



## **Functional Servicing and Stormwater Management Report for**

**2120 Hurontario Street  
City of Mississauga, Ontario**

*Prepared By:*

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R.J. Burnside & Associates Limited  
6990 Creditview Road, Unit 2, Mississauga ON L5N 8R9

*Prepared for:*

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Gordon Woods Development Limited

March 2012

File No:300 030579

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**Gordon Woods Development Limited**

Functional Servicing and Stormwater Management Implementation Report for  
2120 Hurontario Street, City of Mississauga  
March 2012

**Record of Revisions**

<b>Revision</b>	<b>Date</b>	<b>Description</b>
0	March 1, 2012	Submission for Rezoning Application

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## **1.0 Introduction**

### **1.1 Background**

R. J. Burnside & Associates Limited (Burnside) are the Consulting Engineers retained by Gordon Woods Development Limited to prepare a Functional Servicing and Stormwater Management Implementation Report in support of a Re-Zoning Application and subsequent Site Plan Application for a re-development to be located at 2120 Hurontario Street in the City of Mississauga.

The purpose of this report is to:

- Evaluate the supply and distribution of municipal water to meet the domestic water and firefighting supply needs for the development.
- Identify sanitary servicing opportunities and constraints, and confirm that there is adequate capacity in the receiving municipal sewers to accommodate sanitary flows from the development.
- Evaluate the stormwater management opportunities and constraints, including:
  - Calculate the anticipated stormwater runoff from the proposed development to ensure that post-development flows do not exceed pre-development flows;
  - Evaluate suitable methods for attenuation and treatment of stormwater runoff;
  - Develop and propose on-site control measures and examine theoretical performance; and,
  - Demonstrate compliance of the proposed stormwater control measures with the City of Mississauga Transportation and Works Department's *Development Requirements Manual*.

All of the above will be completed in accordance with accepted engineering practice and criteria from the Region of Peel, City of Mississauga and other governing approval agencies.

### **1.2 Site Description**

The subject property is located near the northwest corner of the Hurontario Street and Harborn Road intersection and has an approximately area of 0.98 hectares. The site has direct frontage and access to Hurontario Street to the east and Grange Drive to the west. Existing structures include a total of seven (7) detached single family dwellings, three (3) along the Hurontario Street frontage and four (4) along the Grange Road frontage. There are also a total of five (5) supporting structures including two (2) detached garages and three (3) sheds. All existing structures will be demolished to accommodate the proposed new construction.

The overall site currently drains in a southerly direction and has an approximate slope of 1.7%. Currently the lots fronting Hurontario Street and a small portion of the lots fronting Grange Drive (approximately 0.48 ha) drain to a catchbasin located along the south property line, the rest of the property (approximately 0.50 ha) drains west toward a road side ditch flowing south and located along the east side of Grange Drive.

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Existing underground municipal infrastructure surrounding the site includes storm sewer, sanitary sewer, and water mains along Hurontario Street and a watermain and a collector sanitary sewer along Grange Drive.

The site is bounded by existing commercial development to the south, residential and commercial to the north, by Hurontario Street to the east, and by Grange Drive to the west. Figure 1 is a Location Plan showing the site location in context with the surrounding area.

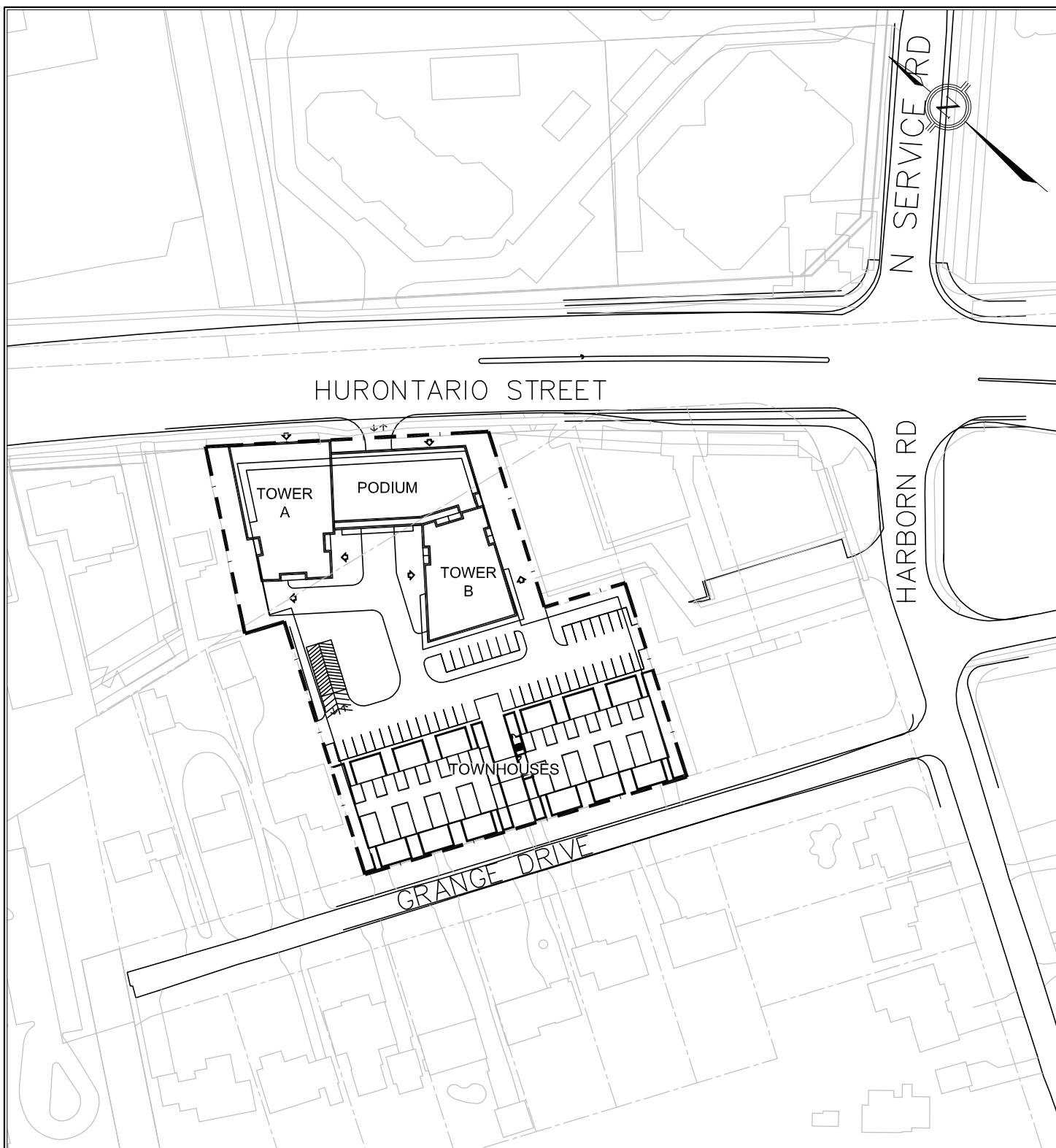
### **1.3 Proposed Development**

The proposed re-development of the subject property will see the construction of 20 3-storey townhouses along Grange Drive and two (2) residential towers (Tower A and B) and a podium along Hurontario Street. Tower A will be a 36-storey condominium high rise with lower level commercial and will provide 305 residential units. Tower B will be a 22-storey condominium high rise with lower level commercial and will provide 120 residential units. The podium will be located between Towers A and B and will be a 6-storey residential building with lower level commercial and will provide 134 residential units.

The new underground parking for the site will include three (3) parking levels below the entire site. Access to the entire underground parking will be accessed within the site from behind Tower A. Driveway access to the site will be from Hurontario Street.

Refer to Figure 2 for the location of the towers, podium and townhouses within the site.





Drawing Title

**SITE CONTEXT PLAN**  
 2120 Hurontario Street  
 Mississauga, Ontario



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Client

**Gordon Woods Development Ltd.**

Drawn By  
 E.L.

Checked By  
 V.J.D.

Drawing No.

Scale  
 N.T.S.

Project No.  
 300 030579

**FIG2**



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## **2.0 Stormwater Management**

### **2.1 Design Criteria**

The stormwater management criteria for this development are based on the *Development Requirements Manual*, as published by the City of Mississauga Transportation and Works Department, January 2009. The following stormwater management criteria are applied to this development.

### **2.2 Quantity Control**

The City of Mississauga has advised that there are no specific storm drainage (quantity control) criteria for this area; however, flows into the City's storm sewers must be controlled the existing conditions 10-year design storm event. As per the existing drainage plan for the area, this site is located within two drainage areas. The east side of the site is within a 1.13ha drainage area with a 0.75 runoff coefficient value and includes an area upstream of the site. The west side of the site is located within a 1.89ha drainage area with a 0.50 runoff coefficient (see Figure 3). On-site detention will be required if the existing minor system can't accommodate the proposed flows resulting from the 10-year storm event under proposed conditions. Additionally, an emergency overland flow route must be identified for flows generated by events greater than a 10-year storm event.

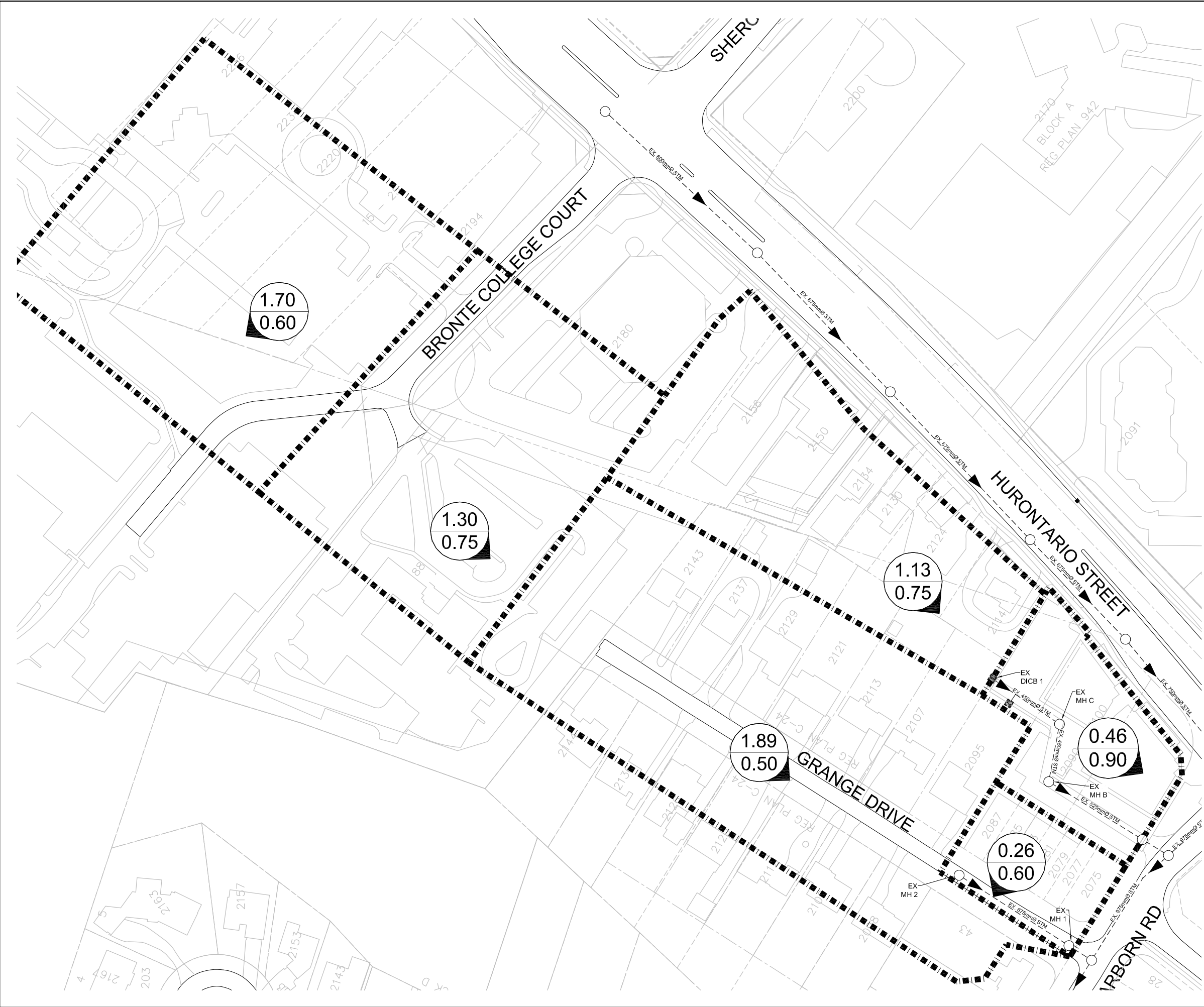
### **2.3 Quality Control**

As per the City of Mississauga Transportation and Works Department's *Development Requirements Manual*, Section 2.01.04, water quality controls required for this development are to be implemented in accordance to the Ontario Ministry of the Environment (MOE) *Stormwater Management Planning & Design Manual*, 2003. In order to maintain or enhance the existing water quality at the outlet, a "Normal Protection" level will be implemented for this site. Normal protection corresponds to the long-term average removal of 70% of the total suspended solids on an annual basis.

### **2.4 Existing Drainage**

Under existing conditions the lots facing Grange Drive drain in a southerly direction toward a roadside ditch running along the north side of Grange Drive. The rest of the site, along with several lots upstream of the site, drains south east towards an existing storm sewer system (refer to Figure 3). The existing storm system consists of a 450mm diameter expands into a 525mm diameter pipe that drains into the 975mm diameter storm sewer main on Harborn Road. This storm system has been designed to accommodate a total of 1.13 ha with an average runoff coefficient of 0.75 (as per existing Storm Drainage Area Plan C-36998, Appendix D).

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# STORM DRAINAGE AREA PLAN EXISTING CONDITIONS

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DRAINAGE AREA LIMITS

PROPOSED STORM

EXISTING STORM

PROPOSED STORM MANHOLE

EXISTING STORM MANHOLE

PROPOSED STORM MANHOLE

EXISTING STORM MANHOLE

0.26

0.60

AREA IN HECTARES

RUNOFF COEFFICIENT

FLOW DIRECTION

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Drawing/Project Title  
**2120 HURONTARIO STREET**

**MISSISSAUGA, ONTARIO**

Drawn By <b>E.L.</b>	Checked By <b>V.J.D.</b>	Drawing No. <b>FIG3</b>
Scale <b>1:1500</b>	Project No. <b>300 030579</b>	

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### **3.0 Stormwater Management Implementation**

#### **3.1 Existing Storm Sewer Infrastructure**

As-constructed plans obtained from the City of Mississauga records department along with a survey for the site, indicate that there is currently a dedicated storm sewer adjacent to the site. The storm sewer network includes the following:

- A 675mm storm sewer flowing south along west side of Hurontario Street toward a 975mm storm sewer flowing west along Harborn Road.
- A 450mm storm sewer starting at a catchbasin along the south property line of the site. This storm sewer leg flows south and eventually discharges into the 975mm storm sewer flowing west along Harborn Road.
- A 675mm storm sewer flowing south on Grange Drive, from the south property line to Harborn Road.

For a schematic of the existing storm sewer infrastructure refer to Figure 4 on the following page.

#### **3.2 Discharge to Municipal Infrastructure**

##### **3.2.1 On-Site**

The 10-year storm event runoff for the entire development will be collected by a proposed stormwater sewer connected to the existing 450mm diameter storm pipe located adjacent to the site. This storm sewer has an existing capacity of 250 L/s and has been designed to accommodate the 10-year storm event of an area of 1.13 ha with a 0.75 runoff coefficient (230 L/s). Under the proposed conditions this storm sewer will receive flow from a total area of 0.98 ha with a runoff coefficient of 0.90 for an estimated 240 L/s. Refer to Appendix A for calculations, Figure 5 for an illustration of the proposed drainage areas and to Drawing GR1 for full drainage details.

##### **3.2.2 Off-Site**

A proposed 375mm storm sewer pipe will capture the 10-year storm event runoff from the offsite area upstream of the site (0.72ha). This area, as per existing storm drainage plans, was to be collected by a future extension of the existing storm sewer adjacent to the site (see Appendix D). Storm runoff will then be directed to a proposed extension of the existing 675mm diameter storm sewer along Grange Drive. The limiting capacity of the proposed 675mm diameter storm sewer will be the downstream section going from the existing Manhole 2 to existing Manhole 1. Currently this storm pipe carries approximately 530 L/s during the 10-year storm event and has a capacity of 600 L/s. Under proposed conditions the flow will increase to a calculated 590 L/s which is still within the pipe's capacity. Refer to Appendix A for full calculations.

