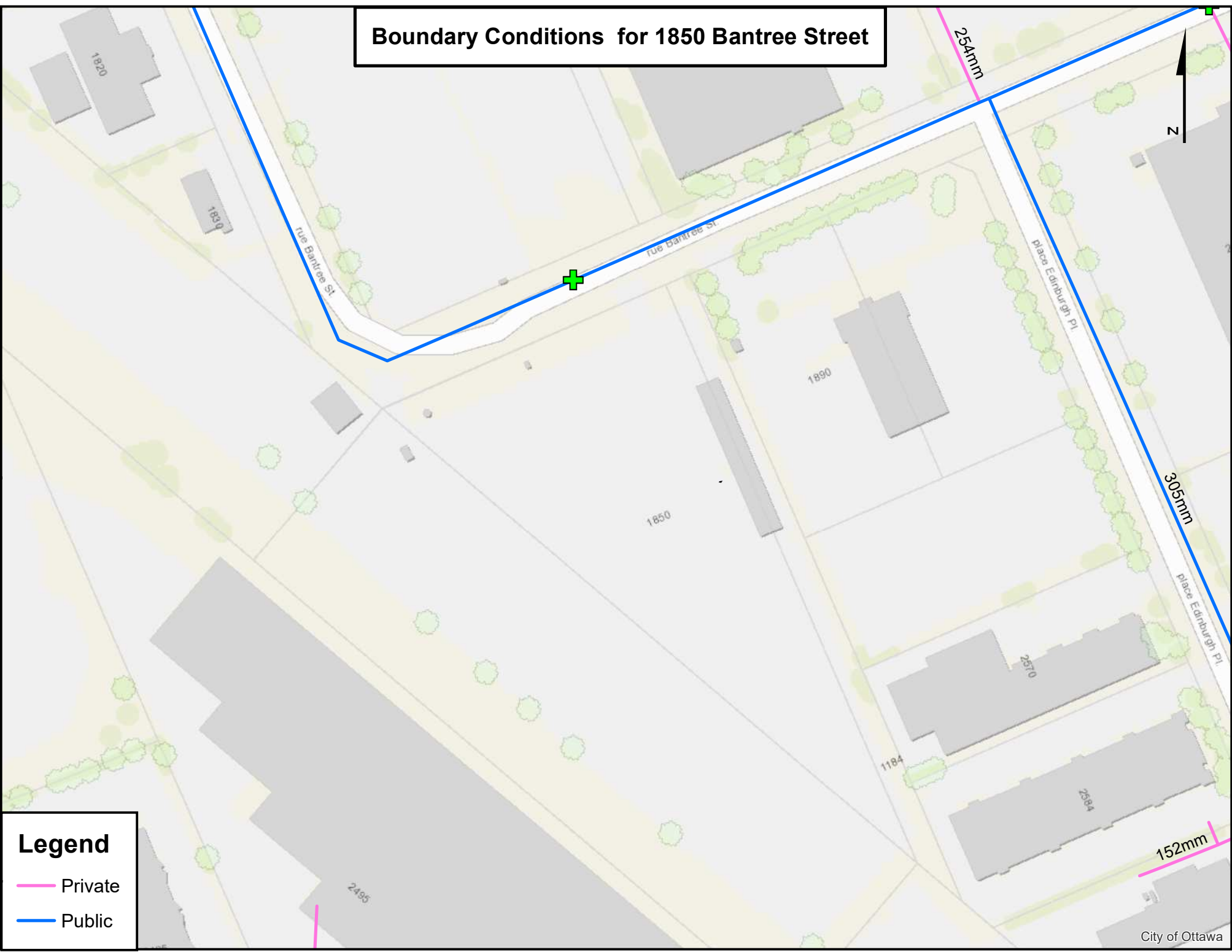
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# Boundary Conditions for 1850 Bantree Street



**Legend**

- Private
- Public



**ARCADIS IBI GROUP**  
 500-333 Preston Street  
 Ottawa, Ontario K1S 5N4 Canada  
 arcadis.com

IBI GROUP

**WATERMAIN DEMAND CALCULATION SHEET**

1850 Bnatree | Harbour Environmental  
 148294 -6.0 | Rev #1 | 2024-11-08  
 Prepared By: SL | Checked By: DY

NODE	RESIDENTIAL				NON-RESIDENTIAL (ICI)			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	Towns	Medium Density		POPULATION	INDUST. (ha)	COMM. (ha)	INSTIT. (ha)	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	RESIDENTIAL	ICI	TOTAL	
<u>Site</u>					0.72				0.46	0.46		0.69	0.69		1.24	1.24	N/A
<u>TOTAL</u>					0.72					0.46			0.69			1.24	

