



**SERVICING AND STORMWATER MANAGEMENT REPORT  
CITY OF OTTAWA PROPOSED PARKING FACILITY**

**170 Second Avenue, Ottawa, Ontario**

This document includes:

- Stormwater Management Report
- Watermain Analysis
- Assessment of Adequacy of Public Services
- Erosion and Sediment Control Brief (Plan Requirements Shown on Drawing C1)

**Our File 13-12493-00**

**September 13, 2013**

**Servicing and Stormwater Management Report  
Proposed City of Ottawa Parking Facility  
170 Second Avenue, Ottawa, Ontario.**

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## **1. GENERAL**

### **1.1 Executive Summary**

This report provides summarizes servicing criteria and stormwater calculations pertaining to the servicing of a proposed parking garage structure to be located at 170 Second Avenue. The site is presently used for a surface parking lot.

The subject property has an area of 0.1979 ha, and extends from Third Avenue on the south, to Second Avenue on the north. Commercial properties fronting on to Bank Street are located along the east property boundary, and residential properties are located to the west. There are presently entrances to the site from both Second Avenue and Third Avenue.

Two catch basins are located on the site, delivering storm water to the sewers on Second Avenue and Third Avenue. Locates done on the site have also identified a water service extending from Second Avenue to near the mid-point of the property, near the west boundary. The water service is of small diameter, and terminates at a valve chamber. The service is not connected to any fixtures.

The format of this report follows that required by the Servicing Study Guidelines for Development Applications, November 2009, published by the City of Ottawa. Each section of the guidelines is covered by individual sections of this report. The Table of Contents can be used as a checklist to confirm that all required areas have been addressed.

The proposed grading and servicing designs are shown on GENIVAR Drawings C1 and C2. Drawing C1 also includes existing service removals, and sediment and erosion control requirements. This report was prepared utilizing servicing design criteria obtained from the City of Ottawa, and outlines the design for water, sanitary sewage, stormwater drainage, and stormwater management facilities.

### **1.2 Date and Revision Number**

This is the first issue of this report, dated September 13, 2013.

### **1.3 Location Map and Plan**

Drawings C1 and C2 provide a detailed plan of the site, including municipal address, site boundary, site layout and location plan.

### **1.4 Adherence to Zoning and Related Requirements**

An application has been made to amend the zoning of the site to permit the proposed use.

Water, sanitary and storm servicing will be in accordance with City of Ottawa design guidelines, with sanitary, water and storm connections all being made to existing City of Ottawa infrastructure on Second Avenue.

### **1.5 Pre-Consultation Meetings**

A pre-consultation meeting was held on April 30, 2013. Stormwater design criteria were specified. The requirements for site plan application were generally reviewed. Notes have been provided to the consultant from that meeting.

No pre-consultation meetings have been held with the Ontario Ministry of the Environment (MOE) or the Rideau Valley Conservation Authority (RVCA). Both agencies have been contacted, and have replied. The RVCA has indicated that stormwater quality control is not required as the downstream system combines sanitary and storm. The MOE has indicated the need for an Environmental Compliance Approval for stormwater if the downstream sewer network is combined. Both responses have previously been provided to the City's infrastructure group, and have also been appended to this report.

## **1.6 Higher Level Studies**

No higher level studies have been identified. Stormwater management quantity control criteria for the site were obtained from the City of Ottawa, and require that stormwater release from the site be limited to the equivalent flow generated by a 2 year return period rainfall event, with a time of concentration of 10 minutes, using a runoff coefficient of 0.4. This assumes that the discharge is to a combined sewer system. The existing sanitary and storm sewers on Second Avenue have been separated, but discharge to a combined system at a point downstream. The sewer system is therefore considered to be combined. Runoff exceeding the allowable release amount has to be temporarily stored on the site up to the 100 year level. Sanitary and water servicing comply with City of Ottawa guidelines:

- Ottawa Sewer Design Guidelines, October 2012.
- Ottawa Design Guidelines – Water Distribution, July 2010 and Technical Bulletin ISD 2010-02 Revisions to Water Design Guidelines.

## **1.7 Statement of Objectives and Servicing Criteria**

The objective of the site servicing is to meet the requirements for operation of the proposed parking facility while adhering to the specific design criteria provided for the site and also City of Ottawa servicing design guidelines.

## **1.8 Available Existing and Proposed Infrastructure**

Water, storm and sanitary services are available on both Second and Third Avenues. Power is delivered via overhead services, also along both streets. An overhead Bell line traverses the property near the centre line between the two streets. Gas and communication services are also available.

Site storm, sanitary and water connections are proposed to connect to the locations of existing infrastructure on Second Avenue. This will allow the sewer connections to be made to separate storm and sanitary sewers.

The existing water service on the site has been reported by the City of Ottawa to be abandoned, and will therefore not be part of the new design. Existing storm sewer services that are not being used for the new building will be capped at the property lines.

Access driveways to the new facility will be provided from both Second and Third Avenues, which is consistent with the existing parking lot on the site.

Existing fire hydrants are located fronting on the site on Third Avenue, and slightly east of the site on Second Avenue.

### **1.9 Environmentally Significant Areas, Watercourses and Municipal Drains**

The re-development is not occurring in an Environmentally Significant Area. There are no watercourses or Municipal Drains on the subject property, and the site drains to existing City storm sewers.

#### **1.10 Concept Level Master Grading Plan**

Proposed grading at the site boundaries will match into existing conditions. New sidewalks, driveways and landscaped areas within the rights of way of Second and Third Avenues will be sloped towards the streets. The top deck of the parking garage will be open, and therefore will drain to the storm sewer. Drainage from the lower decks will be minimal, and will drain to the sanitary sewer as per Ontario Building Code requirements.