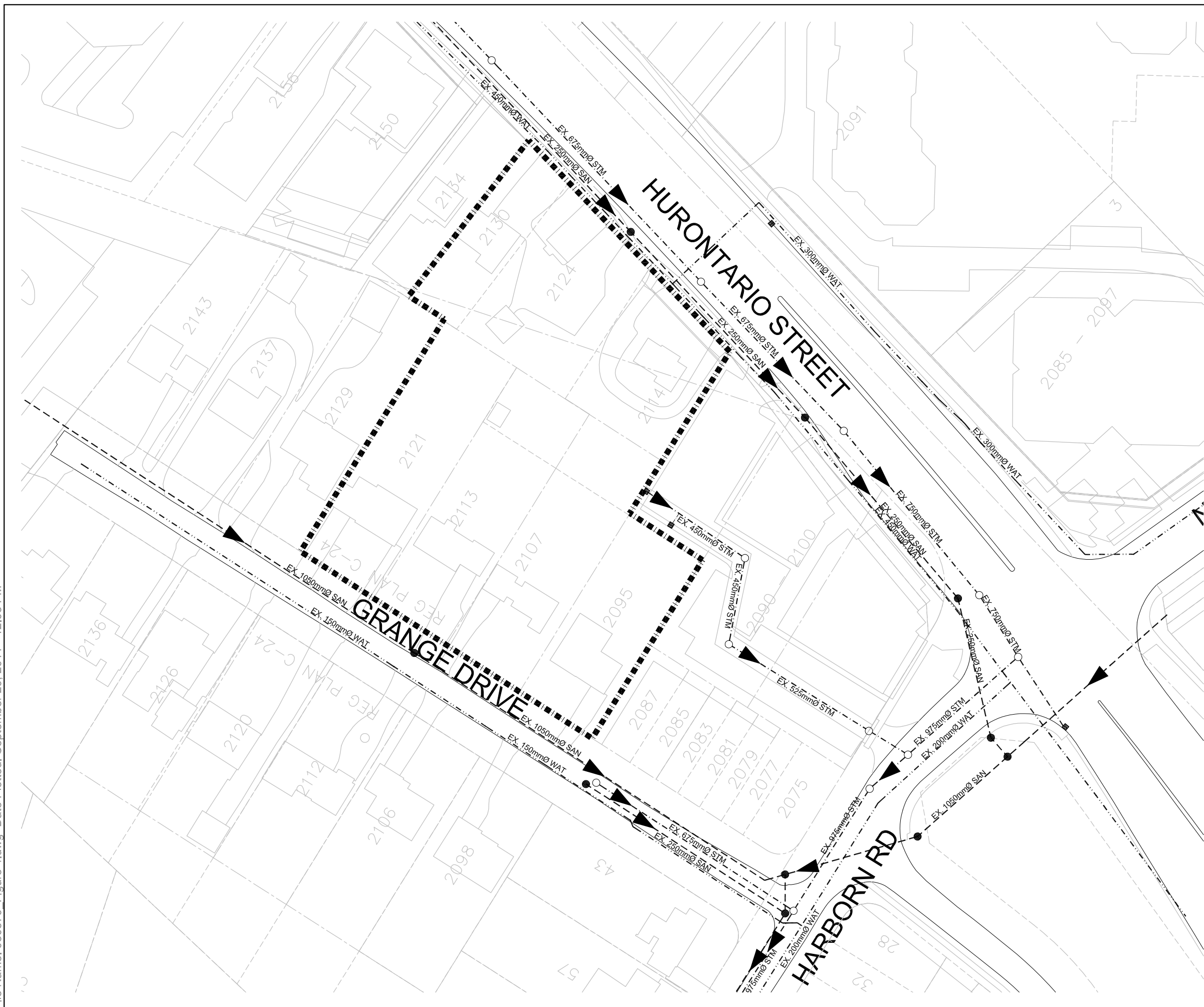
Client	GORDON WOODS DEVELOPMENTS LTD.
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DEVELOPMENTS LTD.



MISSISSAUGA, ONTARIO

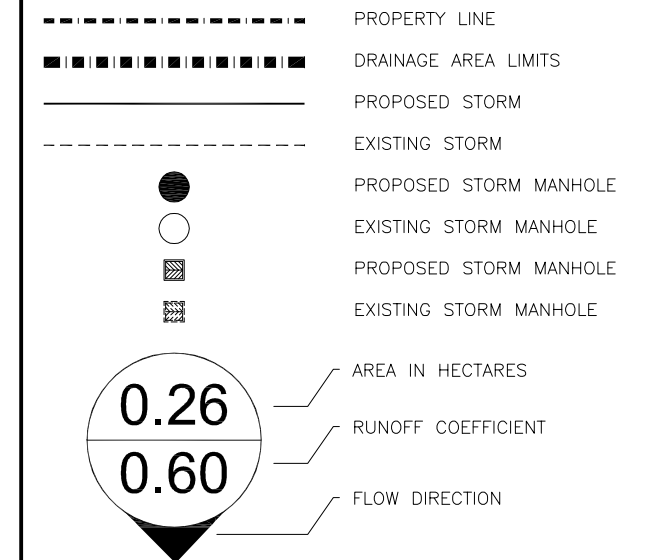
Drawn By E.L.	Checked By V.J.D.	Drawing No.  <b>FIG4</b>
Scale N.T.S.	Project No. 300 030579	



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Drawing/Project Title

2120 HURONTARIO STREET

MISSISSAUGA, ONTARIO

Drawn By	
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E.L.

Checked By
------------

V.J.D.

Scale
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Project No.	300 030579
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Drawing No.

**FIG5**

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### 3.3 Quantity Control

As per the City of Mississauga, on-site quantity control for this site is not required for the subject lands on this project. However, both the existing and proposed minor stormwater systems are required to accommodate the stormwater runoff from a 10-year design storm event. Therefore, the allowable release rate to the municipal storm sewer system from this development will be controlled to the existing capacity of the receiving storm sewer.

As per the attached calculations on Appendix A, the stormwater runoff from the site during the 10-year storm event is 220 L/s, not considering attenuation due to the site's internal storm system and roof drains. The receiving 450mm diameter storm sewer has a full flow capacity of 250 L/s.

At the detailed design stage, the option of providing additional stormwater attenuation through the use of roof control should be explored to provide an extra degree of protection for the storm sewer minor system.

### 3.4 Quality Control

The site will be taken up in its majority by rooftops, landscaped areas and hardscape areas which are not generally considered a contamination sources and internal drains including those in the sub-surface parking areas will discharge to the sanitary sewer (per accepted engineering practice and criteria).

There is a small opportunity for unclean rainwater to be generated from this development since there will be access to vehicular traffic at ground level for parking, loading and access to the underground parking garage. However, stormwater quality control measures are not proposed for this development as there is limited site area available for 'soft' stormwater management controls such as grassed conveyance swales, wet swales, filter strips or infiltration based measures. Refer to Table 1 for details of the site areas with respect to water quality.

**Table 1 Water Quality Site Area Breakdown**

Surface Type	Effective TSS Removal	Total Area (ha)	% of Total Area	TSS Removal Over Total Site
Rooftop	100%	0.371	39.1%	39.1%
Asphalt	0%	0.210	22.1%	0.0%
Pedestrian / Hardscape	75%	0.060	6.3%	4.7%
Landscaped	95%	0.309	32.5%	30.9%
		<b>0.950</b>		<b>74.7%</b>

The City of Mississauga has indicated that a cash-in-lieu policy is in effect and could be applied and processed with the development charges for this site.

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### **3.5 Major System and Emergency Overland Flow Routes**

At the detailed design stage, more detailed proposed site grades should be developed to confirm the overland flow routes for design storms greater than the 10-year storm event.

In reviewing the existing topography, it was noted that the site currently drains toward the west and into the roadside ditch running along the east side of Grange Drive and then toward Harbourn Road. The proposed grading for this site will maintain the overall existing overland flow route. The proposed grading will also provide the opportunity to ensure that a positive outlet exists for the site and any upstream areas currently draining through this site. The included Drawing GR1 includes the grades that will be required for this site to have a positive overland flow.

### **3.6 Erosion and Sedimentation Controls**

Details for erosion and sedimentation control during construction will be subject to the City's approval prior to issuance of Building Permit.

During the site grading and servicing works, there is potential for sediment-laden runoff to be directed toward the adjoining properties and municipal streets. Therefore, prior to any grading activity, siltation control fencing must be installed along the site perimeter. Additional measures will include construction of an entrance "mud-mat" on the access to be used during construction. This will minimize mud tracking off-site. Material stockpiles are to be located in appropriate locations. Catchbasin siltation control devices will also be used on existing catchbasins in municipal right-of-ways that may be affected by the construction of this site.

The sequencing of the implementation of the above and additional Erosion and Sediment Control measures is summarized in the following Table 2.

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**Table 2 Erosion and Sediment Control Sequencing**

Activity	Erosion Control Practice
<b>Area Grading</b>	<ul style="list-style-type: none"><li>• Construct and maintain entrance “mud-mat”.</li><li>• Construct and maintain silt fencing around the downstream perimeter of the site.</li><li>• Locate stockpiles away from sensitive areas.</li></ul>
<b>Servicing and Asphalt Works</b>	<ul style="list-style-type: none"><li>• Limit open trench lengths to minimize erosion potential of excavated material.</li><li>• Prevent erosion of material stockpiles.</li><li>• During work stoppages or inclement weather, plug ends of open sewers to prevent downstream sedimentation.</li><li>• Protect catchbasin inlets with filter cloth wrapping.</li></ul>
<b>Maintenance</b>	<ul style="list-style-type: none"><li>• Remove accumulated sediments when depth exceeds 0.30 m.</li><li>• Maintain and repair siltation control fencing as required.</li><li>• Maintain and repair catchbasin sediment controls as required.</li></ul>



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## **4.0 Sanitary Servicing**

### **4.1 Existing Sanitary Sewer Infrastructure**

As-constructed plans and profiles obtained from the Region of Peel records department along with survey for the site, indicate that there is currently dedicated sanitary sewer system adjacent to the site. This sanitary sewer system includes the following:

- A 250mm diameter sewer flowing south east along the south side of Hurontario Road;
- A 1050mm diameter sewer flowing south east along the north side of Grange Drive.

Refer to Figure 4 for a schematic of the existing sanitary sewer infrastructure surrounding the site.

Population density for the existing conditions on the site was calculated based land use for single family residences with greater than 10m frontage (50 persons/hectare). Using the procedure outlined on the Region of Peel's *Public Works Design, Specifications & Procedures Manual – Sanitary Sewer Design Criteria*, the total existing sanitary flows have been calculated as 1 L/s including infiltration. Refer to Appendix B for complete sanitary calculations.

### **4.2 Proposed Sanitary Servicing**

The proposed development has 305 residential units for Tower A, 120 for Tower B, 134 for the podium and 20 townhouses for a total of 579 residential units. Using population equivalents based on land use and the procedure outlined on the Region of Peel's *Public Works Design, Specifications & Procedures Manual – Sanitary Sewer Design Criteria*, the total sanitary design flows have been calculated as 20.3 L/s including infiltration. Complete sanitary flow calculations are included in Appendix B.

The proposed sanitary servicing for this development will consist of a single 300mm diameter connection to an existing manhole on the 1050mm diameter sanitary sewer on Grange Drive. As per conversations with the Region of Peel, there are no objections to this development connecting to this sanitary sewer (refer to Appendix D). Refer to Drawing S1 for details.

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## **5.0 Water Supply and Distribution**

### **5.1 Existing Water Supply and Distribution**

As-constructed plans and profiles obtained from the Region of Peel records department, along with survey for the site, indicate that there is currently a network of watermain in the vicinity of the site. These watermain include the following:

- A 450mm diameter watermain along the south side of Hurontario Street.
- A 300mm diameter watermain along the north side of Hurontario Street.
- A 150mm diameter watermain along the north side of Grange Drive.

For the purpose of confirming general supply and pressures in the vicinity of the site, a hydrant flow test will need to be undertaken at the detailed design stage of this project.

### **5.2 Proposed Water Supply**

It is proposed to have a fire service connection for this development accomplished with the use of a 200mm connection to the existing 450mm watermain along Hurontario Street. The connection will be located near the northeast corner of the site, under the proposed podium. The proposed domestic service will be with a 100mm service connection branching off of the proposed fire connection. Detector assemblies and water meters will be provided internal to the buildings. Refer to Drawing S1 for details about the water service connection.

The maximum domestic demand has been calculated based on a per capita demand of 280 L/cap/day and a population density based on land use. This resulted in an expected domestic flow demand of 14.2 L/s. The maximum firefighting demand was calculated based on floor area of the 6-storey podium which has the largest floor area in adjacent floors. The expected maximum fire flow demand has been calculated as 78.8 L/s. Water demand calculations are included in Appendix C.

Given the proposed height of the proposed buildings, it is expected that booster pumps will be required to deliver adequate supply for sprinklers on the upper building levels. Additional confirmation of the fire and domestic branch sizing and fire flow requirements should be provided by the Mechanical Consultant at the Building Permit stage of approval.

### **5.3 Hydrant Coverage**

Existing hydrants in the vicinity of the subject property include:

- Hydrant on Hurontario Street: a hydrant is located along the north side of Hurontario Street near the northeast corner of the site.
- Hydrant on Grange Drive: a hydrant is located along the south side of Grange Drive near the southeast corner of the site.

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The proposed development will have a fire department Siamese connection located at the northeast corner of the site on Hurontario Street. The location of the Siamese connection will satisfy the Building Code requirement for a hydrant to be located within 45 metres of the connection. Refer to Drawing S1 for additional details.

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## **6.0 Conclusions and Recommendations**

Our analysis and recommendations for servicing of the proposed development is summarized as follows:

### **6.1 Storm Servicing**

- The existing storm sewer infrastructure has the adequate capacity to convey the calculated 240 L/s stormwater runoff resulting from a 10-year storm event.
- At detailed design stage, the potential for rooftop or surface storage should be investigated and implemented.
- At detailed design stage, the proposed site grades confirmed to provide a positive overland flow routes for design storms greater than the 10-year storm event.
- Stormwater quality requirements will be addressed via the City of Mississauga's cash-in-lieu payment policy.

### **6.2 Sanitary Servicing**

- The proposed sanitary service connection is to the existing manhole along the 1050mm diameter sewer on Grange Drive.
- The anticipated post-development sanitary design flow from this development is 20.3L/s and the proposed 200mm diameter connection can adequately convey the proposed flows.
- At detailed design stage, the capacity of the existing 1050mm diameter sewer should be verified.

### **6.3 Water Servicing**

- The proposed development will be serviced from the existing 450mm diameter watermain on Hurontario Street.
- A proposed 200mm connection will service the proposed development.
- A proposed 100mm diameter domestic service will branch from the proposed 200mm service connection to service the site.
- To meet requirements for fire protection, a Siamese connection will be provided within 45 m of an existing fire hydrant.
- The anticipated domestic water demand for this development is approximately 14.2 L/s under maximum hourly demand.
- The anticipated firefighting demand for this development has been calculated at 78.8 L/s.

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## 6.4 Recommendations

The following recommendations are presented:

- The capacity of the existing storm sewer system should be verified at the detailed design stage.
- The assumed allowable storm sewer peak discharge (per 10-year design criteria) presented above should be verified during the City's review;
- Confirmation of the sanitary sewer sizing, fire/domestic watermain branch sizing and fire flow requirements should be provided by the Mechanical Consultant at the Building Permit stage.

