

**BARRIE REXALL**  
**407 Bayfield Street**  
**Barrie, Ontario**

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**Functional Servicing Report**

*City of Barrie, ON*

June 7, 2021

Project: 21002

City File: D28-056-2020



Prepared By:



Reviewed By:



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**Table of Contents**

|            |                                                 |          |
|------------|-------------------------------------------------|----------|
| <b>1.0</b> | <b>INTRODUCTION .....</b>                       | <b>1</b> |
| <b>2.0</b> | <b>STORM DRAINAGE .....</b>                     | <b>2</b> |
| <b>3.0</b> | <b>EROSION AND SEDIMENT CONTROL .....</b>       | <b>2</b> |
| <b>4.0</b> | <b>SANITARY SERVICING .....</b>                 | <b>3</b> |
| 4.1        | Existing Sanitary Sewers & Services .....       | 3        |
| 4.2        | Proposed Sanitary Services .....                | 3        |
| 4.3        | Existing and Proposed Site Sanitary Flows ..... | 3        |
| <b>5.0</b> | <b>WATER SERVICING .....</b>                    | <b>4</b> |
| 5.1        | Existing City Watermains & Water Services ..... | 4        |
| 5.2        | Proposed Water Services .....                   | 4        |
| 5.3        | Fire Flow Demand .....                          | 4        |
| <b>6.0</b> | <b>CLOSURE .....</b>                            | <b>5</b> |

**Technical Appendices**

|             |                                                           |
|-------------|-----------------------------------------------------------|
| Appendix A: | Site Servicing Plan, Drawing No. 21002-SS1                |
|             | Site Grading Plan, Drawing No. 21002-SG1                  |
|             | Erosion and Sediment Control Plan, Drawing No. 21002-ESC1 |
| Appendix B: | Fire Flow Calculation                                     |

# **Functional Servicing Report**

## **BARRIE REXALL**

**407 Bayfield Street,  
City of Barrie**

### **1.0 INTRODUCTION**

The following Functional Servicing Report has been prepared for Liatris Limited, in support of the Site Plan Approval (SPA) application and a Committee of Adjustment application for a side yard setback variance. The project consists of the demolition of an existing restaurant and the construction of a new one (1) storey (no basement) commercial building which will serve as a Rexall drug store. The proposed 836.2 square metre building is part of a much larger 1.11-hectare development which houses multiple commercial buildings. Locally the structure forms part of a tight cluster of three (3) commercial buildings. The property is legally described as Part of West Half of Lot 20, Concession 4 in the City of Barrie, County of Simcoe. The proposed development site fronts onto Bayfield Street to the west and commercial uses border the other three sides along with ancillary parking and driveways. The site location is identified in the Key Map found on the drawings in **Appendix A**.

The existing services will continue to service the new building as the footprint is generally the same and the intended use will reduce the amount of water consumption and sanitary discharge due to the increased efficiency of modern plumbing fixtures and change of use.

This report summarizes the proposed servicing for this development, including, but not limited to, the following:

- Outline the proposed storm servicing strategy for the site demonstrating a zero-net increase in runoff from predevelopment post-development flows;
- Identify that the post development sanitary flows will be substantially less than predevelopment flows based upon the change of use;
- Demonstrate that the existing 50mm water connection will be sufficient to service the intended use.

## 2.0 STORM DRAINAGE

The proposed 836.2 square metre structure will replace the existing 626.7 square metre building. Although the square footage will increase the building will replace impervious surfaces and as such there will be no net increase in storm water runoff as the runoff coefficient for the two surfaces would effectively be the same.

The proposed building will be serviced with a new 200mm diameter storm service falling at 2% which outlets to an existing catchbasin manhole (CBMH) within the court to the south. The existing 375mm diameter storm sewer outlet from this CBMH will be replaced due to a conflict with the proposed building. It will be deflected around the building and connected back into the existing 375mm storm sewer in the parking lot to the west. Ultimately it connects to an existing 375mm storm sewer within the Bayfield Road right of way to the west of the building as depicted on the **Site Servicing Plan, Drawing No. 21002-SS1**.