ASSUMPTIONS							
POPULATION DENSITY		WATER DEMAND RATES		PEAKING FACTORS FOR POP. OF 501 TO 3000		FIRE DEMANDS	
Townhouse	2.7 persons/unit	Residential	280 l/cap/day	Maximum Daily	Residential	2.5 x avg. day	No Building FUS Not Applicable
Medium Density (Stacks)	1.8 persons/unit	Industrial - Heavy	55,000 L/gross Ha/day	Maximum Hourly	Industrial	1.5 x avg. day	
					Residential	2.2 x max. day	
					Industrial	1.8 x max. day	



October 31st, 2024

Harbour Environmental Group (Calgary)Ltd  
3432-3500 25 St NE  
Calgary , AB  
T1Y 6C1

To Sean Yaehne,

**Re : 1850 Bantree st, Ottawa ON, Fire Safety Plan review and approval- 2 separate mobile trailer/offices- environmental recycling plant – Harbour Environmental Group Ottawa**

Please be advised that the attached Fire Safety Plan, for the above-mentioned address, has been reviewed and approved by the Fire Prevention Office of the Ottawa Fire Service on August 21<sup>st</sup>, 2024. A copy of the approved Fire Safety Plan, along with a Fire Fighters Copy, is required to be available for Fire Services personnel when they respond to your building (O. Reg 213/07 Div. B, 2.8.2.1. (3)). Please ensure that a copy of this letter is kept with the Fire Safety Plan to provide record of its approval.

The approved Fire Safety Plan must be reviewed (by you) as often as necessary, but at least every 12 months, so that it takes into account changes in the use and other characteristics of the building or premises. (O.Reg 213/07 Div B 2.8.2.1. (4)).

If you are required to update your plan because of contact information, persons requiring assistance, or any other administrative updates, please email the approved plan, with changes made, to [firesafetyplans@ottawa.ca](mailto:firesafetyplans@ottawa.ca) indicating that you are updating your plan. You must include this letter as proof that the Fire Safety Plan has been approved by Ottawa Fire Services.

If there are structural changes, evacuation procedural changes, or changes to your fire and life safety systems, please re-submit your Fire Safety Plans for approval to [firesafetyplans@ottawa.ca](mailto:firesafetyplans@ottawa.ca) . Payment process and instructions can be found at [www.ottawa.ca](http://www.ottawa.ca) .