Prepared by:

**R. J. Burnside & Associates Limited**



Erick Lopez  
Designer



Vincent J. Dibacco, P.Eng., M.B.A.  
Consulting Engineer



BURNSIDE

[THE DIFFERENCE IS OUR PEOPLE]

---

**Appendix A**  
**Stormwater Management Design**  
**Calculations**

Project:

**2120 Hurontario Street, Mississauga ON**  
**Overall Stormwater Flows**

 Prepared by: E. Lopez  
 Checked by: V. Dibacco  
 Project No: 300 030579  
 Date: February 29, 2012

**Runoff Equation**

$Q = CIA/360$  (c.m./sec)  
 where, C = runoff coefficient  
 I = rainfall intensity (mm/hr)  
 A = area (ha)

**Intensity Equation**

$I = \frac{1010}{(Tc+4.6)^{0.78}}$   
 I = Rainfall Intensity (mm/hr)  
 T = Time of concentration (hour)

**10-Year Storm - Existing Conditions**

Location	From	To	Area (ha)	"c" Value	Tc (min)	Intensity (mm/hr)	Flow (m³/s)	Acumm.	Pipe Dia. (mm)	U/S Invert (m)	D/S Inv (m)	Pipe Length (m)	Slope (%)	Vel. (m/s)	Full Flow Capacity (m³/s)	Spare Capacity (m³/s)	Time in Section (min)
Grange Dr	DA	E. MH 2	1.30	0.75	15.00	99.17	0.27	0.27	-	-	-	-	-	-	-	-	-
	DA	E. MH 2	1.89	0.50	15.00	99.17	0.26	0.26	-	-	-	-	-	-	-	-	-
	E. MH 2	E. MH 1	3.19	0.60	15.00	99.17	0.53	0.53	675	97.68	97.41	53	0.5	1.68	0.60	0.07	0.53
Site Location	E. DICB 1	E. MH C	1.13	0.75	15.00	99.17	0.23	0.23	450	99.30	99.06	31.5	0.75	1.55	0.25	0.02	0.34

**10-Year Storm - Proposed Conditions**

Location	From	To	Area (ha)	"c" Value	Tc (min)	Intensity (mm/hr)	Flow (m³/s)	Acumm. Flow	Pipe Dia. (mm)	U/S Invert (m)	D/S Inv (m)	Pipe Length (m)	Slope (%)	Vel. (m/s)	Full Flow Capacity (m³/s)	Spare Capacity (m³/s)	Time in Section (min)
Grange Dr	DA	P. CB 1	0.72	0.75	15.00	99.17	0.15	0.15	375	100.2	99	80	1.5	1.94	0.21	0.06	0.69
															-		
	DA	P. MH 3	1.30	0.75	15.00	99.17	0.27	0.27	-	-	-	-	-	-	-	-	-
	DA	P. MH 3	1.00	0.50	15.00	99.17	0.14	0.14	-	-	-	-	-	-	-	-	-
	P. MH 3	EX MH 2	3.02	0.67	15.00	99.17	0.56	0.56	675	98.27	97.78	97	0.5	1.67	0.60	0.04	0.97
	DA	EX MH 1	0.40	0.50	15.00	99.17	0.06	0.06	-	-	-	-	-	-	-	-	-
															-		
	EX MH 2	EX MH 1	3.02	0.67	15.97	95.51	0.53	0.59	675	97.68	97.41	53	0.5	1.68	0.60	0.01	0.53
Site	DA	EX DICB 1	0.48	0.9	15.00	99.17	0.12	0.12	-	-	-	-	-	-	-	-	-
	DA	EX DICB 1	0.50	0.9	15.00	99.17	0.12	0.12	-	-	-	-	-	-	-	-	-
	EX DICB 1	EX MH C	0.98	0.9	15.00	99.17	0.24	0.24	450	99.30	99.06	31.5	0.75	1.55	0.25	0.01	0.34



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## **Appendix B**

### **Sanitary Calculations**



Project:

**2120 Hurontario Street, Mississauga ON**  
**Sanitary Servicing**

Prepared by:	E. Lopez
Checked by:	V. Dibacco
Project No:	300 030579
Date:	February 29, 2012

**1.- EXISTING CONDITIONS**
**Population Density**

 Single Family (> 10m frontage)  
 50 persons/ha  
 Therefore;

**Total Population (P) = 51 Persons**
**Peak Sanitary Flow Factor**

$$M = 1 + \frac{14}{4 + (P/1000)^{1/2}}$$

$$M = 4.31$$

**Sanitary Flows**

Total Population (P) =	51	Persons
Per Capita Demand (q) =	302.8	Lpcd
Peaking Factor (M) =	4.3129	
Area (A) =	0.98	ha
Infiltration (I) =	0.00020	m <sup>3</sup> /sec/ha
Infiltration (I) =	0.00021	m <sup>3</sup> /sec
Peak Domestic Flow (Qd) =	0.00098	m <sup>3</sup> /sec
<b>Peak Sanitary Flow (Qd) =</b>	<b>0.001</b>	<b>m<sup>3</sup>/sec</b>
=	<b>1.0</b>	<b>L/sec</b>

**2.- PROPOSED CONDITIONS**
**1.1 - Residential**
**Population Density**

$$\frac{2.7 \text{ ppu} \times (\# \text{ units})}{\text{Area}} = \text{pop/ha}$$

$$\frac{2.70 \text{ ppu} \times 579 \text{ units}}{0.98 \text{ Ha}} = 1595 \text{ pop/ha}$$

**Total Population (P) = 1563 Persons**
**Sanitary Flows**

(As per STD. DWG 2-5-2)

**Population Peak Flow (m<sup>3</sup>/sec)**

1400	0.0181	
1563	0.0201	
1500	0.0193	
Infiltration (I) =	0.00020	m <sup>3</sup> /sec/ha
Infiltration (I) =	0.00020	m <sup>3</sup> /sec
<b>Peak Sanitary Flow (Qd) =</b>	<b>0.02</b>	<b>m<sup>3</sup>/sec</b>
=	<b>20.26</b>	<b>L/sec</b>

**1.1 - Retail**
**Population Density**

Commercial Area =	935	m <sup>2</sup>
Equivalent Population =	1.1	Persons/ 100 m <sup>2</sup>
Commercial Population (P) =	10	Persons
Per Capita Demand (q) =	302.8	L/Cap/day
<b>Retail Sanitary Flows (QR) =</b>	<b>0.00</b>	<b>m<sup>3</sup>/sec</b>
=	<b>0.04</b>	<b>L/s</b>
<b>Total Sanitary Flow (Q) =</b>	<b>0.02</b>	<b>m<sup>3</sup>/sec</b>
=	<b>20.30</b>	<b>L/s</b>

Project:

**2120 Hurontario Street, Mississauga ON**  
*Sanitary Servicing*

Prepared by:	E. Lopez
Checked by:	V. Dibacco
Project No:	300 030579
Date:	February 29, 2012

Location	From	To	Area (ha)	Density (ppha)	Population	Residential Sewage Flow (L/s)	Retail Sewage Flow (L/s)	Infiltration Flow (L/s)	Total Sewage Flow (L/s)	Pipe Dia. (mm)	U/S Invert (m)	D/S Inv (m)	Pipe Length (m)	Slope (%)	Vel. (m/s)	Full Flow Capacity (L/s)	Spare Capacity (L/s)
On-Site	P. MH 1	E. MH	0.95	1595	1574	20.06	0.04	0.20	20.30	300	97.44	97.3	7	2.0	1.93	140	119.70



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## **Appendix C**

### **Water Demand Calculations**

Project:

**2120 Hurontario Street, Mississauga ON**  
**Water Demand Calculations**

Prepared by:	E. Lopez
Checked by:	V. Dibacco
Project No:	300 030579
Date:	February 29, 2012

**Fire Flow Calculation**

1 
$$F = 220C\sqrt{A}$$

Where F = Fire flow in L/m

C = Construction type coefficient

= 0.6 Fire Resistant Construction (fully protected frame, floors, roof)

A = Total floor area in sq.m. excluding basements, includes garage

= 1,152 sq.m. Assuming vertical openings and exterior communications are properly protected

**6 - Storey Podium**

Typical Flor Area =	768	m <sup>2</sup>
A =	1,152	m <sup>2</sup>

**22 - Storey Tower B**

Typical Flor Area =	675	m <sup>2</sup>
A =	1,013	m <sup>2</sup>

**31 - Storey Tower A**

Typical Flor Area =	717	m <sup>2</sup>
A =	1,076	m <sup>2</sup>

**Townhouses**

Typical Flor Area =	670	m <sup>2</sup>
A =	1,005	m <sup>2</sup>

Using largest Area;

F = 4,480.23 L/min

Round to nearest 500 l/min

F = 4,500 L/min

 2 **Occupancy Reduction**

25% Reduction for Non-Combustible

Reduction = 1125 L/min

F = 3,375 L/min

 3 **Sprinkler Reduction**

25% Reduction for NFPA Sprinkler System

Reduction = 844 L/min

 4 **Separation Charge**

5% North Side 30.1m to 45m

25% South Side 0m to 3m

25% East Side 0m to 3m

10% West Side 20.1m to 30m

65%	Total Separation Charge,	2194	L/min
-----	--------------------------	------	-------

Note: Maximum Total Separation Charge is 75%

F =	3,375	-	844	+	2194	=	4,725.00 L/min
F =	79	L/s					
F =	1247	USGPM					



## CALCULATION SHEET

Project:

**2120 Hurontario Street, Mississauga ON**

*Water Demand Calculations*

Prepared by: E. Lopez

Checked by: V. Dibacco

Project No: 300 030579

Date: February 29, 2012

### Domestic Flow Calculations

Per Capita Demand= 280 L/cap/day  
Population= 1563 Persons  
Average Day Demand = 5.07 L/s  
= 80 USGPM

Max. Daily Demand Peaking Factor = 2.0  
Max. Daily Demand = 10.13 L/s  
= 160 USGPM

OR

Max. Hourly Demand Peaking Factor = 3.0  
Max. Hourly Demand = 15.20 L/s  
= 241 GPM

**Therefore,**

**Domestic Flow= 15.2 L/s = 241 USGPM**

**Fire Flow= 78.8 L/s = 1247 USGPM**



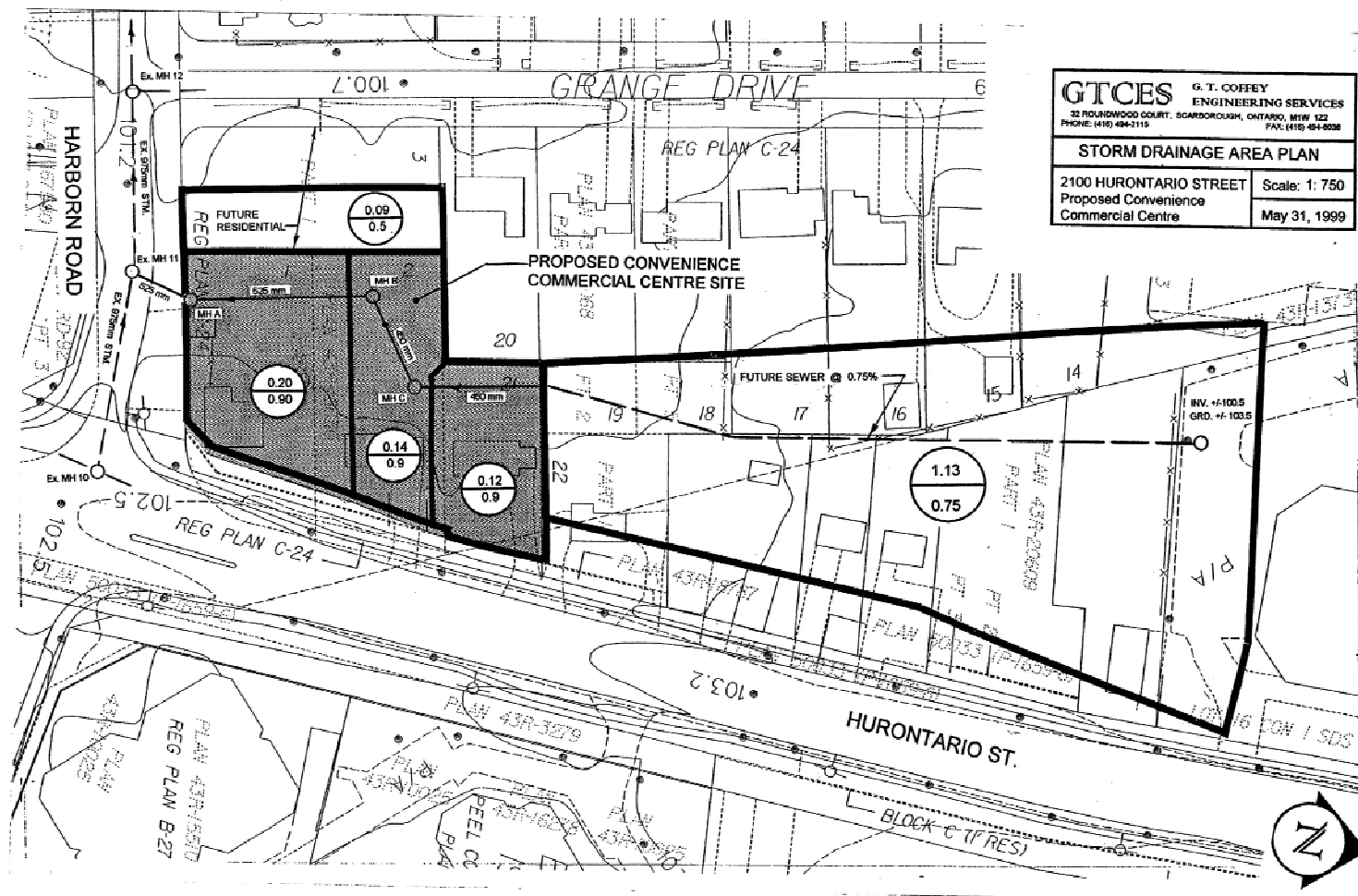
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## **Appendix D**

### **Supporting Documentation**



**GTCS** G. T. COFFEY  
ENGINEERING SERVICES  
32 ROUNDWOOD COURT, SCARBOROUGH, ONTARIO, M1W 1Z2  
PHONE: (416) 494-2115 FAX: (416) 494-8038

**STORM DRAINAGE AREA PLAN**

2100 HURONTARIO STREET Scale: 1:750  
Proposed Convenience Commercial Centre May 31, 1999

SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.
REVISIONS					
DATE	DETAILS				INIT.

#### LEGEND

0.00 AREA IN HECTARES  
0.00 RUN-OFF COEFFICIENT

○ STORM MANHOLE

#### GENERAL NOTES

B.M. No. 524 ELEV. 96.009m (BEFORE RE-ADJUSTMENT)

SOIL INFORMATION IS FROM "A SOIL INVESTIGATION FOR PROPOSED CONVENIENCE COMMERCIAL CENTRE", REPORT DATED MAY 1999 BY SOIL-ENG LIMITED



DESIGNED BY  
*G.T. Coffey* CHKD

APPROVED BY

**G.T. COFFEY ENGINEERING SERVICES**  
32 ROUNDWOOD COURT, SCARBOROUGH, ONTARIO M1W 1Z2  
PHONE: (416) 494-2115 FAX: (416) 494-8038

**PROPOSED CONVENIENCE  
COMMERCIAL CENTRE**  
PART OF LOTS 1, 2 AND 21, R.P. C-24  
AND PART OF LOT 16, CON 1, S.D.S.  
2100 HURONTARIO STREET



**STORM DRAINAGE PLAN  
AREA PLAN C-36998**

SCALE HOR. 1:250 VERT. 1:50	AREA Z-15	PROJECT No. 9805
DRAWN BY G.J.	CHECKED BY G.C.	PLAN No. D-1
DATE AUGUST/99	SHEET 1 OF 1	



DI-11-040M - proposed sanitary sewer connection to the Grange  
Sniatenchuk, Bernadette

to:

'erick.lopez@rjburnside.com'

01/23/2012 12:22 PM

Hide Details

From: "Sniatenchuk, Bernadette" <Bernadette.Sniatenchuk@peelregion.ca>

To: "'erick.lopez@rjburnside.com'" <erick.lopez@rjburnside.com>

Hi Erick,

As per our meeting on Friday January 20<sup>th</sup>, I spoke with my supervisor, Carol Clark, and we don't have any objections to this development connecting to the 1050mm diameter sanitary sewer on The Grange Drive. The Development must connect directly into the manhole.

Regarding the hydrant flow tests – I have contact someone in the Water operations team to find out if there are limitations to when the tests can be performed.

Regarding the water pressures – I have contacted the staff that work on the water model to find out if this information is available.

On both issues I'm waiting for a response and will contact you when I get more info. If you have any other questions please contact me.