There are no major system flow paths passing through the site originating from outside the property boundaries.

#### **1.11 Impacts on Private Services**

There are no existing private services (septic systems and wells) on adjacent properties, as the entire area is on municipal services. The servicing system for the site will not impact private services.

#### **1.12 Development Phasing**

The development will not be phased, but will proceed under a single project.

#### **1.13 Geotechnical Study**

A geotechnical report and Phase 1 ESA for the site have been completed. Construction of services will be required to adhere to the geotechnical recommendations, and the geotechnical engineer will be retained by the Owner during construction to monitor conformance to the recommendations.

#### **1.14 Drawing Requirement**

The submitted Site Plan from PBK Architects provides a metric scale, north arrow, location plan, name of Owner, contact information for owner's representative, property limits including bearings and dimensions, existing and proposed structures and parking areas, easements, rights of way, and adjacent street names. Similar information is provided on the engineering plans submitted for site plan approval.

## **2. WATER SERVICING**

### **2.1 Consistency with Master Servicing Study and Availability of Public Infrastructure**

The site water service will draw from the City watermain located on Second Avenue. No changes are required to the City's distribution system to allow servicing for this property.

### **2.2 System Constraints and Boundary Conditions**

There are no known system constraints pertaining to the proposed development. The building is expected to contain non-public washroom facilities (for staff only), and hose bibs for wash downs. Water demands are therefore expected to be minimal. No sprinklers or standpipe are required. Due to the low demand, an investigation of boundary conditions is not necessary. Subsequent sections will detail available pressures and flows based on hydrant data.

### **2.3 Confirmation of Adequate Domestic Supply and Pressure**

Available supply pressure and flow have been received from the City in the form of hydrant test results for existing hydrants located on the south side of Second Avenue, both east and west of the site. The available static pressure is 60 psi, and fire flows at 20 psi ranged from 2165 to 2265 l/gpm. This supply is adequate to service the minimal domestic demand anticipated.

### **2.4 Confirmation of Adequate Fire Flow Protection**

The proposed structure does not require a water supply for fire protection based on Code requirements.

City hydrants capable of providing a fire fighting supply for the building are located on Second Avenue and Third Avenue, both within 45 metres of the building. Code requirements dictate that the hydrants have to be within 90 metres of the building.

The availability of multiple hydrants, with adequate pressures and flows, and a building with a low fire hazard combine to suggest that adequate fire flow protection is available.

### **2.5 Check of High Pressures**

High pressure is not a concern at this location, as the static pressure observed at the hydrants is 60 psi.

### **2.6 Phasing Constraints**

The construction of the building will not be phased. The water service will not be required until the building is commissioned.

### **2.7 Reliability Requirements**

A shut off valve will be provided for the building water service at the property line in accordance with City standards. The City watermain includes shutoff valves east and west of the site.

## **2.8 Need for Pressure Zone Boundary Modification**

As the proposed water related work consists of a site service, there is no need for a pressure zone boundary modification.

## **2.9 Capability of Major Infrastructure to Supply Sufficient Water**

This requirement was addressed in subsections 2.3 and 2.4 above.

## **2.10 Description of Proposed Water Distribution Network**

A single water service will be provided to the single building on the site. There is no requirement for any site hydrants, and therefore no on-site water network.

## **2.11 Off-Site Requirements**

No off-site improvements to existing watermains, feeder mains, pumping stations or other water infrastructure are required to service the site.

## **2.12 Calculation of Water Demands**

The largest single water demand at any one time anticipated for the proposed garage is a 20 mm diameter wash down hose. The total fixture value count assuming three wash down hoses and a staff washroom is on the order of 50. This fixture value equates to an estimated water demand of approximately 20 USgpm, or 1.26 litres per second.

## **2.13 Model Schematic**

As the proposed water works consist of a single building service, a model schematic is not required.



### **3. WASTEWATER SERVICING**

#### **3.1 Design Criteria**

The City of Ottawa Sewer Design Guidelines recommend a sanitary flow allowance of 50,000 L/ha/day for commercial and institutional uses, with a peaking factor of 1.5. The proposed area to be developed is 0.2 ha. The peak flow allowed for the site calculated using the guidelines is therefore 0.17 L/s. The extraneous flow allowance is 0.28 L/s/ha, raising the peak estimated allowable flow to 0.23 L/s.

#### **3.2 Consistency With Master Servicing Study**

No master servicing study exists, so the anticipated flows are compared with the values generated by Ottawa Sewer Design Guidelines as noted in Section 3.1 above. The proposed facility will have a single washroom for occasional staff use, plus floor drains for the three covered levels of parking. A maximum of eight floor drains are anticipated for the two floors draining to the sanitary sewer. Assuming an average flow of 75 L/day for one staff member, and 375 L/day per floor drain, the total average flow is estimated as 0.04 L/s. Applying the peaking factor of 1.5, and adding the extraneous flow, the estimated peak flow is 0.12 L/s, which is below the allowed flow of 0.23 L/s, and well within the pipe capacity of the 150 mm diameter service proposed to be provided.

#### **3.3 Review of Soil Conditions and Groundwater Flows**

There are no anticipated specific local subsurface conditions that suggest the need for a higher extraneous flow allowance. The site sanitary service will be new, and therefore will be less susceptible to leakage when compared with older networks.

#### **3.4 Description of Existing Sanitary Sewer**

The existing City sanitary sewer on Second Avenue is a 250 mm diameter PVC sewer. There are no existing sanitary sewers on the site. The City sewer at the point of connection of the proposed service has a slope of 0.79 %, and an estimated capacity of 55 litres per second.