Yours truly,

*Tina Mitchell*

Tina Mitchell  
A/Assistant Division Chief, Prevention  
Ottawa Fire Services

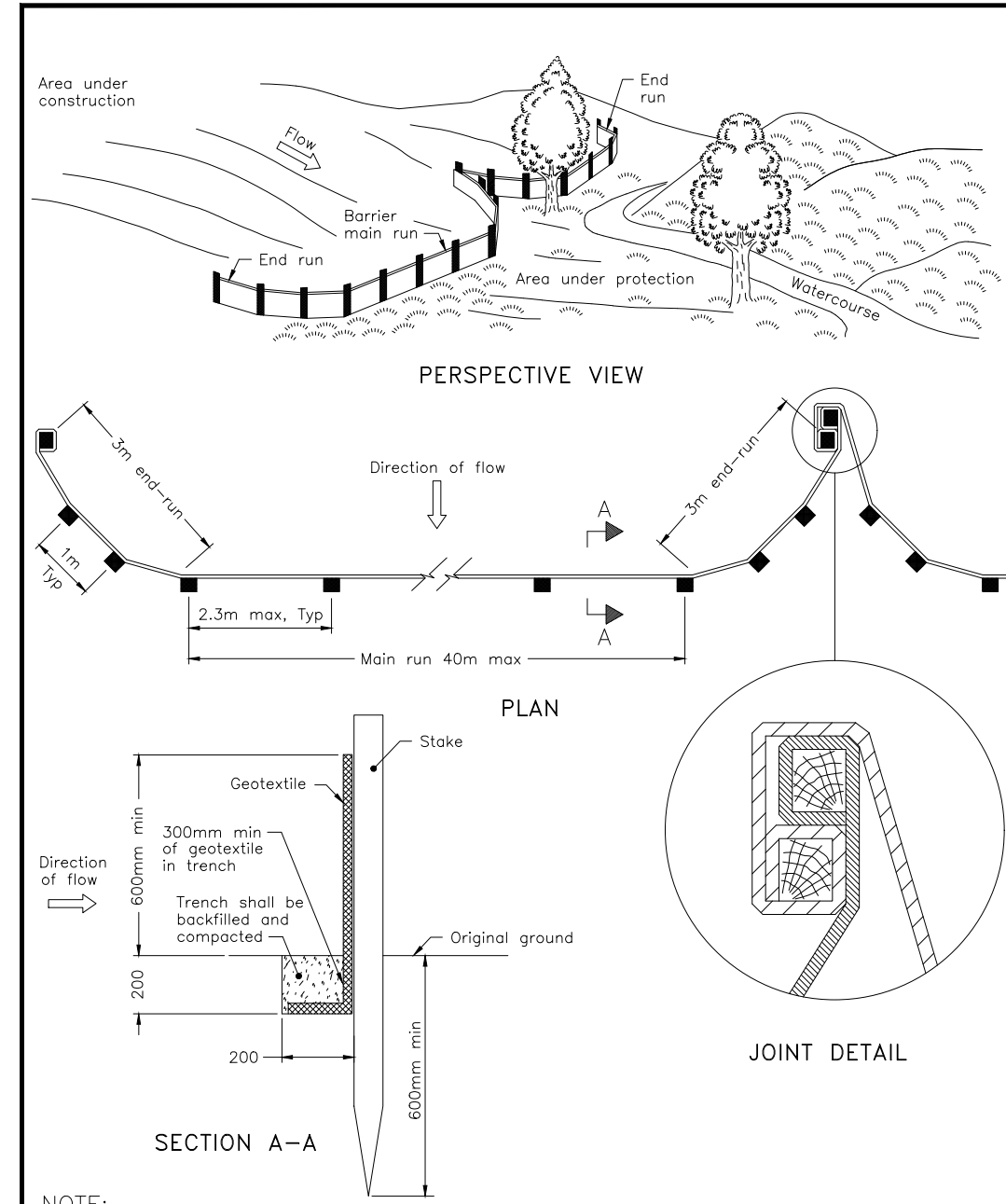
TM/dss



**OTTAWA FIRE SERVICES**  
**SERVICE DES INCENDIES D'OTTAWA**  
*Protecting Our Nation's Capital With Pride*  
*Protéger notre capitale nationale avec fierté*

City of Ottawa  
[www.ottawa.ca](http://www.ottawa.ca)  
Emergency and Protective Services  
Fire Prevention Division  
1445 Carling Avenue  
Ottawa, ON K1Z 7L9  
Tel.: 613-580-2860

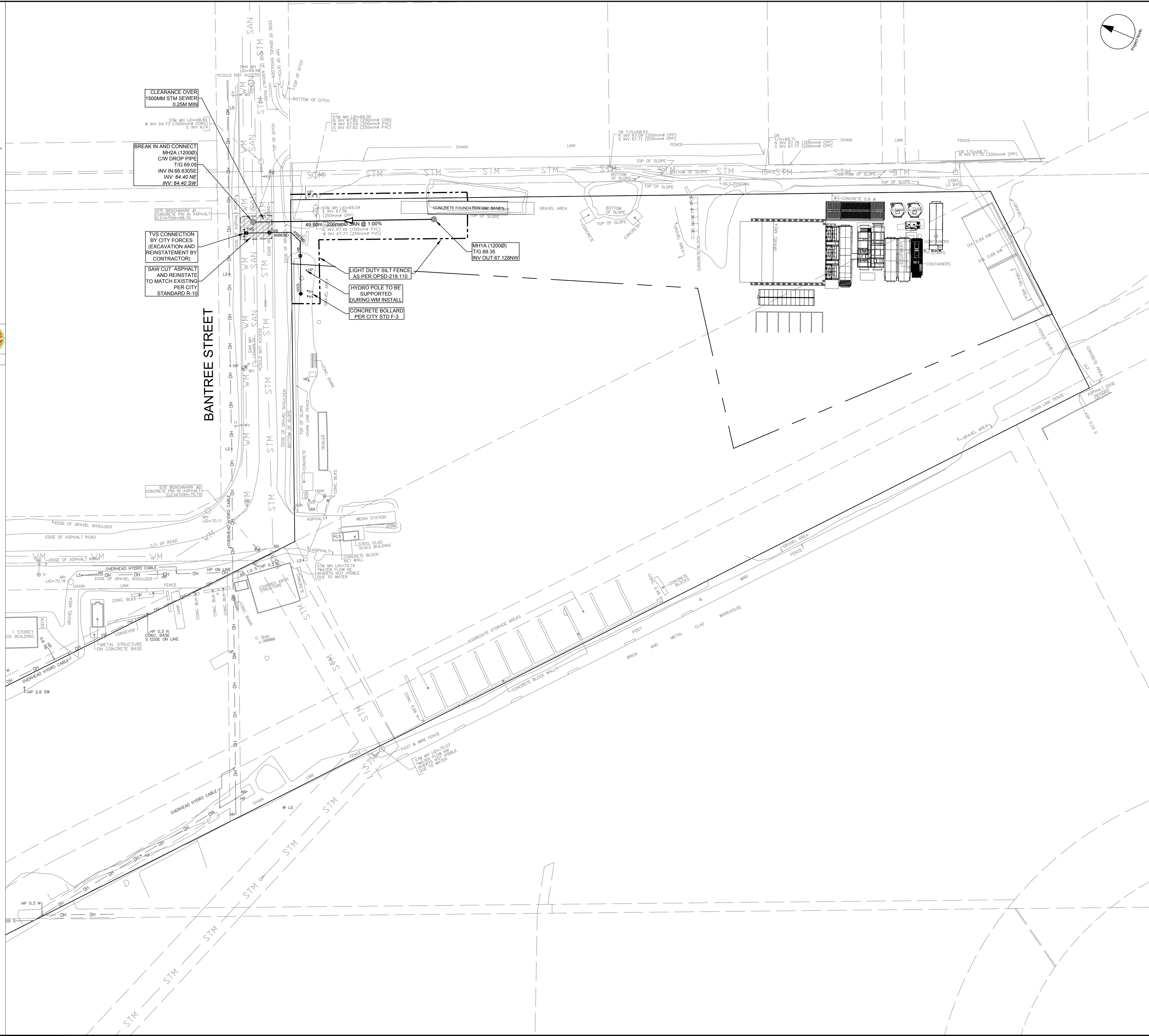
Ville d'Ottawa  
[www.ottawa.ca](http://www.ottawa.ca)  
Services de protection et d'urgence  
Division de la prévention des incendies  
1445 Avenue Carling  
Ottawa, ON K1Z 7L9  
Tel.: 613-580-2860