Have a nice day!

**Bernadette Sniatenchuk**

Technical Analyst | Development Engineering

*Development Services, Public Works, Region of Peel*

*10 Peel Centre Drive, Suite B, 4th Floor*

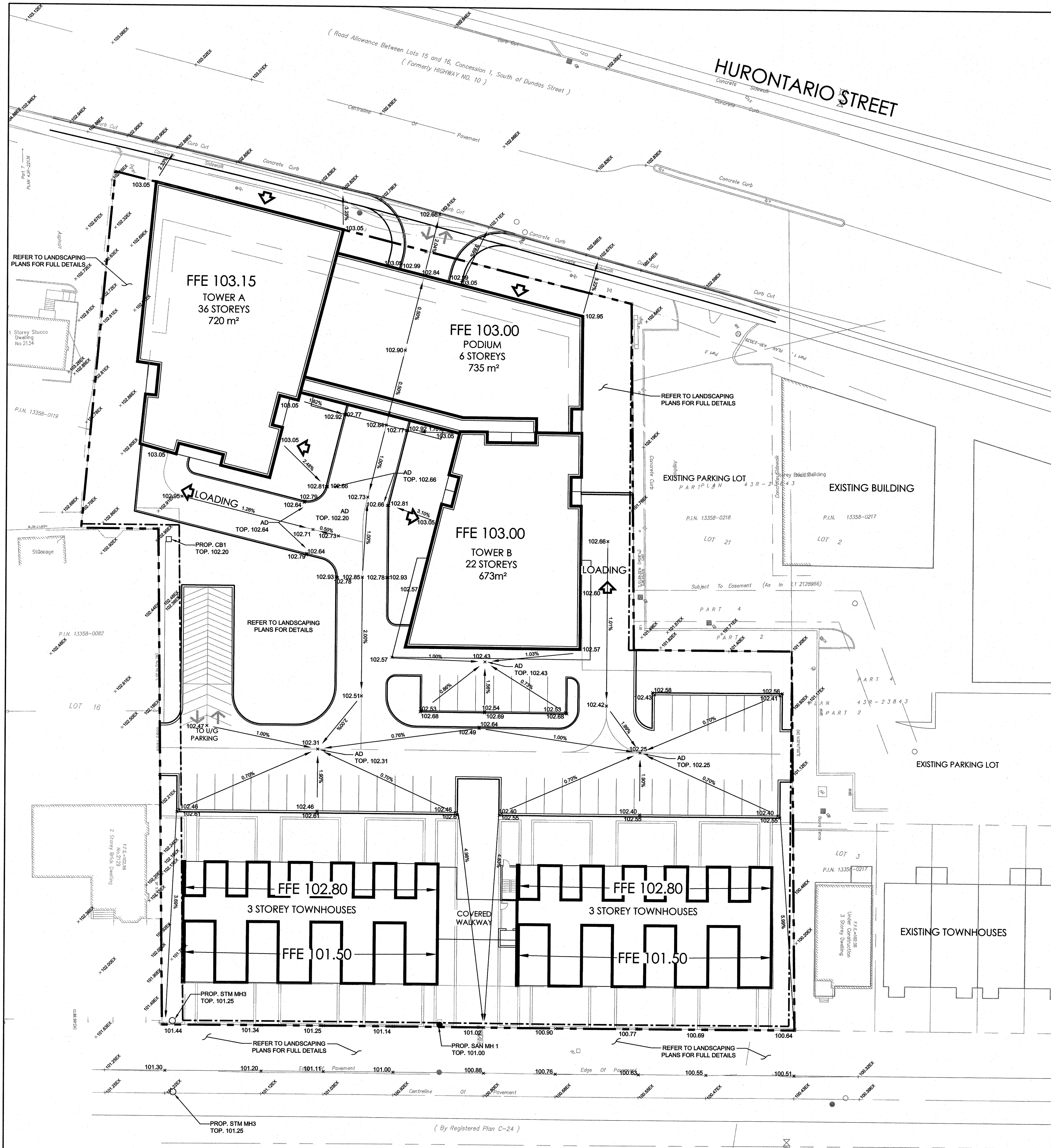
*Brampton, On L6T 4B9*

*e-mail: bernadette.sniatenchuk@peelregion.ca*

*Phone: 905-791-7800, ext.7920*

*Fax: 905-791-1442*





GENERAL NOTES:

1. ALL WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH THE APPLICABLE HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
2. ALL THE CONSTRUCTION WORK FOR THIS PROJECT SHALL COMPLY WITH THE STANDARD DRAWINGS AND SPECIFICATIONS OF THE CITY OF MISSISSAUGA, REGIONAL MUNICIPALITY OF PEEL, ONTARIO BUILDING CODE AND THE ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS. WHERE CONFLICTS EXIST BETWEEN THESE STANDARDS CLARIFICATION IS TO BE SOUGHT FROM THE ENGINEER.
3. THE CONTRACTOR IS ADVISED THAT WORKS BY OTHERS MAY BE ONGOING DURING THE PERIOD OF THIS CONTRACT. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES WITH ALL OTHER CONTRACTORS AND PREVENT CONSTRUCTION CONFLICTS.
4. THE INFORMATION SHOWN FOR EXISTING UTILITIES AND SERVICES WAS PROVIDED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES PRIOR TO AND DURING CONSTRUCTION. ALL EXISTING UTILITIES MUST BE LOCATED AND VERIFIED BY EACH UTILITY AND / OR THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK. ANY VARIANCE IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER. LOST TIME DUE TO FAILURE OF THE CONTRACTOR TO CONFIRM UTILITY AND SERVICES LOCATIONS AND NOTIFY THE ENGINEER OF CONFLICTS PRIOR TO CONSTRUCTION WILL BE AT THE CONTRACTORS EXPENSE.
5. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL REQUIRED PERMITS (OTHER THEN BUILDING PERMITS) REQUIRED TO START CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE CONSTRUCTION ACTIVITIES WITH MISSISSAUGA TRANSIT, MALL MANAGEMENT AND OPERATIONS AND THE REQUIRED RELEVANT MUNICIPAL AUTHORITIES. LOST TIME DUE TO FAILURE TO DO SO WILL BE AT THE CONTRACTORS EXPENSE.

SITE GRADING:

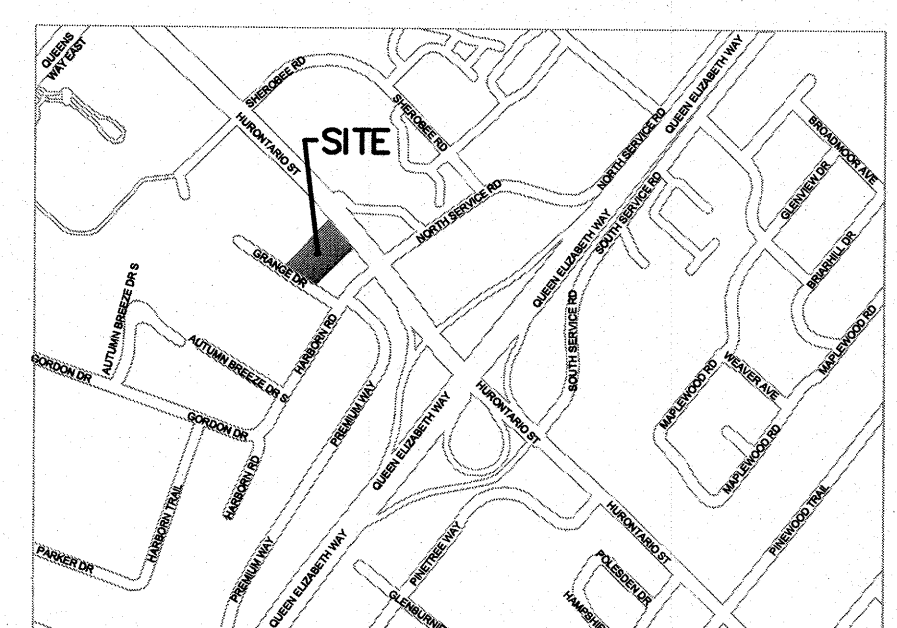
1. ALL DISTURBED GRASSED AREAS SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER WITH SOD ON MIN 100mm TOPSOIL. THE RELOCATION OF TREES AND SHRUBS SHALL BE SUBJECT TO APPROVAL BY THE PROJECT LANDSCAPE ARCHITECT OR ENGINEER.
2. ALL DISTURBED HARD SURFACE AREAS TO BE RESTORED TO ORIGINAL CONDITION ON BETTER.
3. ALL GRANULAR BASE AND SUB-BASE MATERIALS SHALL BE GRADED AND COMPACTED AS PER THE GEOTECHNICAL REPORT.
4. THE PAVEMENT STRUCTURE SHALL BE CONSTRUCTED OF THE FOLLOWING MINIMUM THICKNESSES OF MATERIALS AS PER THE GEOTECHNICAL REPORT:  
  
LIGHT DUTY ASPHALT  
60mm HL3 SURFACE ASPHALT  
150mm - GRANULAR "A" BASE COURSE  
250mm - GRANULAR "B" TYPE 1 SUB BASE  
  
HEAVY DUTY ASPHALT  
40mm HL3 SURFACE ASPHALT  
60mm HL8 BASE ASPHALT  
150mm - GRANULAR "A" BASE COURSE  
350mm - GRANULAR "B" TYPE 1 SUB BASE
5. PROVIDE SUBDRAINS, MINIMUM LENGTH OF 3.0m, EXTENDING FROM ALL CATCHBASINS AND CATCHBASIN MANHOLES TO DRAIN THE GRANULAR SUB-BASE LAYER.
6. ALL BARRIER CURB WITHIN THE SITE TO BE CONSTRUCTED AS PER OPSD 600.110, UNLESS OTHERWISE SPECIFIED.
7. TRENCH BACKFILL WITHIN THE RIGHT OF WAY SHALL BE UNSHRINKABLE FILL WHERE REQUIRED BY THE MUNICIPALITY AND SHALL EXTEND TO THE BASE OF ASPHALT.
8. INSPECTIONS: ALL WORK ON THE MUNICIPAL RIGHT OF WAY AND EASEMENTS TO BE INSPECTED BY THE MUNICIPALITY PRIOR TO BACKFILLING. ALL WORK RELATING TO WATERMAINS AND SEWERS TO BE INSPECTED BY THE MUNICIPALITY WHEN REQUIRED BY THE MUNICIPALITY.
9. REFER TO SITE PLAN FOR DIMENSIONS AND SITE DETAILS.
10. STEP JOINTS ARE TO BE USED WHERE PROPOSED ASPHALT MEETS EXISTING ASPHALT AS PER DETAIL ON DRAWING D1. ALL JOINTS MUST BE SEALED.
11. TRANSITIONS WITHIN THE SUBGRADE WITHIN 1.2m FROM THE TOP OF PAVEMENT SHOULD INCLUDE 3H:1V TRANSITIONS.
12. EMBANKMENTS TO BE SLOPED AT MAX. 3:1, UNLESS OTHERWISE SPECIFIED.
13. ALL PAVEMENT MARKING, LINE PAINTING, DIRECTIONAL LINES/ARROWS ETC. SHALL BE PLACED IN ACCORDANCE WITH THE ARCHITECTURAL SITE PLAN OR THE OWNERS TRAFFIC ENGINEERING CONSULTANTS DRAWINGS. LINE PAINTING AND DIRECTIONAL SYMBOLS SHALL BE APPLIED WITH A MINIMUM OF TWO COATS OF ORGANIC SOLVENT BASED PAINT IN ACCORDANCE WITH OPSD 1712.
14. WHERE APPLICABLE THE CONTRACTOR IS TO SUBMIT SHOP DRAWINGS FOR THE RETAINING WALL (INCLUDE RAILINGS IF APPLICABLE) TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. SHOP DRAWINGS MUST BE SITE SPECIFIC, SIGNED AND SEALED BY A LICENSED STRUCTURAL ENGINEER. THE CONTRACTOR WILL ALSO BE REQUIRED TO SUPPLY STRUCTURAL AND GEOTECHNICAL CERTIFICATION OF THE AS-CONSTRUCTED RETAINING WALL TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE.
15. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER 1 (ONE) SET OF AS CONSTRUCTED SITE SERVICING, GRADING, AND SITE ELECTRICAL DRAWINGS. BASED ON A SURVEY PREPARED BY AN O.L.S.

ELEVATION NOTE:

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO THE CITY OF MISSISSAUGA BENCH MARK NO. 524, HAVING AN ADJUSTED ELEVATION OF 95.89 METERS.

BEARING NOTE:

BEARINGS ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHWEST LIMIT OF HURONTARIO STREET, HAVING A BEARING OF N 24° 30' 00" W ACCORDING TO M.T.C. PLAN P-1659-6 (INSTRUMENT NO. 50033).



KEY PLAN

---	PROPERTY BOUNDARY
---	LIMIT OF UNDERGROUND PARKING
---	EXISTING SPOT ELEVATION
---	PROPOSED SPOT ELEVATION
---	EXISTING SANITARY MANHOLE
---	EXISTING STORM MANHOLE
---	EXISTING CATCHBASIN
---	EXISTING HYDRANT
---	EXISTING VALVE & BOX
---	EXISTING LIGHT STANDARD
---	PROPOSED SANITARY MANHOLE
---	PROPOSED STORM MANHOLE
---	PROPOSED CATCHBASIN
---	PROPOSED ENTRANCE
---	PROPOSED VEHICULAR ENTRANCE/EXIT

SERVICE DATA

SERVICE	DATE	INIT.	SERVICE	DATE	INIT.

REVISIONS

DATE	DETAILS	INIT.

MARCH 1, 2012	SUBMIT FOR REZONING APPLICATION	E.L.
FIRST DATE: 12/03/01	SECOND DATE:	INTERIM DATE:
		PRE-SER DATE:
		FINAL DATE:

SUBMISSION

	DESIGN BY
	APPROVED BY

**2120 HURONTARIO STREET**  
PART OF LOT 16 CON 1 SOUTH OF DUNDAS ST &  
LOTS 14 TO 20 INCLUSIVE AND PART OF LOT 22  
2114 - 2130 HURONTARIO STREET  
2095 - 2121 GRANGE DRIVE  
MISSISSAUGA, ONTARIO