#### **3.5 Verification of Available Capacity in Downstream Sewer**

The City sanitary sewer is assumed to have been designed to accept drainage from the contributing area. The allowable peak flow is therefore 0.23 L/s as estimated in Section 3.1 above. As noted in Section 3.2, the estimated peak flow is lower than this value. This flow is only a small fraction of the capacity of the existing street sewer, and flows from the site are also not expected to coincide with the peak flows from the largely residential area upstream. No capacity issues are therefore anticipated.

#### **3.6 Calculations for Sanitary Sewers**

A sanitary sewer design table is not required for a single service. The proposed service has a capacity far in excess of the anticipated flows.

### **3.7 Description of Proposed Sewer Network**

The sanitary service from the building is proposed to be 150 mm diameter, installed at a minimum slope of 1%. This sewer has a capacity of 15 L/s. The service will be provided with a monitoring manhole near the property boundary.

### **3.8 Environmental Constraints**

There are no identified environmental constraints that impact the sanitary design in order to preserve the condition of watercourses, vegetation, or soil cover, or to manage water quantity or quality.

### **3.9 Pumping Requirements**

The proposed development will have no impact on existing pumping stations and will not require new pumping facilities.

### **3.10 Forcemains**

No forcemains are required specifically for this development.

### **3.11 Emergency Overflows from Sanitary Pumping Stations**

No pumping stations are required for this site.

### **3.12 Special Considerations**

Site investigations have not yielded the need for special considerations for sanitary sewer design related to contamination, corrosive environments, or any other issue.

## **4. STORMWATER SERVICING**

### **4.1 Description of Drainage Outlets and Downstream Constraints**

The site presently drains via two on-site catchbasins, one draining north to the City storm sewer on b Second Avenue, and the second draining south to the combined sewer on Third Avenue. These outlets will be abandoned.

As the site is already fully developed with paved surfaces, the proposed development will not result in any increase in runoff coefficient. Based on the City design criteria, runoff from the proposed site will be substantially reduced when compared with present conditions as a result of the introduction of stormwater quantity control.

As the proposed garage will fill virtually the entire site, the majority of storm drainage will be captured from drains at the open upper deck. This drainage will be directed to a stormwater detention tank below ground level at the north end of the building, and the drainage outlet from the tank will be to the existing 450 mm diameter storm sewer on Second Avenue.

Minor perimeter areas surrounding the structure will drain overland directly to Second and Third Avenues, with the drainage divide being approximately in the centre of the property, consistent with existing conditions.

### **4.2 Analysis of Available Capacity in Existing Public Infrastructure**

Available capacity is not a concern as stormwater flows will be reduced from present conditions in accordance with the design criteria established by the City of Ottawa. The allowable release rate from the site to the City storm sewer network will be based on a runoff coefficient of 0.4 and a rainfall intensity for a two year rainfall event. On-site detention storage is required for flows exceeding the allowable release up to the 100 year event.

### **4.3 Drainage Drawing**

Grading and servicing drawings are provided for the site plan application, and detail the direction of drainage, the pipe outlet, and the stormwater storage measures.

### **4.4 Water Quantity Control Objective**

The water quantity objective for the site is to limit the flow release to that generated by a 2 year rainfall event, based on a 10 minute time of concentration, and a runoff coefficient of 0.4. The calculation for the allowable release is as follows using the Rational Method:

$$Q = 2.78 \times C \times I \times A = 2.78 \times 0.4 \times 77.10 \times 0.1979 = 17.0 \text{ L/s}$$

where C is the runoff coefficient, I is the rainfall intensity (mm/hour), and A is the drainage area (ha).

Excess flows above this limit up to the 100 year storm event are to be temporarily stored on site.

#### 4.5 Water Quality Control Objective

As per correspondence from the Rideau Valley Conservation Authority, stormwater quality control treatment is not required for this site, as the downstream network is a combined sewer, with flow being treated at a wastewater treatment plant. .

#### 4.6 Description of Stormwater Management Concept

The proposed drainage system consists of floor drains on the upper deck, a single storm service from the lot to the street, and an on-site underground detention storage facility with a controlled rate of outflow.

It is standard practice in the City of Ottawa when utilizing underground storage tanks to determine the required volume using one half of the allowed rate or discharge. As noted in Section 4.4, the allowed rate of discharge is 17.0 L/s. The outflow rate to be used for the required volume of underground storage is therefore 8.5 L/s.

The required volume of storage is calculated using the modified Rational Method as indicated in the following tables calculated for the site drainage area of 0.1979 ha. A runoff coefficient of 0.9 is assumed as there is no significant pervious area on the site. For 100 year flow calculations, a value of 1.0 is used for the runoff coefficient.

Flows are calculated using the Rational Method with the formula  $Q = 2.78 \times C \times I \times A$ , where

- Q = flow in litres per second. C = runoff coefficient
- I = rainfall intensity (from City of Ottawa Sewer Design Guidelines)
- A = drainage area in hectares

Required storage is calculated by determining the difference between actual and allowable flow rates, and multiplying by the associated duration.

For 100 year storm event (C = 1.0 and area = 0.1979 ha)

Duration Minutes	Intensity mm/hr	Q L/s	Q Allowable L/s	Difference L/s	Storage m <sup>3</sup>
5	242.6	133.5	8.5	125.0	37.5
10	179.0	98.5	8.5	90.0	54.0
15	146.8	80.8	8.5	72.3	65.1
20	119.95	66.0	8.5	57.5	69.0
25	103.85	57.1	8.5	48.6	72.9
30	91.90	50.6	8.5	42.1	75.8
35	82.58	45.4	8.5	36.9	77.5
40	75.15	41.3	8.5	32.8	78.7
45	69.05	38.0	8.5	29.5	79.7
50	63.95	35.2	8.5	26.7	80.1
55	59.62	32.8	8.5	24.3	80.2
60	53.20	29.3	8.5	20.8	74.9

A required volume of 80.2 m<sup>3</sup> is indicated for the 100 year event.