NOTE:  
A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING		Nov 2021	Rev 3
LIGHT-DUTY SILT FENCE BARRIER		OPSD 219.110	

- NOTES:**
- ALL MATERIALS AND CONSTRUCTION IS TO BE IN ACCORDANCE WITH THE CURRENT CITY OF OTTAWA STANDARD DRAWINGS & SPECIFICATIONS OR EQUIVALENT CITY DRAWINGS AND SPECIFICATIONS DO NOT APPLY.
  - THE POSITION OF UNDERGROUND AND ABOVE GROUND SERVICE, UTILITIES AND STRUCTURES ARE NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS AND THEREFORE THE ACCURACY OF THE POSITION OF SUCH SERVICES, UTILITIES AND STRUCTURES IS NOT GUARANTEED. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, SIZE, MATERIAL AND ELEVATION OF ALL EXISTING SERVICES AND UTILITIES PRIOR TO CONSTRUCTION.
  - THE CONTRACTOR SHALL REPORT ALL CONFLICTS, DISCREPANCIES TO THE ENGINEER.
  - THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND ASSUME RESPONSIBILITY FOR ALL UTILITIES WHETHER OR NOT SHOWN ON THESE DRAWINGS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT ALL LANDS BEYOND THE SITE LIMITS. ANY AREAS BEYOND THE SITE LIMITS WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED AND RESTORED TO ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE ADJOINING LAND OWNER, THE OWNER, THE OWNER'S REPRESENTATIVES AND/OR THE AUTHORITY HAVING JURISDICTION AT THE EXPENSE OF THE CONTRACTOR.
  - WHERE NECESSARY, THE CONTRACTOR SHALL IMPLEMENT A TRAFFIC MANAGEMENT PLAN TO THE SATISFACTION OF THE CITY OF OTTAWA. ALL CONSTRUCTION BARRIERS MUST CONFORM TO THE LATEST VERSION OF THE I.T.O. MANUAL OF HIGHWAY TRAFFIC CONTROL DEVICES. ALL TEMPORARY TRAFFIC CONTROL MEASURES MUST BE REMOVED UPON THE COMPLETION OF THE WORKS.
  - SHOULD ANY BURIED ARCHAEOLOGICAL REMAINS BE FOUND ON THE PROPERTY DURING CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL NOTIFY THE OWNER TO CONTACT THE HERITAGE OPERATIONS UNIT OF THE ONTARIO MINISTRY OF CULTURE AND SPORTS IMMEDIATELY. ANY WORK WITHIN THE AREA SHALL BE CEASED UNTIL FURTHER NOTICE.
  - THESE DRAWINGS ARE NOT TO BE SCALED OR USED FOR LAYOUT PURPOSES.
  - THE CONTRACTOR SHALL IMPLEMENT THE EROSION AND SEDIMENT CONTROL PLAN PRIOR TO THE COMMENCEMENT OF ANY SITE CONSTRUCTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED UNTIL VEGETATION IS ESTABLISHED OR UNTIL THE START OF SUCCESSIVE PHASES.
  - CONTRACTORS SHALL BE RESPONSIBLE FOR KEEPING CLEAN ALL ROADS WHICH BECAME COVERED IN DIRT, DEBRIS AND/OR MUD AS A RESULT OF ITS CONSTRUCTION OPERATIONS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL BEDDING OR ADDITIONAL STRENGTH PIPE SHOULD THE MAXIMUM CRISP TRENCH WIDTH BE EXCEEDED.
  - ALL PIPE, CULVERTS, STRUCTURES REFER TO NOMINAL INSIDE DIMENSIONS.
  - SHOULD CLAY SEALS BE REQUIRED, THEY SHALL BE INSTALLED AS PER THE RECOMMENDATIONS WITHIN THE GEOTECHNICAL REPORT.
  - UNLESS SPECIFICALLY NOTED OTHERWISE, PIPE MATERIALS SHALL BE AS FOLLOWS:  
- WATERMANS TO BE PVC DRIS  
- SANITARY SEWER TO BE PVC 305
  - ALL CONNECTIONS TO EXISTING WATERMANS ARE TO BE COMPLETED BY CITY FORCES. CONTRACTOR IS TO EXCAVATE, BACKFILL, COMPACT AND REINSTATE.
  - ANY WATERMAIN WITH LESS THAN 2.4m AND ANY SEWER WITH LESS THAN 2m DEPTH OF COVER REQUIRES THERMAL INSULATION AS PER CITY OF OTTAWA STANDARD W22 OR AS APPROVED BY THE ENGINEER.
  - ALL FIRE HYDRANTS AS PER CITY STANDARD W19, OR 150mm LEAD UNLESS OTHERWISE SPECIFIED.
  - THE SLOPES OF ALL STRUCTURES, PIPE, ROADS, SIDEWALKS, DRIVEWAYS, AND BUILDINGS SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
  - TOP COURSE ASPHALT SHALL NOT BE PLACED UNTIL THE FINAL CITY INSPECTION AND NECESSARY REPAIRS HAVE BEEN COMPLETED TO THE SATISFACTION OF THE ENGINEER AND THE CITY OF OTTAWA.