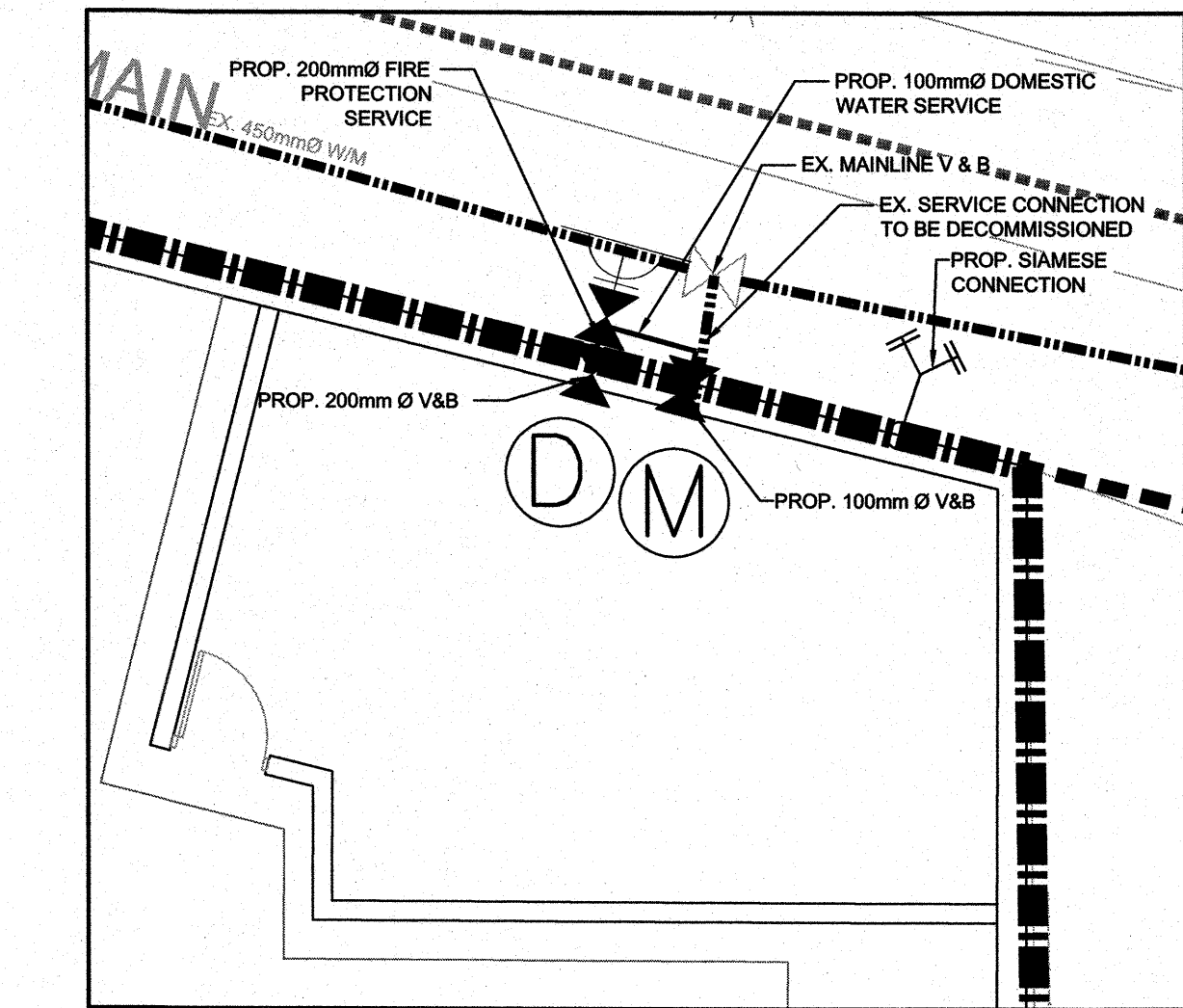
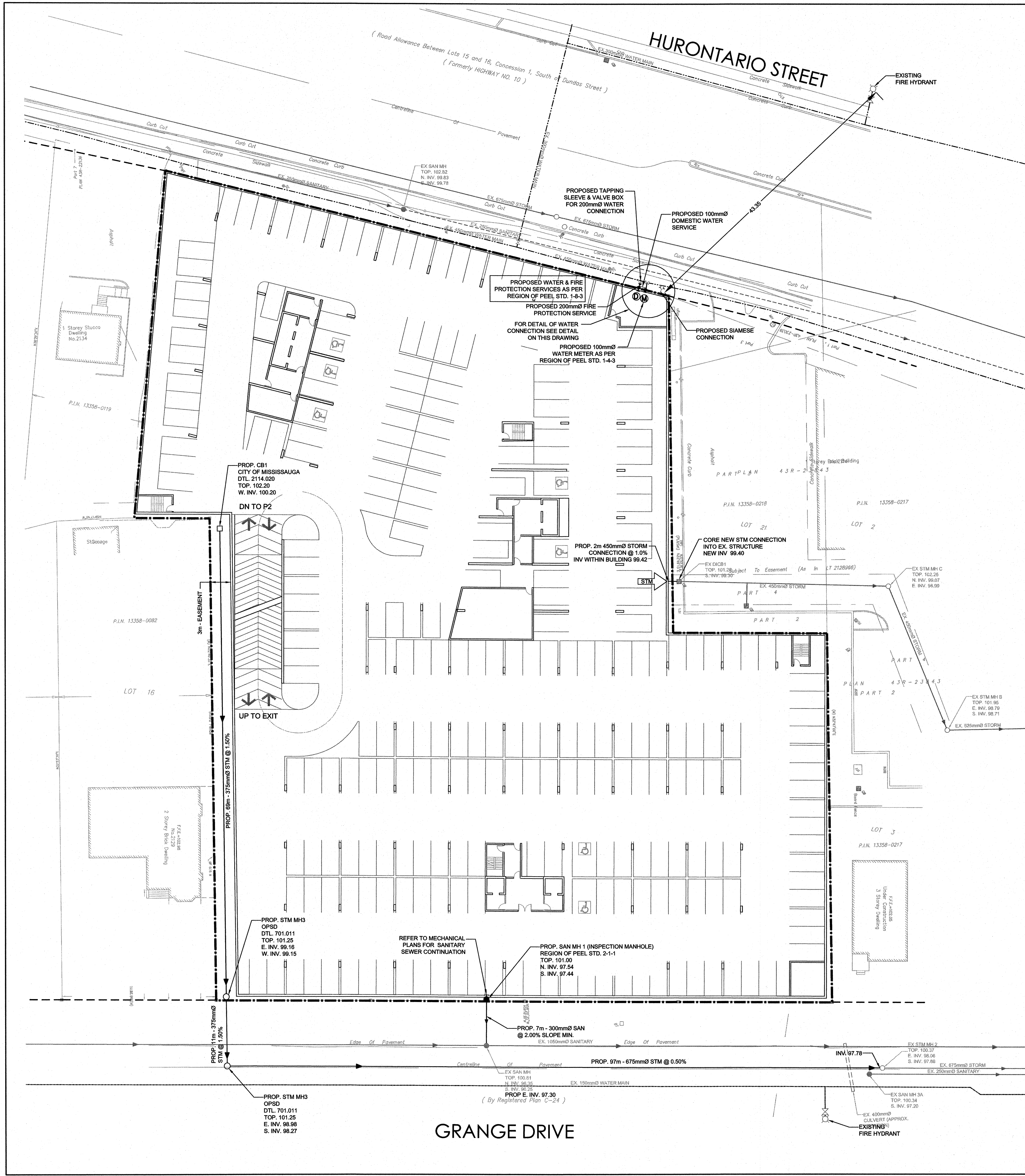
**BURNSIDE**  
R.J. Burnside & Associates Limited  
6950 Creditview Road, Unit 2  
Mississauga, Ontario, L5N 8R9  
Telephone (905) 821-1800  
Fax (905) 821-1809  
Web www.rjburnside.com

**MISSISSAUGA**  
Transportation and Works

SITE GRADING PLAN

SCALE	1:300	AREA	Z-15	CITY FILE:
C.A.D.D. BY	P.P./E.L.	CHECKED BY	V.J.D.	PROJECT No. 300 30579
DATE	MARCH 2012	SHEET	1 OF 1	PLAN No.
				G1





WATER SERVICE CONNECTION

SCALE: 1/75

GENERAL NOTES:

1. ALL WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH THE APPLICABLE HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
2. ALL THE CONSTRUCTION WORK FOR THIS PROJECT SHALL COMPLY WITH THE STANDARD DRAWINGS AND SPECIFICATIONS OF THE CITY OF MISSISSAUGA, REGIONAL MUNICIPALITY OF PEEL, ONTARIO BUILDING CODE AND THE ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS. WHERE CONFLICTS EXIST BETWEEN THESE STANDARDS CLARIFICATION IS TO BE SOUGHT FROM THE ENGINEER.
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WATER NOTES:

1. ALL MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
2. WATERMAIN AND/OR WATER SERVICE MATERIALS 100mm (4") AND LARGER MUST BE PVC DR18.
3. WATERMAINS AND/OR WATER SERVICES ARE TO HAVE A MINIMUM COVER OF 1.7m (5'6") WITH A MINIMUM HORIZONTAL SPACING OF 1.2m (4") FROM THEMSELVES AND ALL OTHER UTILITIES.
4. PROVISIONS FOR FLUSHING WATER LINES PRIOR TO TESTING ETC. MUST BE PROVIDED WITH AT LEAST A 50mm (2") OUTLET ON 100mm (4") AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE END. THEY MUST ALSO BE HOSED OR PIPED TO ALLOW THE WATER TO DRAIN ON TO A PARKING LOT OR DOWN A DRAIN. ON FIRE LINES, FLUSHING OUTLET TO BE 100mm (4") DIAMETER MIN. ON A HYDRANT.
5. ALL CURB STOPS TO BE 3.0m (10') OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
6. HYDRANT AND VALVE SET TO REGION STANDARD 1-6-1 DIMENSION A AND B, 0.7m (2') AND 0.9m (3') AND TO HAVE PUMPER NOZZLE.
7. WATERMAINS TO BE INSTALLED TO GRADES AS SHOWN ON APPROVED SITE PLAN. COPY OF GRADE SHEET MUST BE SUPPLIED TO INSPECTOR PRIOR TO COMMENCEMENT OF WORK, WHERE REQUESTED BY INSPECTOR.
8. WATERMAINS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3m (12") OVER AND 0.5m (20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
9. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM EXISTING SYSTEMS.
10. ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION.

STORM AND SANITARY SEWERS:

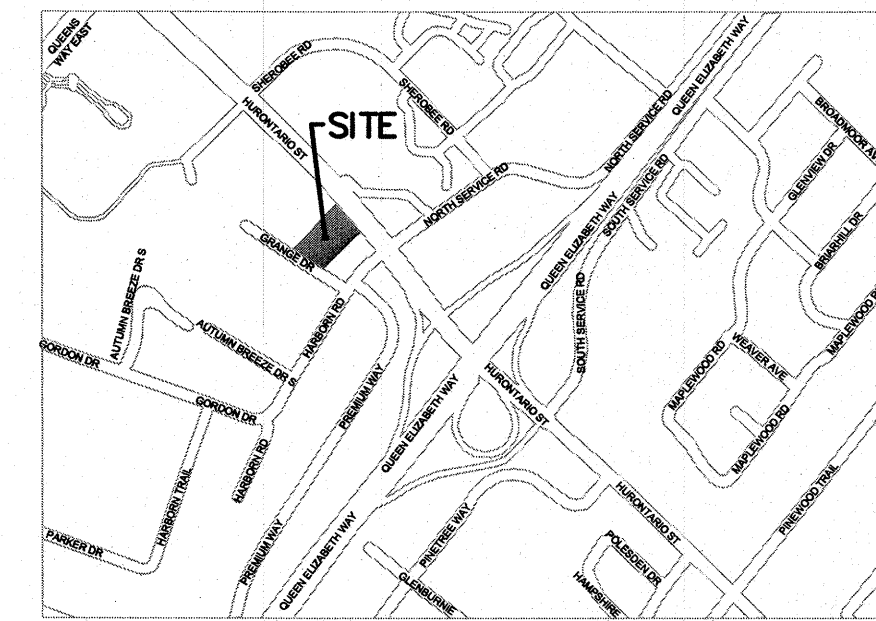
1. MANHOLES SHALL BE AS PER OPSD 701.010, 701.011, 701.012; FRAMES AND COVERS SHALL BE AS PER OPSD 401.010. SAFETY PLATFORMS TO BE INSTALLED WHERE DEPTH EXCEEDS 5.0m.
2. SINGLE CATCHBASINS SHALL BE AS PER OPSD 705.010, WITH FRAMES AND COVERS AS PER OPSD 400.020. DOUBLE CATCHBASINS SHALL BE AS PER OPSD 705.020.
3. CONCRETE PIPE SEWER BEDDING SHALL BE CLASS 'B' AS PER OPSD 802.030. PVC PIPE SEWER BEDDING SHALL BE CLASS 'B' AS PER OPSD 802.030 TO TOP OF SEWER. NATIVE BACKFILL TO BE COMPACTED TO A MIN. 98% STANDARD PROCTOR DENSITY, WITH A MINIMUM 300mm SAND COVER OVER PIPE.
4. ALL STORM SEWER PIPES UP TO 450mm DIA. SHALL BE PVC SDR-35 OR APPROVED EQUIVALENT. ALL STORM SEWER PIPES 525mm DIA. AND LARGER SHALL BE CONCRETE AND EQUAL TO C.S.A. SPECIFICATIONS A257.2 REINFORCED CLASS 65-D OR LATEST AMENDMENT UNLESS OTHERWISE SPECIFIED.
5. ALL SANITARY PVC SEWER PIPES SHALL BE SDR-35 EQUAL CSA SPECIFICATIONS B182.2-M1990 OR LATEST AMENDMENT UNLESS OTHERWISE NOTED.
6. ALL MANHOLE, CATCH BASIN AND SERVICE EXCAVATIONS TO BE BACKFILLED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
7. ALL CATCH BASINS AND CATCH BASIN MANHOLES ARE TO INCLUDE SUBDRAIN TREATMENT AS PER DETAIL ON DRAWING D1.
8. ALL BLIND CONNECTIONS TO MATCH THE SPRINGLINE OF THE CATCH BASIN LEAD TO THE SPRINGLINE OF THE STORM PIPE. OTHERWISE INSTALL THE CATCH BASIN LEAD AT A MAXIMUM 2.00% AND DROP INTO PIPE.
9. UNLESS NOTED OTHERWISE, CATCHBASIN LEADS SHALL BE 200mm DIA AT MINIMUM 1.00% TO MAXIMUM 5.00% SLOPE THE CONTRACTOR IS TO PROVIDE RISERS AS REQUIRED.
10. CATCHBASIN INVERTS TO BE 1.5m BELOW GRADE UNLESS OTHERWISE SPECIFIED.
11. ALL MAHOLES TO BE BENCHMARKED IN ACCORDANCE WITH OPSD 701.021.
12. THE CONTRACTOR IS TO PROVIDE CCTV CAMERA INSPECTIONS OF ALL SANITARY AND STORM SEWERS, INCLUDING PICTORIAL REPORT, TWO (2) CD COPIES IN A FORMAT SATISFACTORY TO THE ENGINEER. ALL SEWERS ARE TO BE FLUSHED PRIOR TO CAMERA INSPECTION.

ELEVATION NOTE

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO THE CITY OF MISSISSAUGA BENCH MARK NO. 524, HAVING AN ADJUSTED ELEVATION OF 95.89 METERS.

BEARING NOTE

BEARING ARE ASTRONOMIC AND ARE REFERRED TO THE SOUTHWEST LIMIT OF HURONTARIO STREET, HAVING A BEARING OF N 24° 30' 00" W ACCORDING TO M.T.C. PLAN P-1659-6 (INSTRUMENT NO. 50033).



KEY PLAN

N.T.S.

---	PROPERTY BOUNDARY
---	EXISTING STORM SEWER
---	PROPOSED STORM SEWER
---	EXISTING SANITARY SEWER
---	PROPOSED SANITARY SEWER
---	EXISTING WATER MAIN
---	PROPOSED WATER MAIN
---	EXISTING SANITARY MANHOLE
---	EXISTING STORM MANHOLE
---	EXISTING HYDRANT
---	EXISTING VALVE & BOX
---	EXISTING LIGHT STANDARD
---	PROPOSED SANITARY MANHOLE
---	PROPOSED CATCHBASIN
---	PROPOSED CATCHBASIN MANHOLE
---	PROPOSED DETECTOR CHECK VALVE
---	PROPOSED WATER METER
---	SIAMESE CONNECTION
---	PROPOSED HYDRANT
---	PROPOSED TAPPING SLEEVE & VALVE BOX
---	PROPOSED VALVE & BOX

SERVICE DATA

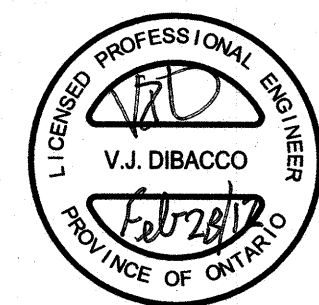
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REVISIONS

DATE	DETAILS	INIT.