The five year design flow from the site can be determined using the Rational Method:

$$Q = 2.78 CIA = 2.78 \times 0.9 \times 104.4 \times 0.1979 = 51.7 \text{ L/s}$$

As this flow exceeds the allowable release rate of 17.0 L/s, storage is therefore also necessary for the 5 year event. As all storage will be provided in a single underground tank, the storage calculation is again repeated with an outflow rate of 8.5 L/s (one half of the allowable rate).

For 5 year storm event (C = 0.9 and area = 0.1979 ha)

Duration Minutes	Intensity mm/hr	Q L/s	Q allowed L/s	Difference L/s	Storage m <sup>3</sup>
5	140.20	69.4	8.5	60.9	18.3
10	104.40	51.7	8.5	43.2	25.9
15	85.60	42.4	8.5	33.9	30.5
20	70.25	34.8	8.5	26.3	31.6
25	60.90	30.2	8.5	21.7	32.6
30	53.90	26.7	8.5	18.2	32.8
35	48.52	24.0	8.5	15.5	32.6

A required storage volume of 32.8 m<sup>3</sup> is indicated for the 5 year event.

Temporary stormwater storage will be provided on-site through the use of a cast in place concrete tank to be constructed below the ground floor level. The tank volume is approximately 82 m<sup>3</sup> as noted on Drawing C2. The volume meets the storage requirements calculated above.

Outside the footprint of the parking garage, there is approximately 244 m<sup>2</sup> of area that will drain directly to the street. This area is comprised on a narrow strip of land along either side of the garage, plus some larger sidewalk/patio areas on the north and south frontages. The runoff from these uncontrolled areas has to be calculated, and then subtracted from the allowable release rate of 17.0 L/s in order to determine the rate at which drainage can be discharged from the storage tank to the storm sewer.

The one hundred year design flow from the uncontrolled portion site can be determined using the Rational Method:

$$Q = 2.78 CIA = 2.78 \times 1.0 \times 179.0 \times 0.0244 = 12.1 \text{ L/s.}$$

The allowable release rate from the storage tank is therefore 17.0 – 12.1 = 4.9 L/s.

The flow release rate from the tank will be regulated by a custom Hydrovex flow regulator installed on the outlet from the tank, sized to release no more than 4.9 L/s at a head of 2.02 m above the outlet invert from the tank. The outlet invert has been set at 67.20 m in order to allow a 1% slope on the outlet pipe to the City storm sewer. The tank will overflow at the access opening provided at grade level at the north edge of the building. The elevation of the overflow/access grate is 69.22 m.

Water contained in the storage facility will be gradually released to the storm sewer. The time to empty the tank from a full level is approximately 5 hours.

#### **4.7 Set-back from Private Sewage Disposal Systems, Watercourses and Hazard Lands**

As there are no adjacent or on-site private sewage disposal systems, watercourses or hazard lands, there are no required set-backs.

#### **4.8 Pre-Consultation with Ontario Ministry of the Environment and Conservation Authority**

Both agencies were contacted as noted in Section 1.2 above.

#### **4.9 Consistency with Higher Level Studies**

No higher level studies pertaining to this site were identified.

#### **4.10 Storage Requirements and Conveyance Capacity**

Storage requirements and conveyance capacity are discussed in Section 4.6 above.

The conveyance capacity of the storm sewer service will be designed to accommodate a 5 year design flow as per standard practice, although the flow being released will be less than this rate. The five year design flow for the area (0.1735 ha) being captured by the site storm sewer system is determined using the Rational Method, assuming a time of concentration of 10 minutes, and a corresponding rainfall intensity of 104.4 mm/hour:

Five year flow generated =  $2.78 \times C \times I \times A = 2.78 \times 0.9 \times 104.4 \times 0.1735 = 45.3 \text{ L/s}$

The outlet storm sewer from the stormwater tank is 250 mm diameter at a slope of 1%, and has a capacity of 62 L/s. This exceeds the five year flow rate from the site.

#### **4.11 Watercourses**

There are no watercourses on or adjacent to the site. Protection or alteration of watercourses is therefore not required.

#### **4.12 Pre and Post Development Peak Flow Rates**

The pre-development condition of the site is fully developed, with buildings and parking areas encompassing virtually the complete site. No flow attenuation is currently provided.

Post development flow rates will be substantially reduced (greater than 80% reduction) when compared with the present development due to the addition of a significant volume of stormwater storage.

#### **4.13 Diversion of Drainage Catchment Areas**

There are no proposed diversions of drainage catchment areas from one outlet to another other than locally, as all piped drainage from the site is now directed to Second Avenue rather than being split between Second and Third Avenues. The overland flow from the site that is uncontrolled is still split between the two streets. The rate of flow conveyed through the sewer to Second Avenue will be lower than generated under present conditions.

#### **4.14 Minor and Major Systems**

The minor drainage system, consisting of deck drains, a storage tank and a single storm service will collect and convey stormwater generated by rainfall events up to the 100 year level from the building footprint. Flows exceeding the system capacity will flow overland to the adjacent streets, as will flow from the 244 m<sup>2</sup> of perimeter area. Major system flow is conveyed via the local streets.

#### **4.15 Downstream Capacity Where Quantity Control Is Not Proposed**

This checklist item is not applicable to this proposed development as quantity control is provided.