Based upon a proposed roof area of 836.2 square metres and an adjusted roof runoff coefficient of 0.99 the 200mm pipe has the capacity capable of conveying flows during a 100-year event.

$$\begin{aligned} I_{100 \text{ YR}} &= A / (t_d + B)^C \\ &= 1426.408 / (10 + 5.273)^{0.759} \\ &= 180.15 \text{ mm/hr} \\ Q_{\text{ROOF}} &= CIA / 3600 \\ &= 0.99 \times 180.15 \text{ mm/hr} \times 836.2 \text{ m}^2 / 3600 \\ &= 41.43 \text{ L/s} \\ Q_{200 \text{ CAP}} &= 48.39 \text{ L/s} \end{aligned}$$

Therefore, the capacity of the storm connection from the building is sufficient to convey the flows to the receiving sewer and there will be a zero-net increase in stormwater runoff from the development.

The major system will follow the existing route, safely around the buildings, within the adjacent driveways and outlets to the Aspen Drive right of way to the east. The major system outlet is roughly 2 metres lower than the proposed finished floor elevation. Refer to the attached **Site Grading Plan, Drawing No. 21002-GR1**.

## 3.0 EROSION AND SEDIMENT CONTROL

Silt Soxx™ are to be installed along the limit of disturbed area where there is a risk of sediment runoff onto the adjacent property during construction. This sediment control is to be installed prior to site grading and shall be maintained throughout the construction period. Existing catchbasins shall be protected from sediment as per the details on the **Erosion and Sediment Control Plan, Drawing No. 21002-ESC1** and shall be inspected and maintained until all exposed soil is stabilized on the site.

## 4.0 SANITARY SERVICING

### 4.1 Existing Sanitary Sewers & Services

The three existing buildings are individually serviced by a 150mm diameter sanitary services which outlet to an existing sanitary manhole found in the central courtyard. The outlet for this manhole is the existing 150mm diameter sanitary line which falls to the west and connects to the existing 250mm diameter sanitary sewer in the Bayfield Street right of way which drains in a southerly direction. Refer to the **Site Servicing Plan, Drawing No. 21002-SS1**.

### 4.2 Proposed Sanitary Services

The drawings indicate that the existing 150mm sanitary service is to be reused however the Contractor shall ensure that the condition is acceptable and that the slope of the pipe is at 2% or greater otherwise it shall be replaced.

### 4.3 Existing and Proposed Site Sanitary Flows

The previous use being a Fran's Restaurant would have considerably higher flows. Although the exact fixture count is not known as the building has been demolished one could expect several toilets / sinks in both washrooms as well as commercial dishwashing equipment and several food preparation sinks. In addition, modern, water efficient plumbing fixtures would further reduce the expected flows by 30%. Based upon Table 7.4.9.3. of the Ontario Building Code (OBC) the proposed building contains the following total plumbing fixture count:

**Table 1: Total Plumbing Fixture Units**

| FIXTURE TYPE        | QUANTITY | FIXTURE UNITS | TOTAL |
|---------------------|----------|---------------|-------|
| Single Sink         | 2        | 1.5           | 3     |
| Double Sink         | 2        | 1.5           | 3     |
| Water Closet (DF)   | 1        | 6             | 6     |
| Janitors Sink       | 1        | 1.5           | 1.5   |
| Total Fixture Units |          |               | 13.5  |

A total 13.5 fixture units would generate 23 gallons/minute or 1.45 litres/sec without a diversity factor. Table 7.4.10.5. of the OBC identifies that a 150mm sanitary pipe can accommodate 700 and 840 fixture units at a 1% and 2% slope respectively and therefore the existing 150mm diameter sanitary pipe should be adequate if either of those slopes are maintained.

## 5.0 WATER SERVICING

### 5.1 Existing City Watermains & Water Services

An existing 200mm diameter local watermain runs along the east boulevard of Bayfield Street, and is identified on the **Site Servicing Plan, Dwg. No 21002-SS1**. An existing 100mm domestic water service is tapped off this main and splits into 3 – 50mm water services which services each of the three buildings in the commercial cluster. There are no firefighting connections or hydrants on this existing line.

### 5.2 Proposed Water Services

In accordance with the sanitary analysis the fixture count has been reduced to 13.5 fixture units and can be readily accommodated with the existing 50mm water service as identified in Table 7.6.3.4. of the Ontario Building Code. The existing water service will be extended to the proposed meter in the building.