MARCH 1, 2012	SUBMIT FOR REZONING APPLICATION	E.L.
FIRST DATE: 12/03/01	SECOND DATE:	INTERIM DATE:
		PRE-SER DATE:
		FINAL DATE:

SUBMISSION



DESIGN BY

APPROVED BY

2120 HURONTARIO STREET

PART OF LOT 16 CON 1 SOUTH OF DUNDAS ST & LOTS 14 TO 20 INCLUSIVE AND PART OF LOT 22 2114 - 2130 HURONTARIO STREET 2095 - 2121 GRANGE DRIVE MISSISSAUGA, ONTARIO



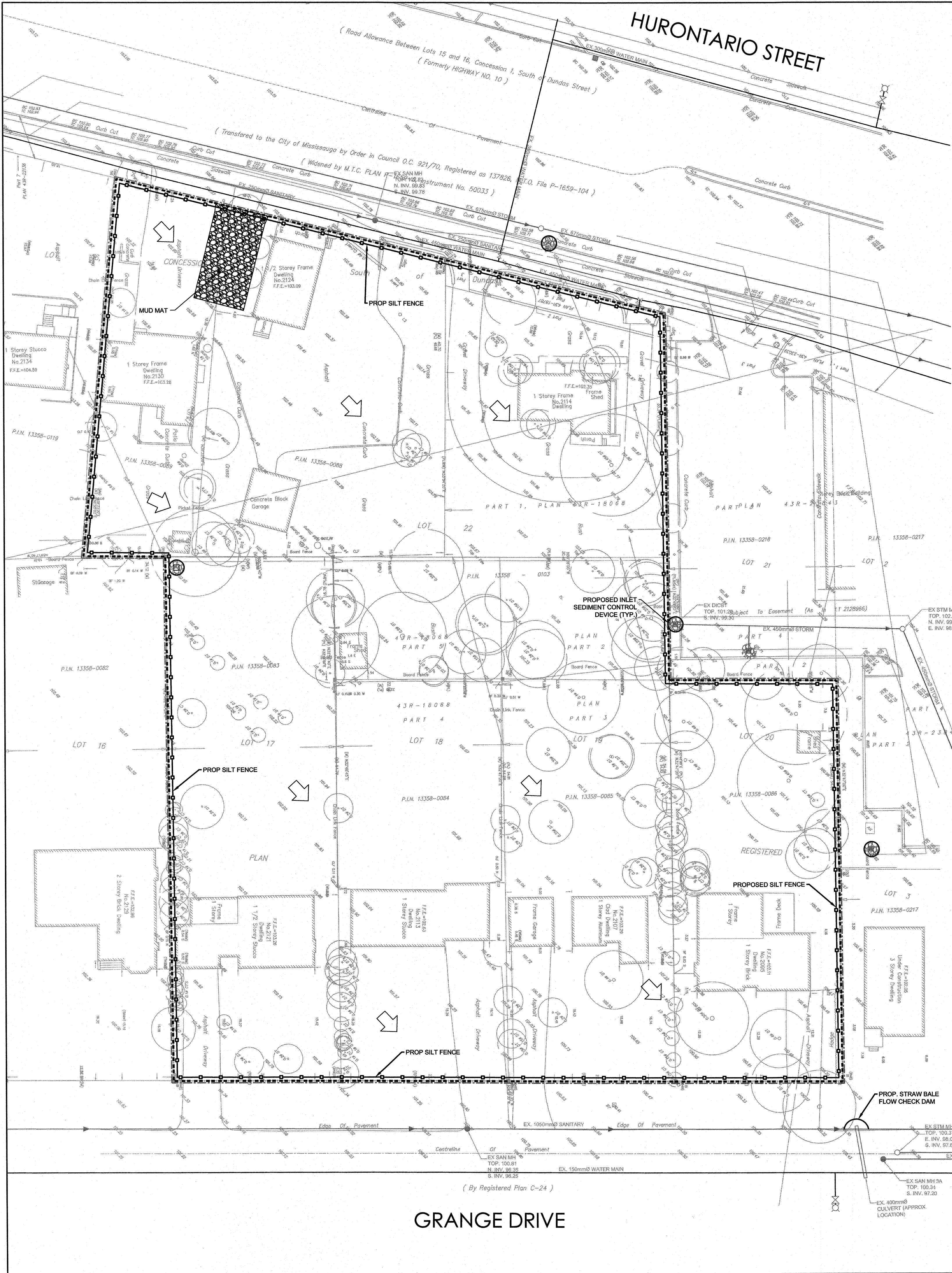
R.J. Burnside & Associates Limited  
6990 Creditview Road, Unit 2  
Mississauga, Ontario, L5N 8R9  
telephone (905) 821-1800  
fax (905) 821-1809  
web www.rjburnside.com



SITE SERVICING PLAN

SCALE	1:300	AREA	Z-15	CITY FILE:	PROJECT No. 300 30579
C.A.D.D. BY	P.P./E.L.	CHECKED BY	V.J.D.	PLAN No.	
DATE	MARCH 2012	SHEET	1 OF 1		S1



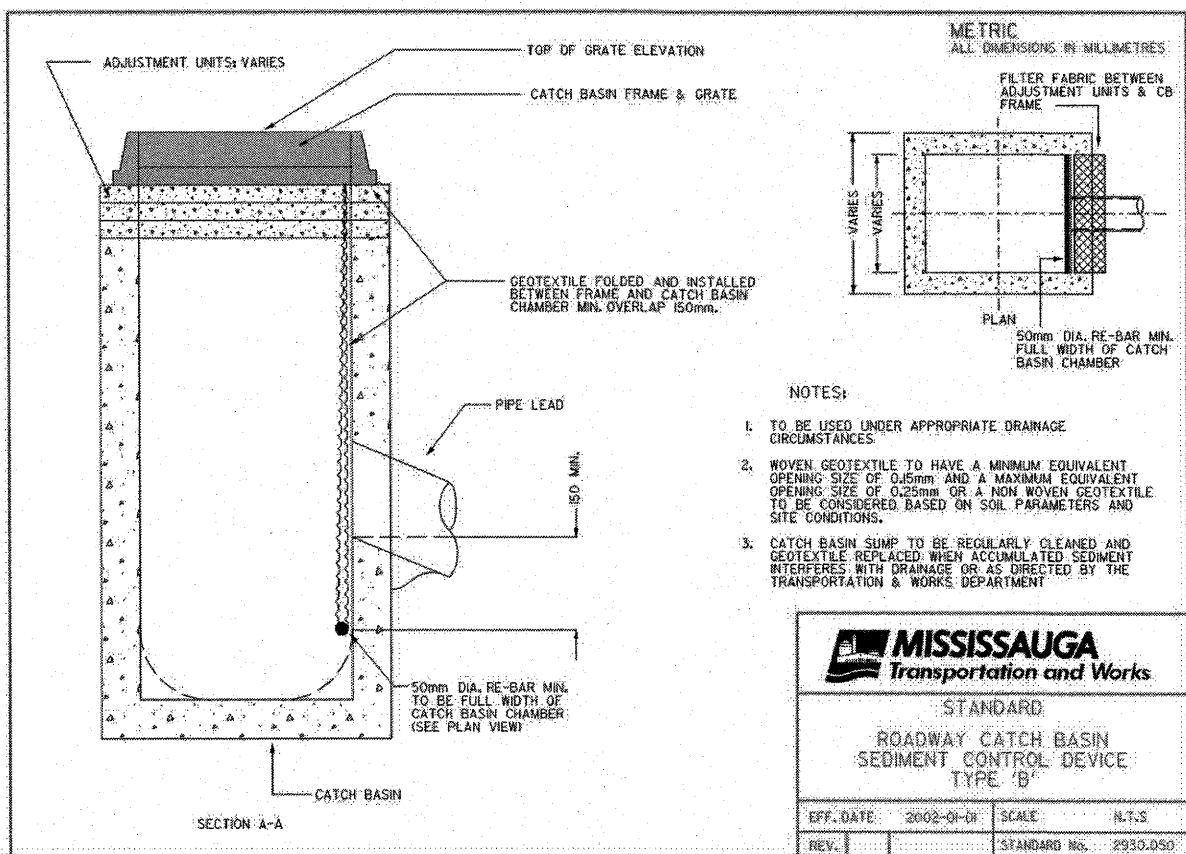
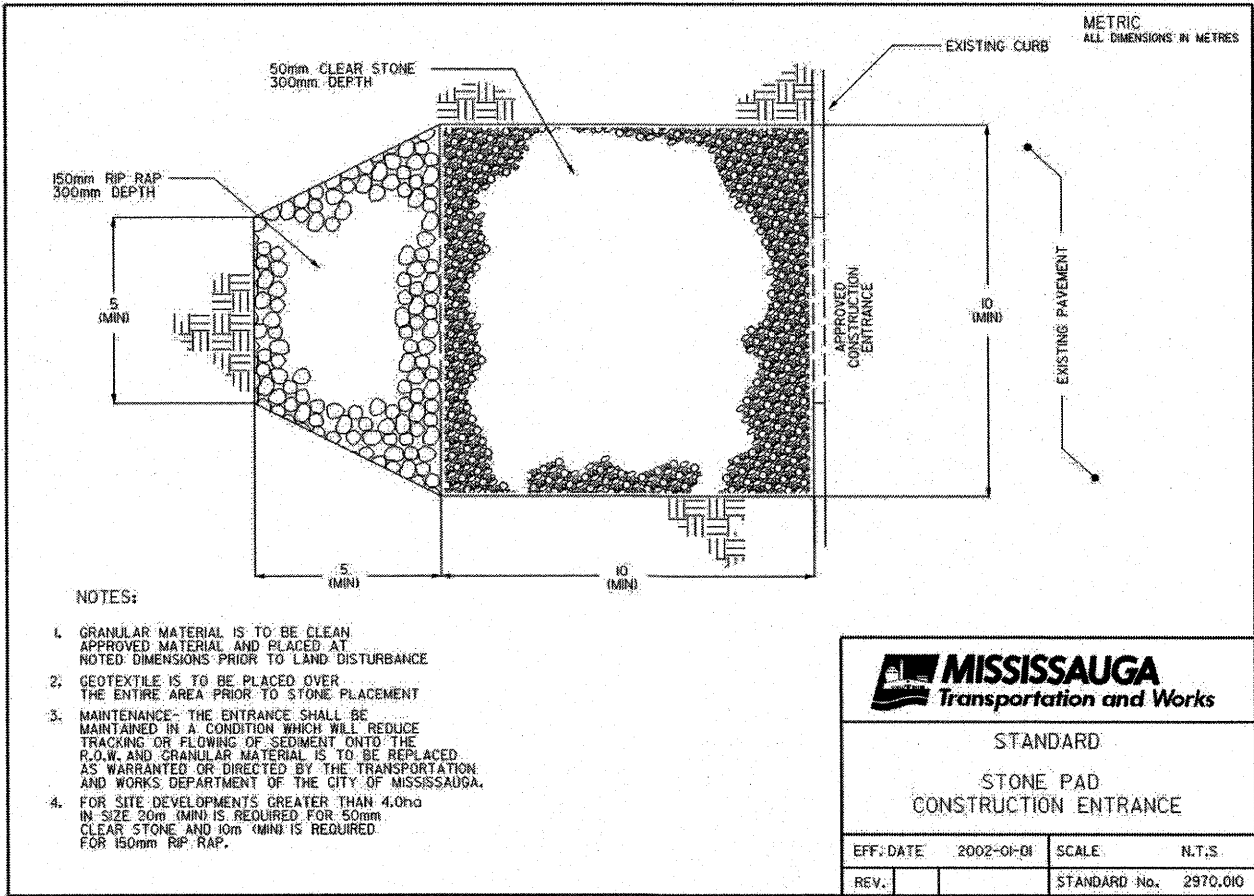
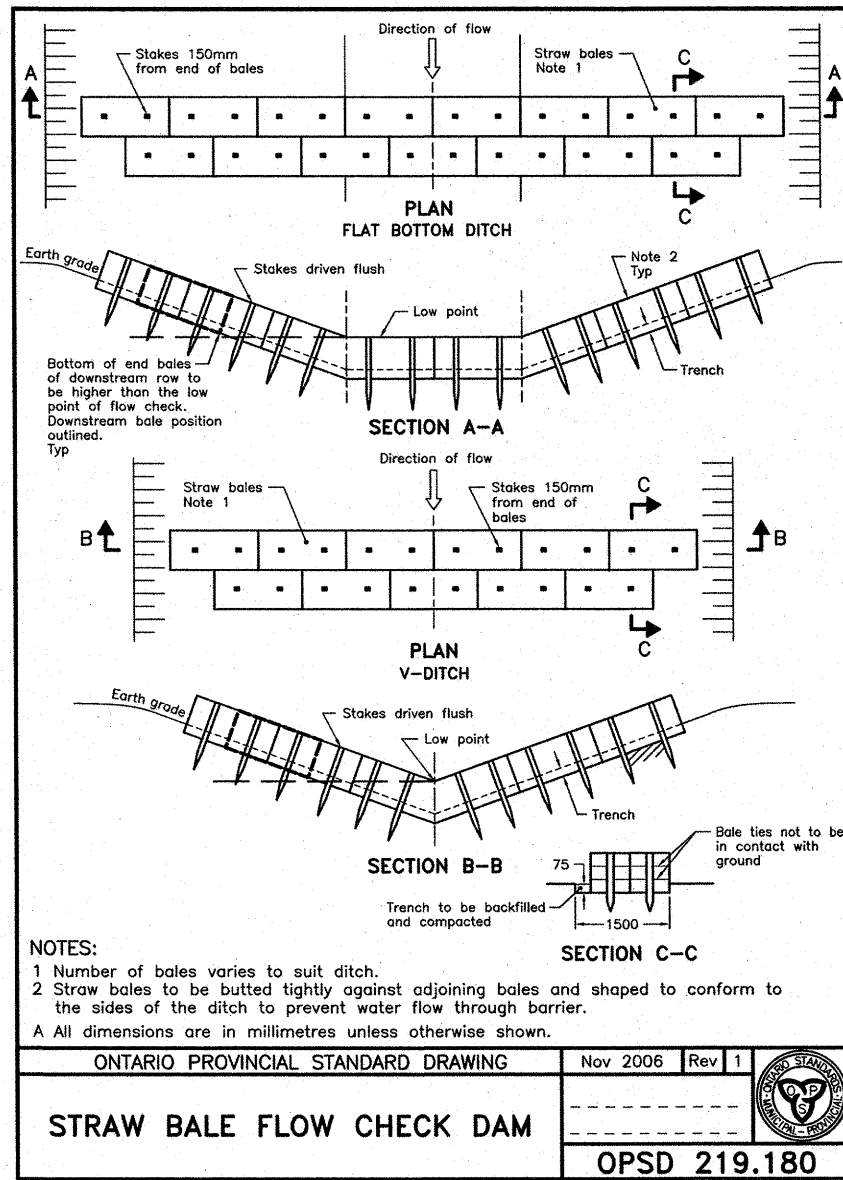
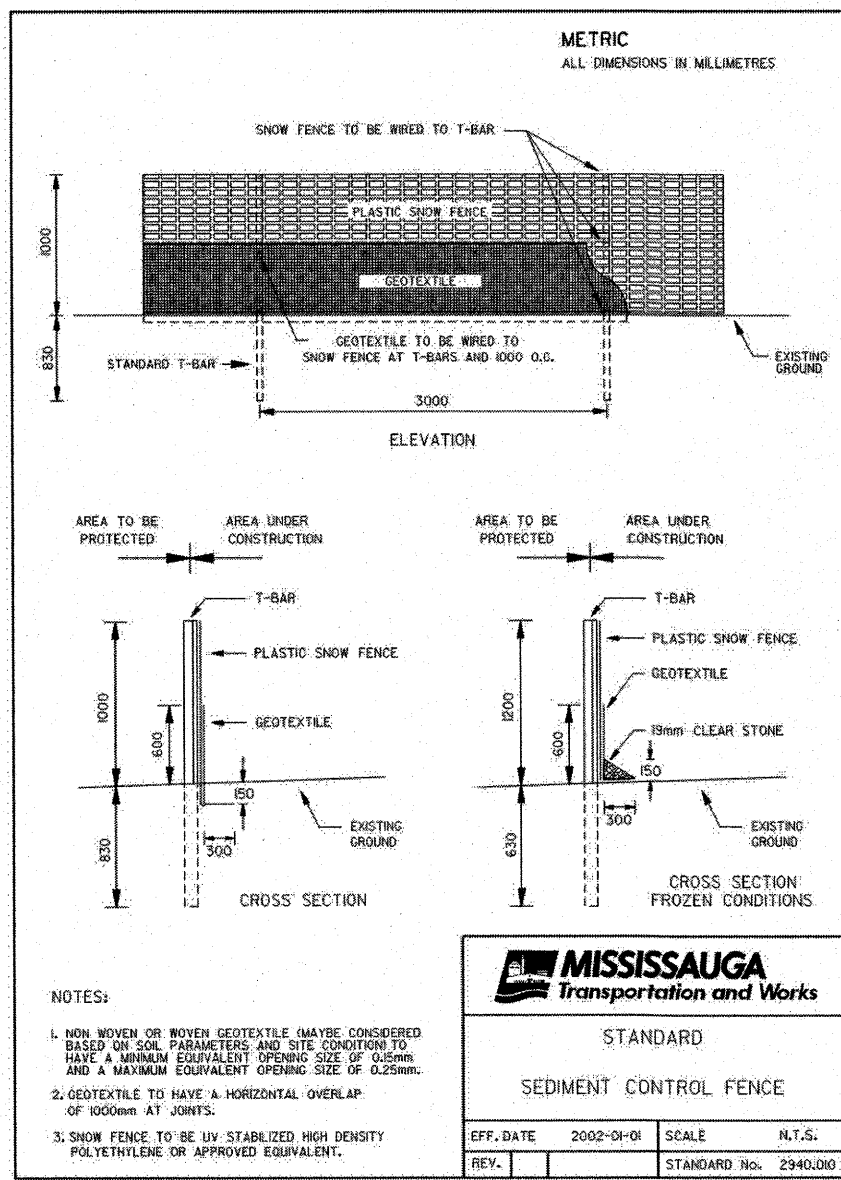


### CONSTRUCTION SEQUENCE AND NOTES

1. CONSTRUCT GRANULAR MUDMAT AT CONSTRUCTION ENTRANCE PER CITY OF MISSISSAUGA STANDARD 2970.010.
2. ERECT SEDIMENT CONTROL FENCE WHERE NOTED ON PLAN, PER CITY OF MISSISSAUGA STANDARD 2940.010.
3. STRIP AREAS FOR PROPOSED WORKS AND STOCK PILE TOPSOIL REQUIRED FOR FINAL REINSTATEMENT IN TEMPORARY STOCKPILE LOCATIONS.
4. ALL SEDIMENT CONTROLS TO REMAIN IN PLACE UNTIL SITE IS COMPLETELY STABILIZED AND REMOVAL IS APPROVED BY AN ENGINEER.
5. EROSION AND SEDIMENT CONTROLS AS SHOWN ON THIS PLAN ARE TO BE INSPECTED WEEKLY AND AFTER EVERY RAINFALL BY CONTRACTOR. ANY AREA THAT WILL REMAIN DISTURBED LONGER THAN 30 DAYS MUST BE STABILIZED WITH APPROPRIATE SURFACE TREATMENT.
6. ALL MAINTENANCE REQUIRED FOR THE SEDIMENT AND EROSION CONTROLS MUST BE PERFORMED IN A TIMELY MANNER.