CLIENT  
**HARBOUR ENVIRONMENTAL GROUP**

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Formerly BI Group Professional Services (Canada) Inc.

ISSUES		
No.	DESCRIPTION	DATE
1	SUBMISSION TO CITY	2024-11-25

SCALE  
1:500

SEAL

PROJECT  
**1850 BANTREE STREET**

PROJECT NO:  
**148294**

DRAWN BY: <b>D.D.</b>	CHECKED BY: <b>T.R.B.</b>
PROJECT MGR: <b>T.R.B.</b>	APPROVED BY: <b>S.E.L.</b>

SHEET TITLE  
**SERVICES AND SEDIMENTATION PLAN**

SHEET NUMBER <b>001</b>	ISSUE <b>1</b>
----------------------------	-------------------

# Appendix C

LOCATION				RESIDENTIAL										ICI AREAS								INFILTRATION ALLOWANCE			FIXED FLOW (L/s)		TOTAL FLOW (L/s)	PROPOSED SEWER DESIGN																		
STREET	AREA ID	FROM MH	TO MH	AREA w/ Units (Ha)	UNIT TYPES				AREA w/o Units (Ha)	POPULATION		RES PEAK FACTOR	PEAK FLOW (L/s)	AREA (Ha)				ICI PEAK FACTOR	PEAK FLOW (L/s)	AREA (Ha)			IND	CUM	TOTAL FLOW (L/s)	CAPACITY (L/s)	LENGTH (m)	DIA (mm)	SLOPE (%)	VELOCITY (full) (m/s)	AVAILABLE CAPACITY															
					SF	TH/SD	APT	OTHER		IND	CUM			IND	CUM	IND	CUM			IND	CUM	IND									CUM	(L/s)	IND	CUM	(L/s)	(L/s)	(m)	(mm)	(%)	(m/s)	L/s	(%)				
<b>1850 Bantree Street</b>																																														
SITE PLAN		MH1A	MH2A						0.0	0.0	3.80	0.00					0.00	0.00	0.72	0.72	1.50	0.69	0.72	0.72	0.24	<b>0.69</b>	0.69	1.62	34.22	49.80	200	1.00	1.055	32.60	95.28%											
				<b>Design Parameters:</b> Residential: SF 3.4 p/p/u, TH/SD 2.7 p/p/u, APT 1.8 p/p/u, Other 60 p/p/Ha ICI Areas: INST 28,000 L/Ha/day, COM 28,000 L/Ha/day, IND 55,000 L/Ha/day, MOE Chart 17000 L/Ha/day <b>Notes:</b> 1. Mannings coefficient (n) = 0.013 2. Demand (per capita): 280 L/day 3. Infiltration allowance: 0.33 L/s/Ha 4. Residential Peaking Factor: Harmon Formula = $1 + (14 / (4 + (P / 1000)^{0.5})) \cdot 0.8$ where K = 0.8 Correction Factor 5. Commercial and Institutional Peak Factors based on total area, 1.5 if greater than 20%, otherwise 1.0										<b>Designed:</b>  <b>Checked:</b>  <b>Dwg. Reference:</b> 147743-400								<b>Revision</b> <table border="1"> <tr> <th>No.</th> <th>Revision</th> <th>Date</th> </tr> <tr> <td>1.</td> <td>Preliminary Capacity Check</td> <td>2024-11-08</td> </tr> <tr> <td>2.</td> <td>Submission to City</td> <td>2024-11-25</td> </tr> </table>								No.	Revision	Date	1.	Preliminary Capacity Check	2024-11-08	2.	Submission to City	2024-11-25	<b>File Reference:</b> 147743-6.04.04 <b>Date:</b> 2024-11-25 <b>Sheet No:</b> 1 of 1							
No.	Revision	Date																																												
1.	Preliminary Capacity Check	2024-11-08																																												
2.	Submission to City	2024-11-25																																												