### 5.3 Fire Flow Demand

The fire flow requirements for the building have been estimated using the NFPA Fire Underwriters Survey's Water Supply for Public Fire Protection (1999), and domestic water demands have been estimated using the City of Barrie's Water Transmission and Distribution Design Standard (2021).

The proposed domestic water demands have been calculated using the building GFA of 836.2 square metres, an average day domestic demand 28.0 cu.m/ha/day, a maximum day factor of 1.8 and a peak hour demand factor of 5.0, in accordance with City of Barrie standards. The results have been tabulated in **Table 2, Domestic Water Demand**.

**Table 2: Domestic Water Demand**

| Building               | Proposed Commercial |          |
|------------------------|---------------------|----------|
| Total Floor Area       | 0.0836              | ha       |
| Land-Use Consumption   | 28,000              | L/day/ha |
| Avg. Daily Demand =    | 2,341               | L/day    |
|                        | 1.6                 | L/min    |
| Maximum Daily Demand = | 4,214               | L/day    |
|                        | 2.9                 | L/min    |
| Peak Hour Demand =     | 488                 | L/hr     |
|                        | 8.1                 | L/min    |

The gross floor area (GFA) of 836.2 square metres, has been used to determine the fire flow requirements for a non-sprinklered, non-combustible building. With respect to the Fire Flow Demand, detailed calculations can be found in **Appendix B** and totalled in **Table 3**.

**Table 3: Total Water Demand**

| Water Demand                 | Proposed Building |
|------------------------------|-------------------|
| Maximum Daily Demand (L/day) | 4,214             |
| Maximum Daily Demand (L/min) | 2.90              |
| Fire Flow Demand (L/min)     | 6,358             |
| Total Water Demand (L/min)   | 6,360.90          |

The maximum anticipated water demand from the development will be 6,360.90 L/min, or 1,680 USGPM. The proponent should ensure that the existing hydrant is capable of yielding this flow rate at the City's minimum operating pressure of 20 PSI such that the municipal watermain will adequately service the proposed development.

## **6.0 CLOSURE**

Due to the change of use the proposed development will reduce the requirement for both the sanitary and water servicing. The imperviousness of the proposed development will not change and therefore an increase in the storm drainage discharge will remain unaffected.

No new private infrastructure or service connections will be made to the public infrastructure. The project is effectively a building replacement and as such there will be minimal impact to the municipal system.