### ADDITIONAL NOTES

- a) ALL SEDIMENT CONTROL FENCING IS TO BE ERECTED PRIOR TO THE COMMENCEMENT OF ANY SITE GRADING OPERATIONS, AS PER CITY OF MISSISSAUGA STANDARD 2940.010.
- b) ALL CATCHBASINS WITHIN LANDSCAPED AREAS TO HAVE SEDIMENT BARRIER (CITY OF MISSISSAUGA STANDARD 2930.02 OR 2930.03) ERECTED IMMEDIATELY AFTER CATCHBASIN INSTALLATION. SEDIMENT PROTECTION BARRIER TO BE MAINTAINED ON A REGULAR BASIS OR TO THE SATISFACTION OF THE CITY OF MISSISSAUGA.
- c) ALL ROADSIDE CATCHBASINS TO HAVE SEDIMENT PROTECTION AS PER CITY OF MISSISSAUGA STANDARD 2930.050. INSTALLED IMMEDIATELY AFTER CATCHBASIN INSTALLATION. SEDIMENT PROTECTION BARRIER TO BE MAINTAINED ON A REGULAR BASIS OR TO THE SATISFACTION OF THE CITY OF MISSISSAUGA.
- d) IF SITE CONSTRUCTION ACTIVITIES ARE INTERRUPTED AND/OR INACTIVITY EXCEEDS 30 DAYS, ALL STRIPPED AND/OR BARE SOIL AREAS ARE TO BE STABILIZED BY SODDING/SEEDING/MULCHING OR OTHER APPROVED METHOD, TO THE SATISFACTION OF THE CITY OF MISSISSAUGA.
- e) THIS CONTROL PLAN IS PREPARED FOR SUBMISSION TO THE CITY OF MISSISSAUGA IN CONJUNCTION WITH AN APPLICATION FOR EROSION & SEDIMENT CONTROL PERMIT NO. \_\_\_\_\_ UNDER THE EROSION & SEDIMENT CONTROL BY-LAW NO 512-81, AS AMENDED.
- f) ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED, AS REQUIRED, TO THE SATISFACTION OF THE CITY OF MISSISSAUGA.
- g) DURING ALL CONSTRUCTION PHASES, MUD TRACKING CONTROL, CONSISTING OF FLUSHING AND SWEEPING ROADS, IS TO BE PROVIDED FOR ALL ROADS, AS WARRANTED, IN ACCORDANCE WITH THE CITY OF MISSISSAUGA MUD TRACKING CONTROL POLICY.

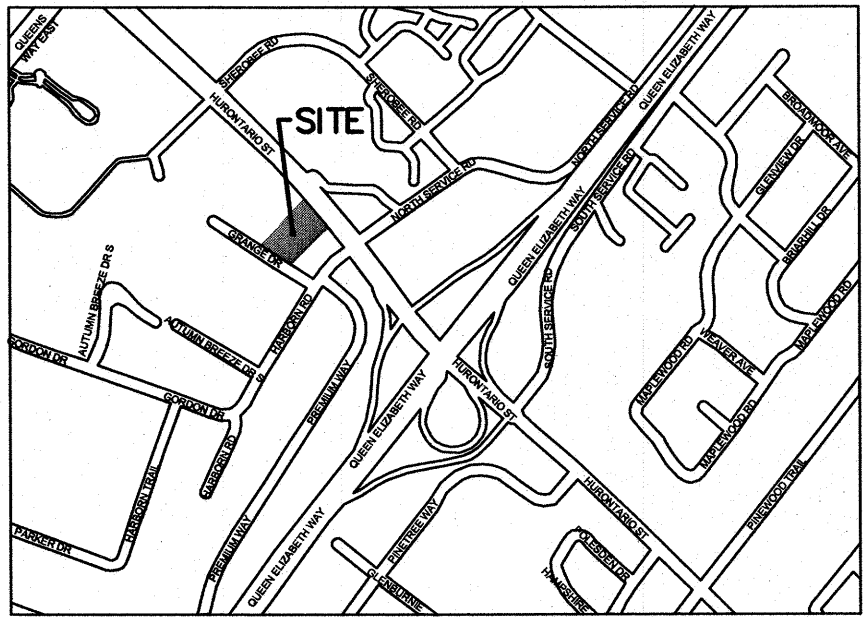


### ELEVATION NOTE

ELEVATIONS ARE GEODETIC AND ARE REFERRED TO THE CITY OF MISSISSAUGA BENCHMARK NO. 524, HAVING AN ADJUSTED ELEVATION OF 55.80 METERS.

### BEARING NOTE

BEARING ARE ASTROMONIC AND ARE REFERRED TO THE SOUTHWEST LIMIT OF HURONTARIO STREET, HAVING A BEARING OF N 24° 35' 00" W ACCORDING TO M.T.C. PLAN P-1659-6 (INSTRUMENT NO. 50033).



### KEY PLAN

N.T.S.

### LEGEND

- PROPERTY LINE
- LIMITS OF CONSTRUCTION
- TOPOGRAPHIC INFORMATION
- EXISTING THREE
- TOPOGRAPHIC ELEVATIONS
- SEDIMENT CONTROL FENCE (STD. 2940.010)
- INLET SEDIMENT CONTROL DEVICE (STD. 2930.50)
- CONSTRUCTION ACCESS MAT (STD. 2970.010)
- OVERLAND FLOW ROUTE

### SERVICE DATA

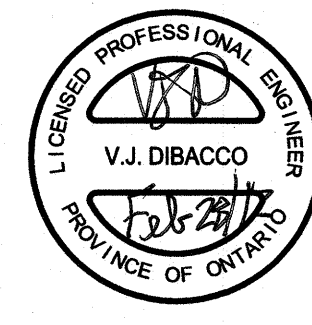
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.

### REVISIONS

DATE	DETAILS	INIT.

MARCH 1, 2012	SUBMIT FOR REZONING APPLICATION	E.L.
FIRST DATE: 12/03/01	SECOND DATE:	INTERIM DATE:
	PRE-SER DATE:	FINAL DATE:

### SUBMISSION



DESIGN BY

APPROVED BY

## 2120 HURONTARIO STREET

PART OF LOT 16 CON 1 SOUTH OF DUNDAS ST & LOTS 14 TO 20 INCLUSIVE AND PART OF LOT 22  
2114 - 2130 HURONTARIO STREET  
2095 - 2121 GRANGE DRIVE  
MISSISSAUGA, ONTARIO