## Labadie, Sam

---

**From:** Cassidy, Tyler <tyler.cassidy@ottawa.ca>  
**Sent:** November 13, 2024 4:23 PM  
**To:** Labadie, Sam  
**Subject:** RE: 1850 Bantree - Sanitary Capacity

**Arcadis Warning:** Exercise caution with email messages from external sources such as this message. Always verify the sender and avoid clicking on links or scanning QR codes unless certain of their authenticity.

Hi Sam,

I can confirm we have no issues with Capacity or the 100-yr HGL in the sanitary sewer on Bantree Road.

Thank you,

**Tyler Cassidy, P.Eng**

Infrastructure Project Manager,

Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch

City of Ottawa | Ville d'Ottawa

110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1

613.580.2424 ext./poste 12977, [Tyler.Cassidy@ottawa.ca](mailto:Tyler.Cassidy@ottawa.ca)

---

**From:** Cassidy, Tyler  
**Sent:** November 13, 2024 3:18 PM  
**To:** Labadie, Sam <samantha.labadie@arcadis.com>  
**Subject:** RE: 1850 Bantree - Sanitary Capacity

Hi Sam,

I'm hoping to have a response before the week is up. I don't anticipate there being any issues with the proposed sanitary demands. One thing to keep in mind is if the 60m<sup>3</sup>/day fixed flow is being supplied from the City watermain, then a redundant connection will be required. I assume some of that fixed flow is coming from the trucks themselves, but I'll leave that thought with you.

Thank you,

**Tyler Cassidy, P.Eng**

Infrastructure Project Manager,

Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch

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613.580.2424 ext./poste 12977, [Tyler.Cassidy@ottawa.ca](mailto:Tyler.Cassidy@ottawa.ca)

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**From:** Labadie, Sam <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>  
**Sent:** November 08, 2024 11:34 AM  
**To:** Cassidy, Tyler <[tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca)>  
**Subject:** RE: 1850 Bantree - Sanitary Capacity



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Hi Tyler,

Please see attached preliminary sanitary sewer design sheet (final design sheet will be included in SPA application). Ultimately, we anticipate 1.62 L/s of sanitary wastewater flow.

This includes the standard rate for a Heavy Industrial area of 55,000 L/gross Ha/day in addition to 60m<sup>3</sup>/day for Harbour Environmental's specific work (considered as "fixed flow" on the attached sheet). The 60m<sup>3</sup>/day is a conservative estimate from discussions with Harbour.

Thanks,

**Sam Labadie** P.Eng  
Civil Engineer  
Arcadis Professional Services (Canada) Inc.  
Suite 500, 333 Preston Street | Ottawa | ON | K1S 5N4 | Canada  
C: +1 613 899 5717  
[www.arcadis.com](http://www.arcadis.com)



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**From:** Cassidy, Tyler <[tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca)>  
**Sent:** October 28, 2024 4:22 PM  
**To:** Labadie, Sam <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>  
**Subject:** RE: 1850 Bantree - Sanitary Capacity

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Hi Sam,

Unfortunately, we don't have an MSS or high-level study for this industrial area. If you provide me with your anticipated wastewater demands (L/s), I will confirm capacity and HGL in the sanitary system.

Regards,

**Tyler Cassidy, P.Eng**  
Infrastructure Project Manager,  
Planning, Development and Building Services department (PDBS)/ Direction générale des services de la planification, de l'aménagement et du bâtiment (DGSPAB) - South Branch  
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613.580.2424 ext./poste 12977, [Tyler.Cassidy@ottawa.ca](mailto:Tyler.Cassidy@ottawa.ca)

**From:** Labadie, Sam <[samantha.labadie@arcadis.com](mailto:samantha.labadie@arcadis.com)>  
**Sent:** October 28, 2024 11:31 AM  
**To:** Cassidy, Tyler <[tyler.cassidy@ottawa.ca](mailto:tyler.cassidy@ottawa.ca)>  
**Subject:** 1850 Bantree - Sanitary Capacity

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Hi Tyler,

Could you point me towards a report or MSS document that references the capacity of the 300mm concrete sanitary sewer in Bantree street in front of our site?