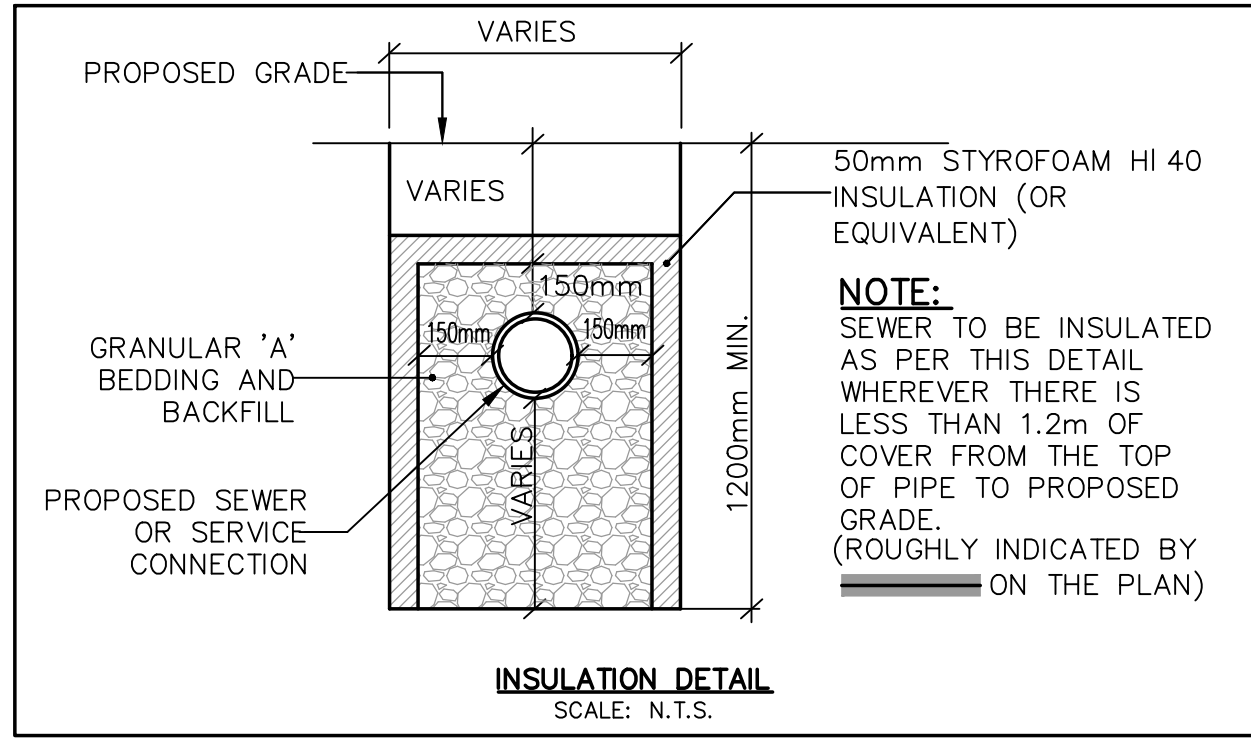
## **Appendix A**

**Site Servicing Plan**

**Site Grading Plan**

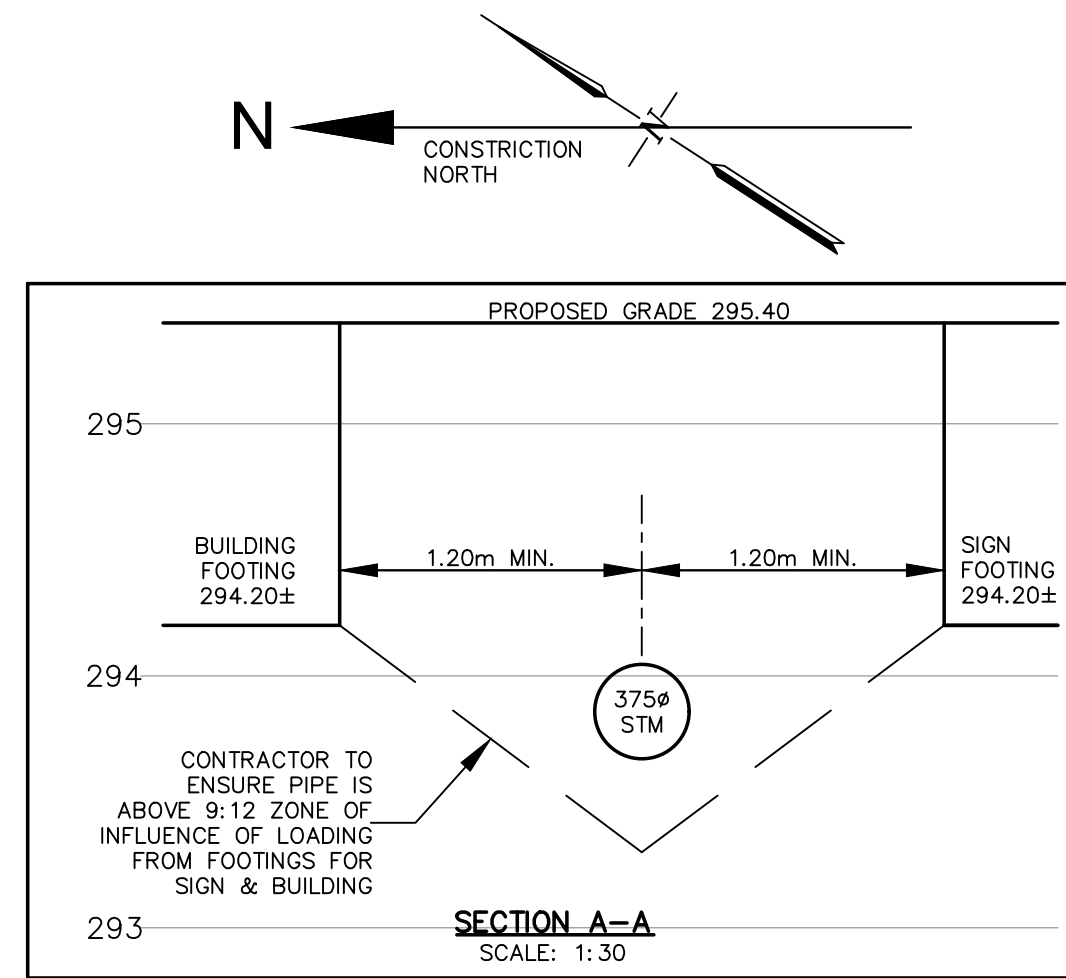
**Erosion and Sediment Control Plan**



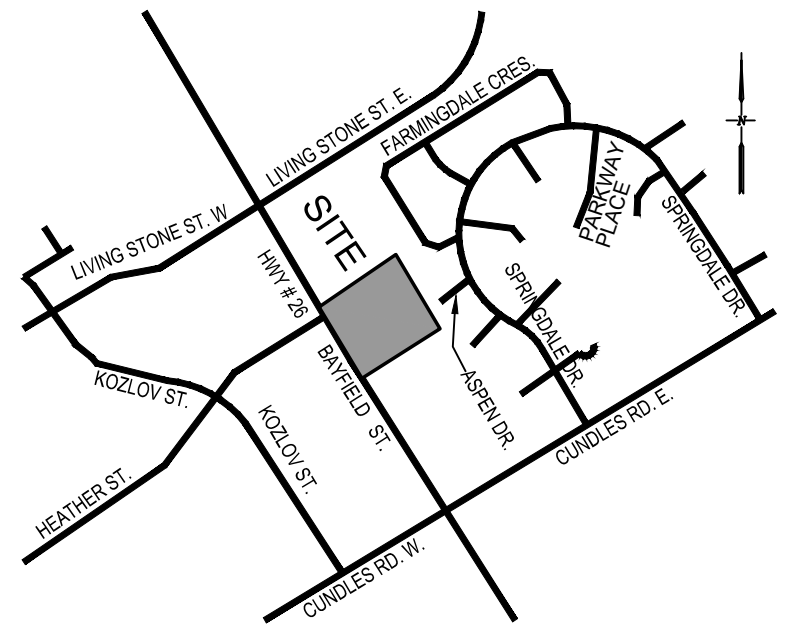


#### WATERMAIN NOTES:

1. ALL WATERMAIN WORK SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT CITY OF BARRIE STANDARDS AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
2. CONTRACTOR SHALL INFORM THE CITY OF BARRIE WATER OPERATIONS DEPARTMENT A MINIMUM OF 48 HOURS IN ADVANCE OF THEIR INTENTIONS TO PERFORM WORK ON WATER INFRASTRUCTURE.
3. MINIMUM COVER OVER WATERMAIN SHALL BE 1.7m, THE MINIMUM HORIZONTAL SEPARATION BETWEEN WATERMAIN AND SEWERS SHALL BE 2.5m, WHERE WATERMAIN CONFLICTS WITH SEWER PIPES, DEFLECT WATERMAIN HORIZONTALLY OR VERTICALLY WHILE PROVIDING A MINIMUM OF 0.5M VERTICAL CLEARANCE BETWEEN WATERMAIN AND SEWERS, MAINTAIN MINIMUM DEPTH OF COVER AT ALL TIMES.
4. WATERMAIN SHALL BE INSTALLED IN BEDDING AS PER OPSD 802.010 (GRANULAR 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD 802.030 OR 802.031 CLASS 'B' (GRANULAR 'A' BEDDING MATERIAL, GRANULAR 'A' OR SELECT NATIVE COVER MATERIAL) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF WATER OPERATIONS. ALTERNATIVE EMBEDMENT MATERIAL MEETING GRADATION REQUIREMENTS OF OPSS/MUNI 1004.05.07 COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY IS PERMISSIBLE WHERE NOTED IN STANDARD DETAILS. GEOTECHNICAL CERTIFICATION OF MATERIAL AND COMPACTION TESTING MUST BE PROVIDED EVERY 150 METRES. THE COMPACTION TESTING MUST INCLUDE THE ENTIRE EMBEDMENT ENVELOPE (HAUNCHES, BEDDING, TOP OF PIPE AND COVER).