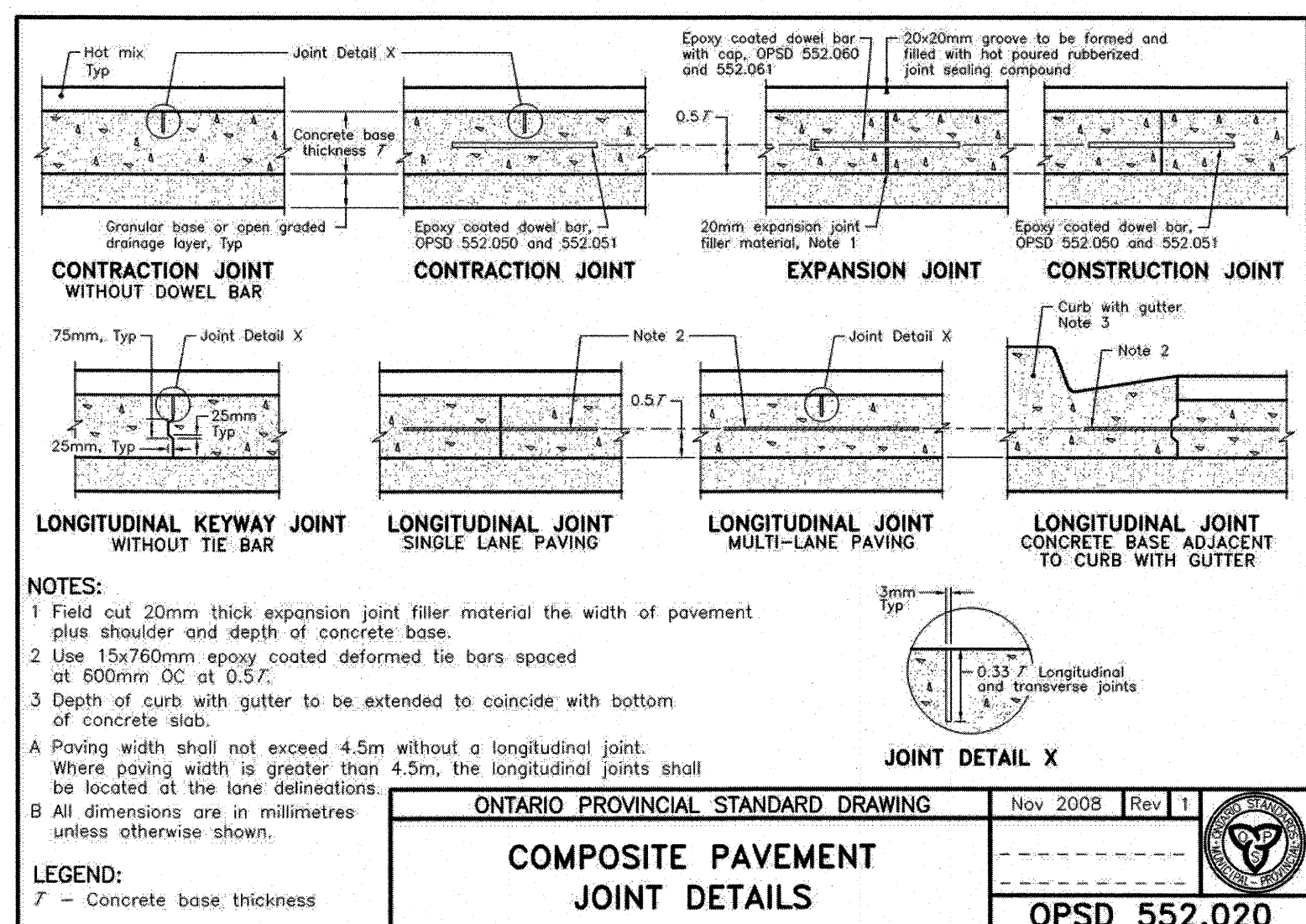
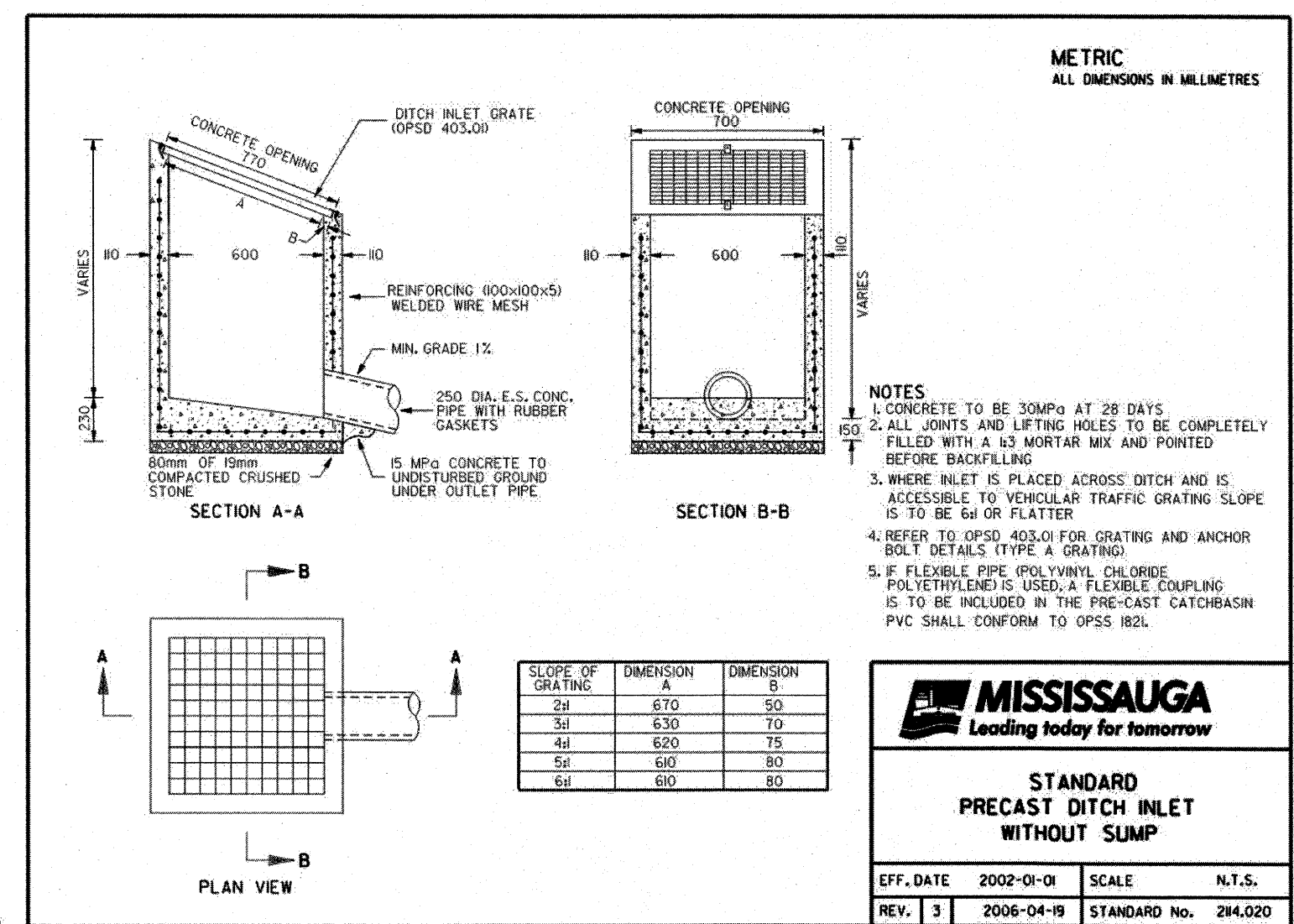
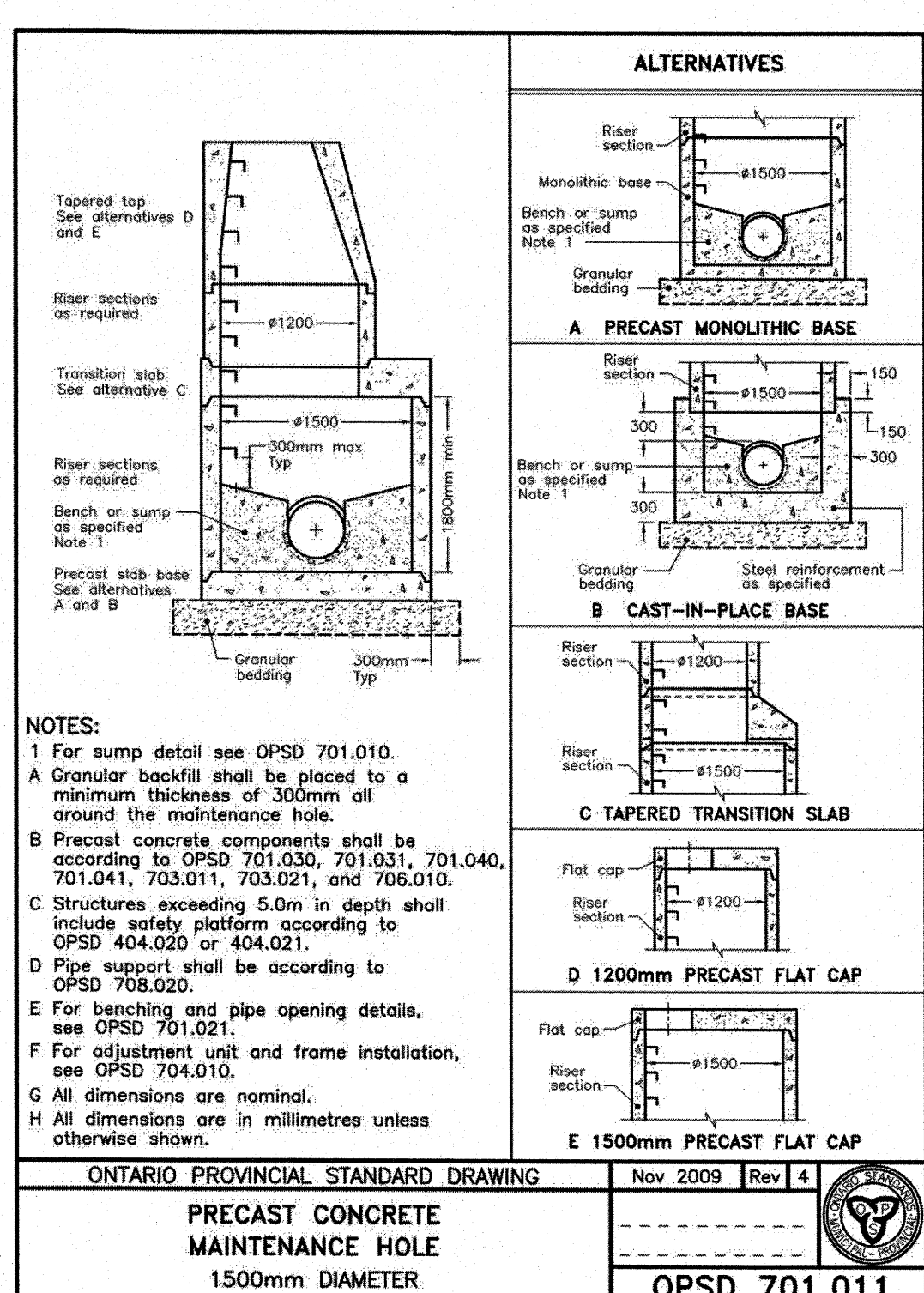
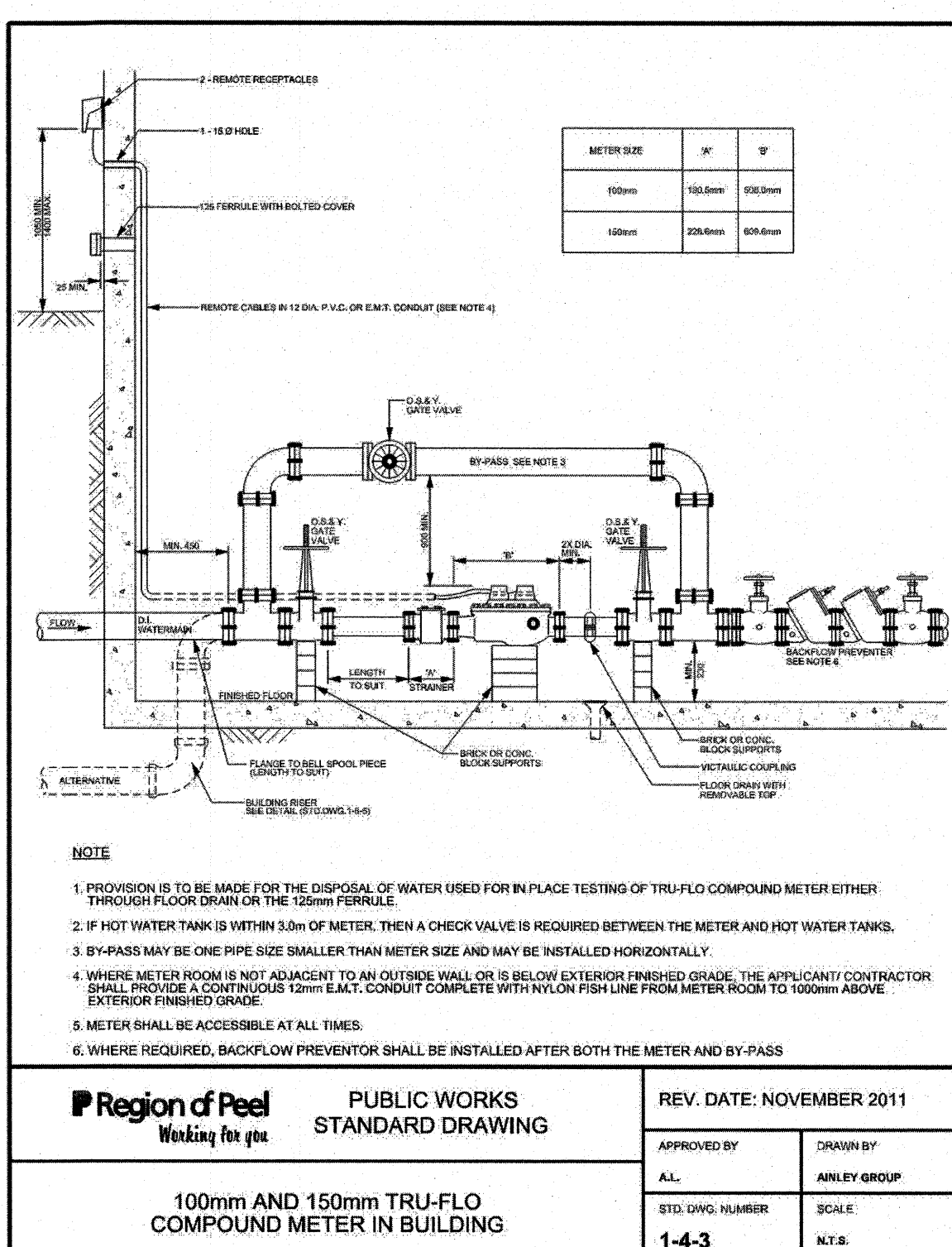
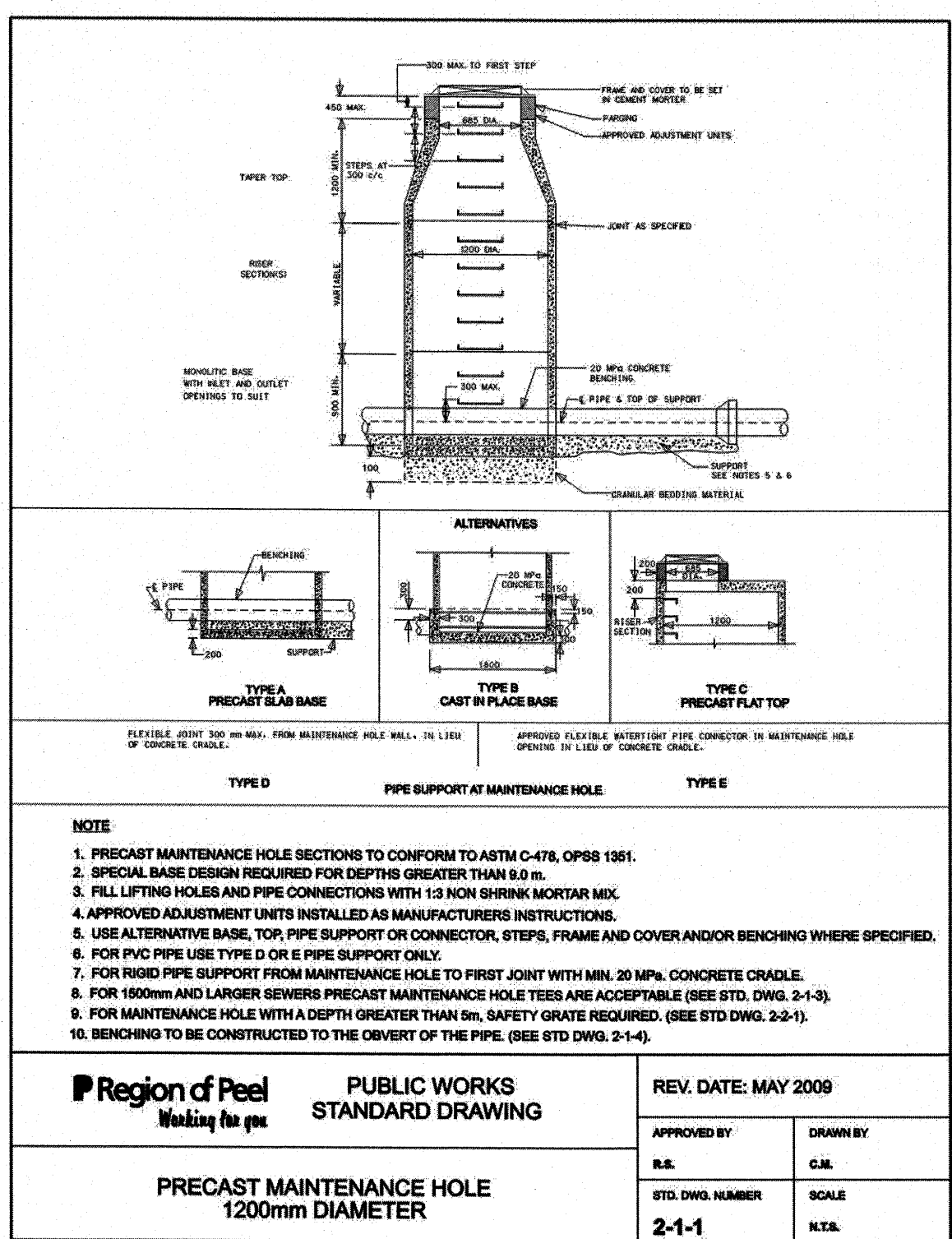
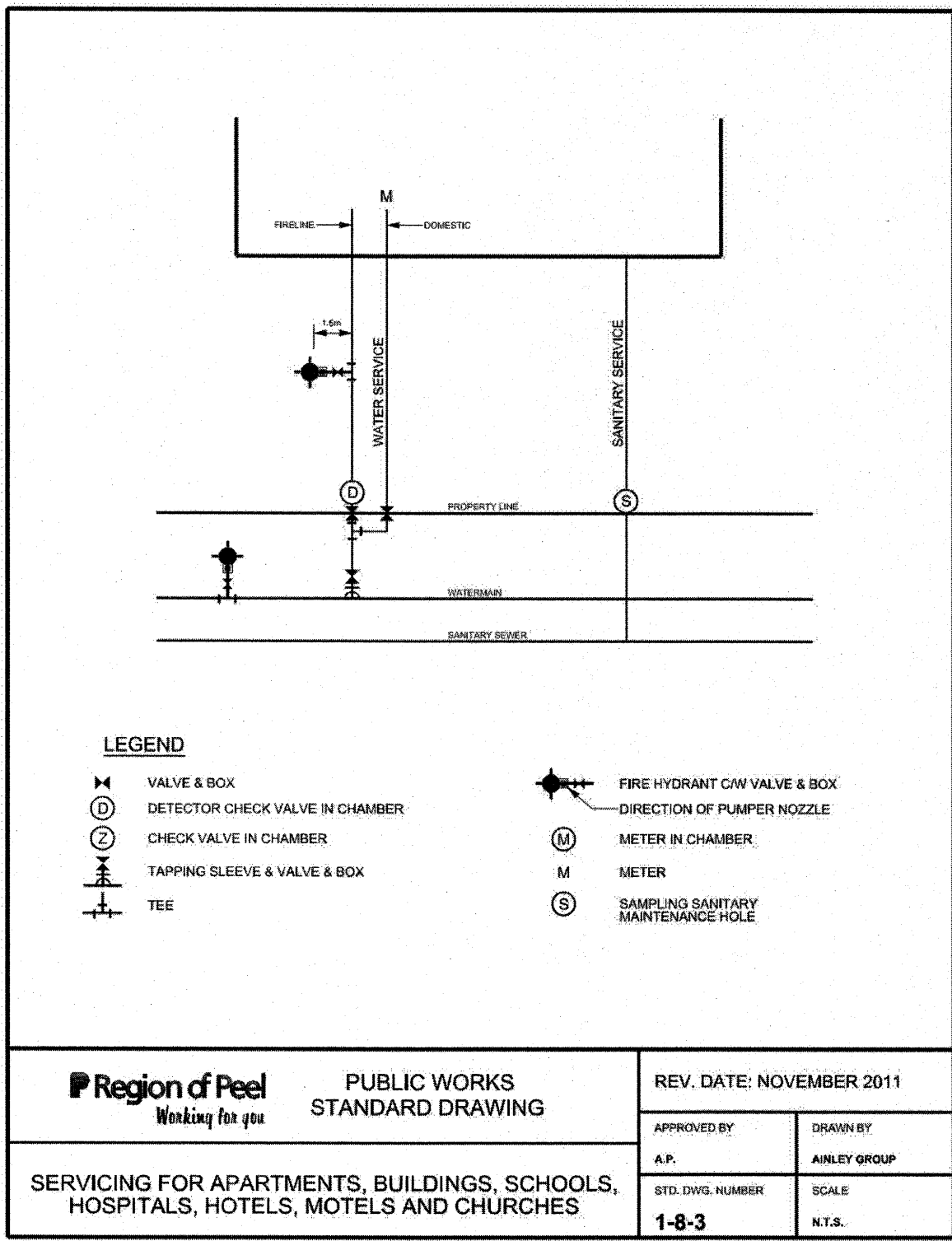
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Telephone (905) 821-1800  
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Web: www.rjburnside.com



## EROSION & SEDIMENT CONTROL PLAN

SCALE	1 : 300	AREA	Z-15	PROJECT No.	300 30579
C.A.D.D. BY	P.P./E.L.	CHECKED BY	V.J.D.	PLAN No.	
DATE	MARCH 2012	SHEET	1 OF 1		ESC1





KEY PLAN  
N.T.S.

SERVICE DATA					
SERVICE	DATE	INIT.	SERVICE	DATE	INIT.

REVISIONS		
DATE	DETAILS	INIT.

SUBMISSION					
FIRST DATE	SECOND DATE	INTERIM DATE	PRE-SER DATE	FINAL DATE	E.L.
MARCH 1, 2012					
DATE: 12/03/01					

DESIGN BY		APPROVED BY	

**2120 HURONTARIO STREET**

PART OF LOT 16 CON 1 SOUTH OF DUNDAS ST & LOTS 14 TO 20 INCLUSIVE AND PART OF LOT 22  
2114 - 2130 HURONTARIO STREET  
2095 - 2121 GRANGE DRIVE  
MISSISSAUGA, ONTARIO

**BURNSIDE**

R.J. Burnside & Associates Limited  
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web www.rjburnside.com

**MISSISSAUGA**  
Transportation and Works

DETAILS PLAN

CITY FILE:			
SCALE	N.T.S.	AREA	Z-15
C.A.D.D. BY	P.P./E.L.	CHECKED BY	V.J.D.
DATE	MARCH 2012	SHEET	1 OF 1