Thank you,

**Sam Labadie** P.Eng  
Civil Engineer  
Arcadis Professional Services (Canada) Inc.  
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C: +1 613 899 5717  
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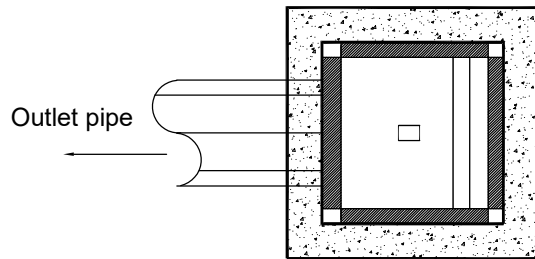
# Appendix D

## Notes

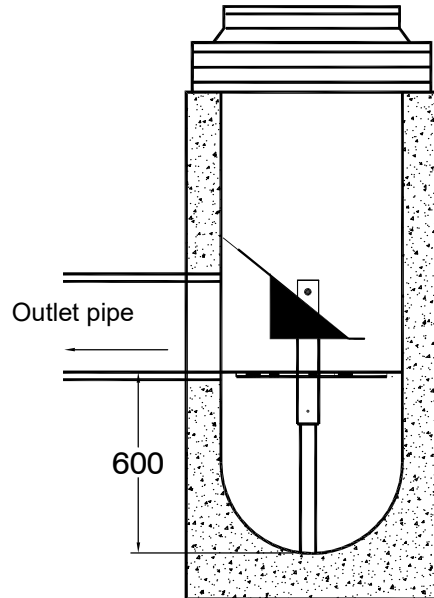
1 Recommended depth t/g - invert = 1.2m

Maximum depth t/g - invert = 2.4m

1. CB Shield to be installed in non frozen conditions.
2. The frame and cover should be well aligned with the catchbasin.
3. The sump must be clean before installation
4. The grate is at the same elevation as pipe invert.
5. Pipes must be cut flush with inside walls