5. COPPER WATER MAINS AND SERVICES 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND 100mm ABOVE AND BELOW TO CONFORM TO OPSS. MUNI 1004.05.07.
6. TRACING WIRE SHALL BE #12 AWG HIGH STRENGTH COPPER CLAD (HS-CSS) AND SHALL BE INSTALLED ON THE TOTAL LENGTH OF ALL WATERMAIN AND BROUGHT UP AT EACH HYDRANT AND CONNECTED TO A FLANGE BOLT. ALL SPLICES TO INCLUDE CONNECTORS AS PER THE APPROVED MANUFACTURERS PRODUCTS FOR LINEAR WATER SYSTEMS LIST. REFER TO CITY STD. BSD-515.
7. ALL WATER SERVICES SHALL BE MINIMUM 50mm TYPE 'K' COPPER OR UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF WATER OPERATIONS.
8. SERVICE TAPS SHALL BE PLACED AT A MINIMUM SEPARATION OF 1.0m AND A MINIMUM OF 0.6m FROM JOINTS. (ENDS OF PIPE)
9. ALL NEW CURB STOPS AND BOXES TO BE LOCATED OUT OF DRIVEWAYS AND SIDEWALKS.
10. WATER CONNECTION FEES TO BE INCLUDED WITHIN THE CONTRACT AND ARE TO BE PAID FOR AT THE OPERATIONS CENTRE, 165 FERRAIDE DR. N.
11. DOMESTIC SERVICES REQUIRE BACKFLOW PREVENTION AS PER CITY OF BARRIE BYLAW 2010-102.
12. ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING LINES IN ORDER TO ALLOW INDEPENDENT PRESSURE TESTING AND CHLORINATING FROM EXISTING SYSTEMS. PRESSURE TEST AND CHLORINATION TEST TO MEET CITY OF BARRIE STANDARDS.