#### **4.16 Impacts to Receiving Watercourses**

No measurable impact is anticipated to downstream receiving watercourses due the separation of the site from the eventual receiving watercourse as a result of discharge through City owned sewers and treatment facilities. Flow rates from the site will be released relative to present conditions, but this will not be significant at the receiving watercourse.

#### **4.17 Municipal Drains and Related Approvals**

There are no municipal drains on the site or associated with the drainage from the site.

#### **4.18 Means of Conveyance and Storage Capacity**

The means of flow conveyance and storage capacity are described in Sections 4.6, 4.10 and 4.14 above.

#### **4.19 Flood Levels and Major Flow Routing**

The proposed building finished floor levels (for equipment rooms, elevators, staff facilities) will be located above the driveway aisles, and the garage entry points will be raised above the adjacent sidewalks and roads. Major flow routing will be directed to the adjacent streets.

#### **4.20 Hydraulic Analysis**

All applicable hydraulic calculations for the site are included above. Sewer design sheets are not required as the storm sewer network consists of a single building service.

#### **4.21 Erosion and Sediment Control Plan**

The Contractor will be required to implement Best Management Practices to minimize erosion and sediment release during construction activities. Measures will include a geotextile under catch basin grates. It is not anticipated that any significant areas of exposed soils will occur during the construction period at an elevation higher than the surrounding grades. No sediment laden runoff from the site is therefore expected.

#### **4.22 Identification of Floodplains**

There are no designated floodplains on the site of this development.

#### 4.23 Fill Constraints

There are no fill constraints applicable to this site related to any floodplain or site soil conditions as identified in the geotechnical investigation. The geotechnical report has indicated that existing fill on the site is not suitable for re-use, and therefore any fill removed during construction will be disposed of off-site.

### 5. APPROVAL AND PERMIT REQUIREMENTS

The proposed development is subject to site plan approval and building permit approval. As noted, an Environmental Compliance Approval is required from the Ministry of the Environment for the stormwater management works and discharge to a combined sewer system.

No approvals related to municipal drains are required.

No permits or approvals are required from the Ontario Ministry of Transportation, National Capital Commission, Parks Canada, Public Works and Government Services Canada, or other provincial or federal regulatory agency.

### 6. CONCLUSION

#### 6.1 Conclusion

It is concluded that the proposed development can meet all required servicing constraints and associated requirements.

#### 6.2 Comments Received from Review Agencies

Comments related to engineering design and approvals have been received from the City of Ottawa, RVCA and MOE. Copies of these comments are included in the appendix of this report. The civil engineering drawings and this report are consistent with the comments received to date.

#### 6.3 Signature and Professional Stamp

Report prepared by:

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**APPENDIX A**

**CORRESPONDENCE FROM RIDEAU VALLEY CONSERVATION AUTHORITY**

**CORRESPONDENCE FROM CITY OF OTTAWA INCLUDING HYDRANT FLOW DATA**

**CORRESPONDENCE FROM ONTARIO MINISTRY OF THE ENVIRONMENT**

## James Johnston

---

**From:** Jocelyn Chandler <jocelyn.chandler@rvca.ca>  
**Sent:** Wednesday, August 14, 2013 3:02 PM  
**To:** James Johnston  
**Subject:** RE: Request for RVCA input on stormwater requirements for 170 Second Avenue

Hello James, No quality control required as the sewers are part of the combined sewer system. Jocelyn

Jocelyn Chandler M.Pl. MCIP, RPP  
Planner, RVCA  
t) 613-692-3571 x1137  
f) 613-692-0831  
[jocelyn.chandler@rvca.ca](mailto:jocelyn.chandler@rvca.ca)

[www.rvca.ca](http://www.rvca.ca)

mail: Box 599 3889 Rideau Valley Dr., Manotick, ON K4M 1A5

courier: 3889 Rideau Valley Dr., Nepean, ON K2C 3H1

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**From:** James Johnston [<mailto:James.Johnston@genivar.com>]  
**Sent:** Thursday, August 01, 2013 5:35 PM  
**To:** Jocelyn Chandler  
**Subject:** Request for RVCA input on stormwater requirements for 170 Second Avenue

Hello Jocelyn,

The City is developing a parking garage on the site of a present parking lot at 170 Second Avenue, just west of Bank Street. There is no stormwater management on the site at present. The City has indicated that quantity control will be required, and have provided the criteria to be met. Would you be able to advise on any quality control requirements? I believe the proposed structure will have four levels, and will fill the footprint of the site (as does the present parking lot). Drainage from the first three levels will go to the sanitary sewer. Drainage from the roof parking deck will go to the storm after passing through a detention facility.

A current site plan is attached.



**James (Jim) Johnston, P.Eng., LEED® AP ND+C**

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2611 Queensview Drive, Suite 300, Ottawa, Ontario K2B 8K2

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## James Johnston

---

**From:** White, Joshua <Joshua.White@ottawa.ca>  
**Sent:** Thursday, August 15, 2013 2:28 PM  
**To:** James Johnston  
**Subject:** RE: 170 Second Avenue - RVCA input on stormwater requirements for 170 Second Avenue

Hi Jim,

I thought that the storm sewer on Second Ave, drained into the Rideau Canal. It appears that sewer that I believed was connected to the Rideau canal does not actually connect to the sewer that drains into the Rideau canal.

This site would then be in the O'Connor Street Sewer shed, which is a combined sewer shed.

Josh

**From:** James Johnston [mailto:James.Johnston@genivar.com]  
**Sent:** August 14, 2013 3:24 PM  
**To:** White, Joshua  
**Subject:** 170 Second Avenue - RVCA input on stormwater requirements for 170 Second Avenue

Josh,

Please see the note below from RVCA. Is this information correct concerning the combined sewer system?