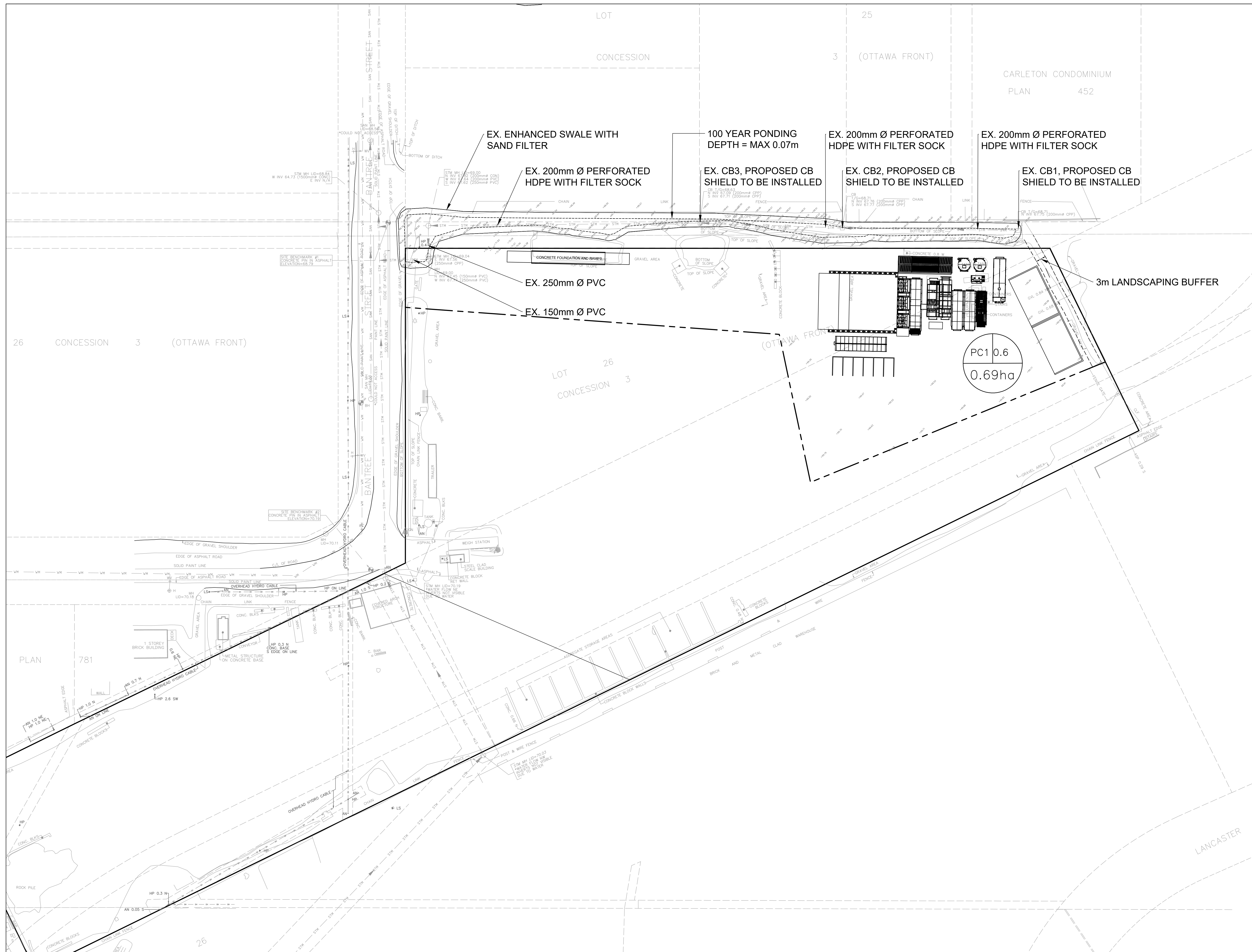
Top view



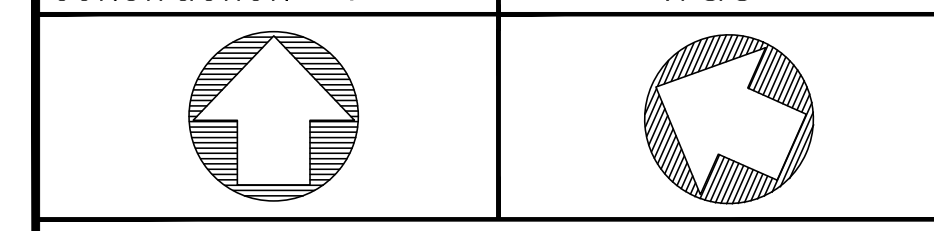
Profile view



**600 x 600 CB**  
**CB Shield (600mm Sump)**

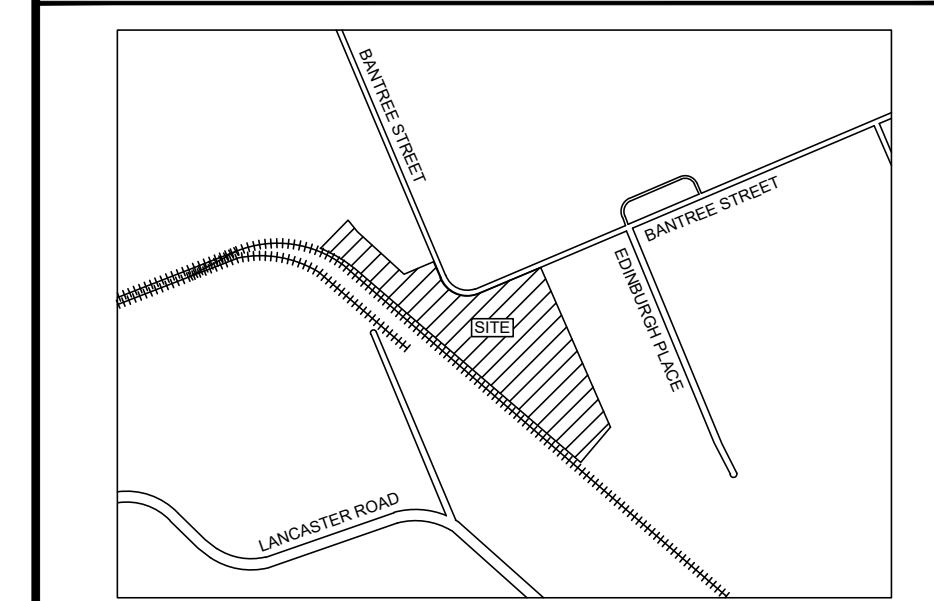


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DESIGNED BY: APPROVED BY:

ISSUED FOR REVIEW	MD	11/27/2024
REVISION	BY	MM/DD/YY

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ADJACENT LAND IS AN ACTIVE AGGREGATE SUPPLIER, THEREFORE GRADES ARE CONSTANTLY CHANGING

NO GRADE CHANGES ARE PROPOSED

LEGEND:  
 - - - - - PARCEL BOUNDARY  
 - - - - - LEASED AREA BOUNDARY

CLIENT:  
**HARBOUR ENVIRONMENTAL GROUP**

1850 BANTREE ST

**POST DEVELOPMENT DRAINAGE & GRADING PLAN**

DRAWN BY: BR	DESIGNED BY:	DATE: 11.27.2024
CHECKED BY: MD	SCALE: 1:500	SHEET No: 1
CHECKED BY:		DWG No:
PROJECT No: 67582		<b>SD-1</b>