**James (Jim) Johnston, P.Eng., LEED® AP ND+C**

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**From:** Jocelyn Chandler [mailto:jocelyn.chandler@rvca.ca]  
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**From:** James Johnston [mailto:James.Johnston@genivar.com]  
**Sent:** Thursday, August 01, 2013 5:35 PM

**To:** Jocelyn Chandler

**Subject:** Request for RVCA input on stormwater requirements for 170 Second Avenue

Hello Jocelyn,

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## James Johnston

---

**From:** Faris, Robert W <Robert.Faris@ottawa.ca>  
**Sent:** Tuesday, August 27, 2013 1:39 PM  
**To:** James Johnston  
**Subject:** FW: 170 Second Avenue - City parking lot and proposed garage

FYI

If you have any questions or concerns please feel free to contact me.

Thanks,  
*Rob*

ROBERT FARIS  
PROJECT MANAGER | CITY OF OTTAWA | DESIGN & CONSTRUCTION | BUILDINGS  
P 613-580-2424 X 43063 | C 613-371-6630 | [ROBERT.FARIS@OTTAWA.CA](mailto:ROBERT.FARIS@OTTAWA.CA)  
100 CONSTELLATION CRESCENT OTTAWA, ON K2G 6J8

**From:** Graham, Kurtis  
**Sent:** August 27, 2013 1:04 PM  
**To:** Faris, Robert W  
**Cc:** Crowder, Murray  
**Subject:** FW: 170 Second Avenue - City parking lot and proposed garage

Hi Rob,

In early August James from Genivar contacted ESD regarding a service they found at 170 Second Ave.

Please see the results of the investigation below. Second Ave was rehabbed in 1998. Based off the information Jack found on site it would make sense that this service was unused prior to 1998 and was not reconnected at the time of rehab.

If you require any further information, please let me know.

**Kurtis Graham** | [kgraham@ottawa.ca](mailto:kgraham@ottawa.ca) | City of Ottawa | ☎ 613-940-1111 ext 2131

**From:** Grey, Jack A  
**Sent:** Tuesday, August 27, 2013 11:04 AM  
**To:** Graham, Kurtis; Crowder, Murray  
**Subject:** RE: 170 Second Avenue - City parking lot and proposed garage

*As to my final investigation at 170 second ave found that with the service valve in chamber open and the service post turned on there was no water from the service as of this result the assumption is that the water service feeding the address 170 city parking is probably blanked at the water main and not a live service. also there is no meter it was removed some time ago.*

*Jack A Grey  
Environmental Services  
First Response Coordinator  
Office-613-580-2424-ex-22364  
Cell-613-223-4980  
Fax-613-580-2569*

**From:** Crowder, Murray  
**Sent:** August 19, 2013 12:45 PM  
**To:** Grey, Jack A  
**Subject:** FW: 170 Second Avenue - City parking lot and proposed garage

**From:** Graham, Kurtis  
**Sent:** August 19, 2013 12:37 PM  
**To:** Crowder, Murray  
**Subject:** RE: 170 Second Avenue - City parking lot and proposed garage

Hi Murray,

Did Jack have a chance to go back out and confirm if the service is connected to the water main?

**Kurtis Graham** | Environmental Services | City of Ottawa | ☎ 613-940-3113 ext. 2112

**From:** Crowder, Murray  
**Sent:** August 15, 2013 12:01 PM  
**To:** Graham, Kurtis  
**Cc:** Hannewyk, Joseph; Leclair, Martin A  
**Subject:** RE: 170 Second Avenue - City parking lot and proposed garage

Hi Kurtis,

Jack grey went to 170 Second Ave today and found the service. The service post was in the off position and the service did terminate in the chamber. There was no meter in chamber. The service post, service and chamber is painted. Jack has measurements if required.

Thanks,

**Murray Crowder**

**Supervisor, First Response**  
**Environmental Services Department**  
**Environmental Business Services Branch**  
**City of Ottawa**  
951 Clyde Avenue, Ottawa, On K1Z 5A6  
Mail Code 06-65  
Tel: (613) 580-2424 x 22231  
Fax: (613) 728-4183  
e-mail: [murray.crowder@ottawa.ca](mailto:murray.crowder@ottawa.ca)

**From:** Crowder, Murray  
**Sent:** August 14, 2013 10:53 AM  
**To:** Graham, Kurtis; Grey, Jack A  
**Cc:** Hannewyk, Joseph; Leclair, Martin A  
**Subject:** RE: 170 Second Avenue - City parking lot and proposed garage

Hi Kurtis,

Jack is off today but I can have him investigate the site tomorrow.

Thanks,

**Murray Crowder**

**Supervisor, First Response**  
**Environmental Services Department**  
**Environmental Business Services Branch**  
**City of Ottawa**  
951 Clyde Avenue, Ottawa, On K1Z 5A6  
Mail Code 06-65  
Tel: (613) 580-2424 x 22231  
Fax: (613) 728-4183  
e-mail: [murray.crowder@ottawa.ca](mailto:murray.crowder@ottawa.ca)

**From:** Graham, Kurtis  
**Sent:** August 14, 2013 10:16 AM  
**To:** Crowder, Murray  
**Cc:** Hannewyk, Joseph; Leclair, Martin A  
**Subject:** FW: 170 Second Avenue - City parking lot and proposed garage

Hi Murray,

This may be a good one for Jack to investigate. I took a look and did not see any service/meter information in Maximo for IMA. Would you be able to have Jack go investigate and respond back to Robert Faris in Design and Construction.

Thanks,

**Kurtis Graham** [kgraham@cityofottawa.ca](mailto:kgraham@cityofottawa.ca) (513) 829-8299

**From:** Hannewyk, Joseph  
**Sent:** August 14, 2013 8:54 AM  
**To:** Graham, Kurtis  
**Cc:** Leclair, Martin A  
**Subject:** FW: 170 Second Avenue - City parking lot and proposed garage

Hi Kurtis, believe this may be something your group can follow-up with . Thanks Joe

**From:** James Johnston [<mailto:James.Johnston@genivar.com>]  
**Sent:** 2013/08/06 08:12  
**To:** Hannewyk, Joseph  
**Subject:** 170 Second Avenue - City parking lot and proposed garage

Hello Joseph,

We are working on a City project for a parking garage at 170 Second Avenue (see the attached sketch for location). At the present time, the site is used as a surface parking lot. A water service has been located along the west side of the site, coming off of the main on Second Avenue, and terminating at a chamber at the mid point of the west boundary of the site. I would appreciate receiving any available information pertaining to this service.

The City PM on the project is Robert W. Faris in the Design and Construction/Buildings Group. His extension is 43063. Josh White is the infrastructure review officer.



**James (Jim) Johnston, P.Eng., LEED® AP ND+C**  
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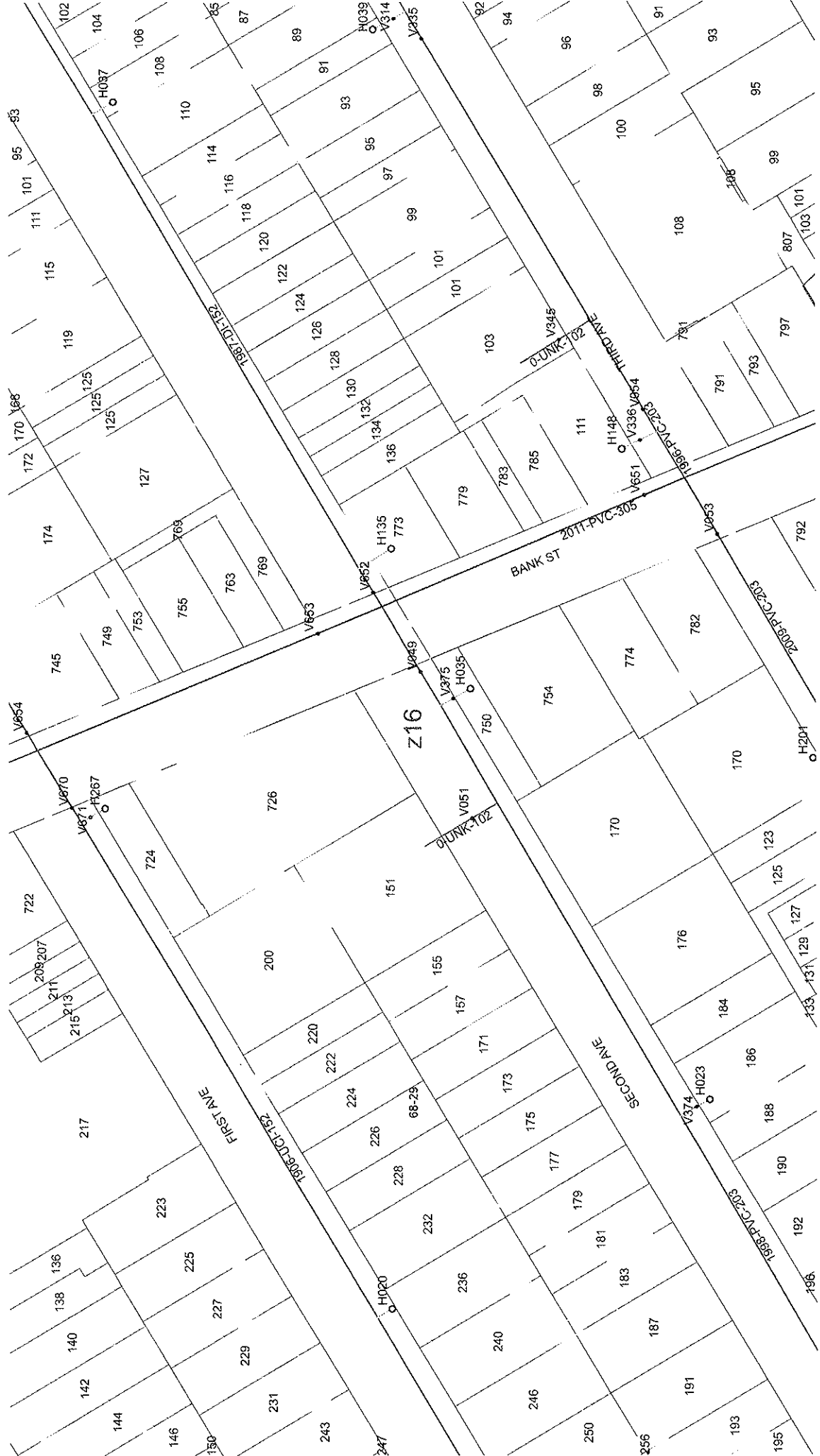
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Z16

FIRST AVE

SECOND AVE

BANK ST

1808-TGT-132

UUNK-102

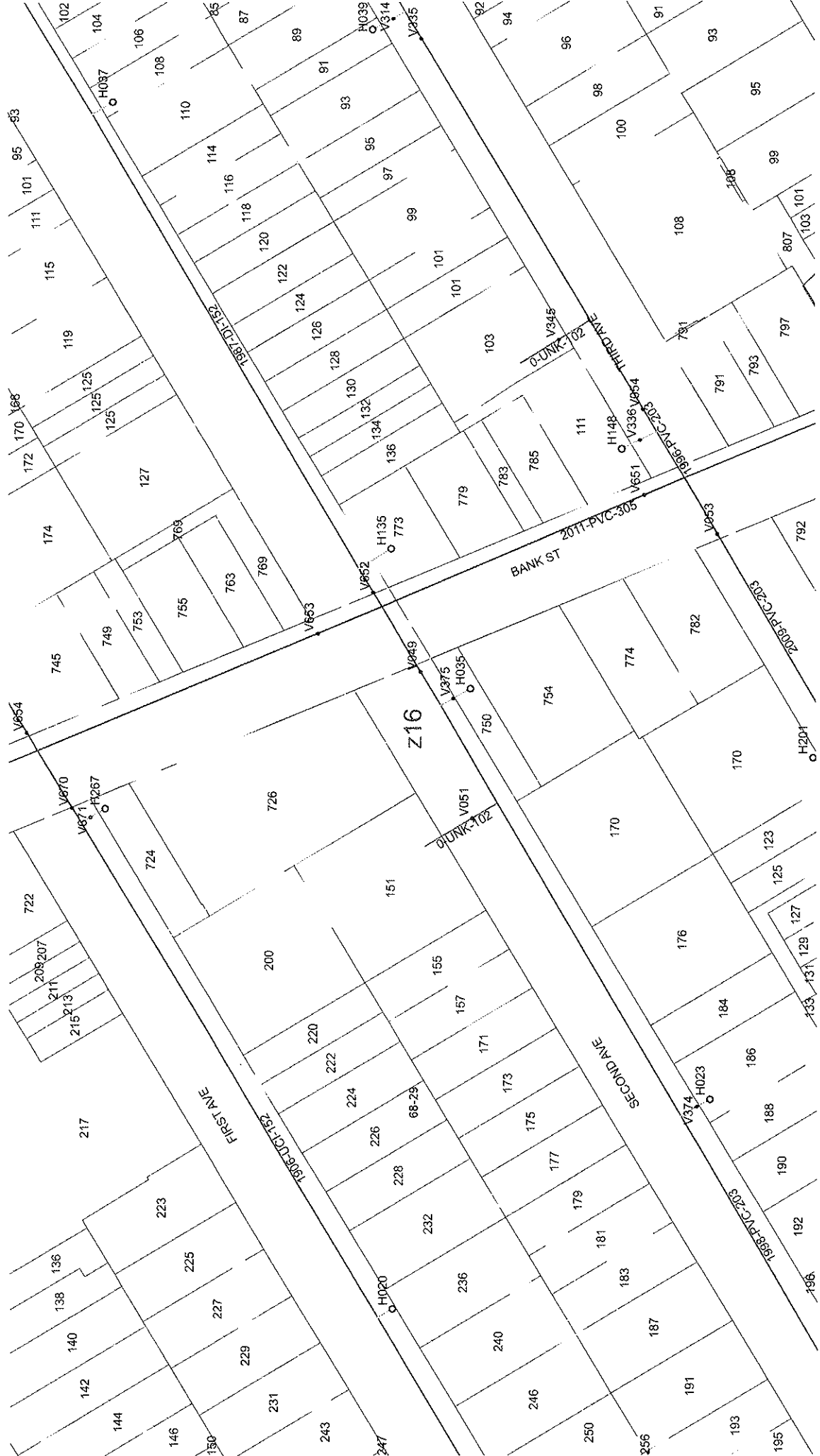
2011-PVC-305

1898-FVC-203

2009-FVC-203

UUNK-102

1898-FVC-203



Z16

FIRST AVE

SECOND AVE

BANK ST

1808-TGT-132

UUNK-102

2011-PVC-305

1898-FVC-203

2009-FVC-203

UUNK-102

1898-FVC-203

## James Johnston

---

**From:** Goulet, Charles (ENE) <Charles.Goulet@ontario.ca>  
**Sent:** Friday, August 02, 2013 9:16 AM  
**To:** James Johnston  
**Cc:** Primeau, Charlie (ENE)  
**Subject:** RE: Request for MOE input on stormwater requirements for 170 Second Avenue, Ottawa

Good morning James,

Please note that for municipal or residential stormwater management projects in the City of Ottawa, Charlie Primeau is the MOE staff looking after such matters now.

Before this office can advise, would you please indicate where is the ultimate outlet for the catchment area? It would be my understanding that the storm sewer is within the O'Connor drainage area and thus, a combined sewer overflow is possible. If such is the case, then consistent with other developments in the area, the SWM works at the 170 Second Avenue property would need an ECA.

Regards,  
Charles Goulet, P. Eng.  
District Engineer  
MOE Ottawa District Office  
2430 Don Reid Drive  
Ottawa ON  
K1H 1E1

DL 613.521.3450 ext. 246  
TF 800.860.2195 ext. 246  
F 613.521.5437



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**From:** James Johnston [<mailto:James.Johnston@genivar.com>]  
**Sent:** August-02-13 7:25 AM  
**To:** Goulet, Charles (ENE)  
**Subject:** FW: Request for MOE input on stormwater requirements for 170 Second Avenue, Ottawa

Good morning Charles,

We would appreciate receiving comment from you regarding any MOE approval requirements that would apply for a project we are working on for the City of Ottawa. The City is developing a parking garage on the site of a present parking lot at 170 Second Avenue, just west of Bank Street. There is no stormwater management on the site at present, and the site drains via catchbasins to sewers on the adjacent streets. The City has indicated that quantity control will be required, and have provided the criteria to be met. Stormwater discharge will be to an existing City storm sewer. Sanitary and water services will also be provided to the property. I believe the proposed structure will have four levels, and will fill the footprint of the site (as does the present parking lot).

A current site plan is attached.



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