13. WHEN DISINFECTING NEW WATER LINES, THE DISCHARGE OF SUPER CHLORINATED MUST BE TREATED COMPLETELY TO ELIMINATE ANY SOURCES OF CHLORINE PRIOR TO DISCHARGING TO THE NATURAL ENVIRONMENT. SAMPLING VERIFICATION MUST BE COMPLETED TO ENSURE NO RESIDUE CHLORINE IS DETECTED.



#### KEY MAP



#### NOTES:

1. VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
2. SURVEY PREPARED BY: RUDY MACK SURVEYING LTD. O.L.S. DATED: MARCH 9, 2021
3. DO NOT SCALE DRAWINGS
4. REPORT ALL ERRORS, OMISSIONS OR DISCREPANCIES TO URBAN WATERSHED GROUP LIMITED IMMEDIATELY UPON DISCOVERY.
5. USE ONLY LATEST REVISED DRAWINGS OR THOSE THAT ARE MARKED "ISSUED FOR CONSTRUCTION".
6. THE DRAWINGS ARE THE PROPERTY OF URBAN WATERSHED GROUP LIMITED AND MUST BE RETURNED ON COMPLETION OF THE PROJECT. ANY UNAUTHORIZED USE OF THIS PLAN IS PROHIBITED.

#### GENERAL NOTES:

1. THESE NOTES APPLY TO ALL WORKS UNDER THIS CONTRACT UNLESS OTHERWISE NOTED ELSEWHERE ON THIS OR OTHER PLANS AND/OR ON SPECIFIC DETAILS.
2. THE STANDARD DRAWINGS OF CITY OF BARRIE, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS) AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) CONSTITUTE PART OF THE PLANS OF THIS CONTRACT.
3. ORDER OF PRECEDENCE OF STANDARD DRAWINGS IS FIRSTLY CITY OF BARRIE STANDARD DRAWINGS AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS.
4. TRAFFIC CONTROLS TO CONFORM TO THE LATEST REVISION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND ONTARIO TRAFFIC MANUAL TEMPORARY CONDITIONS (BOOK 7).
5. THE STANDARD DRAWINGS INCLUDED WITH THESE PLANS ARE FOR CONVENIENCE ONLY AND ARE NOT TO BE CONSTRUED TO BE A COMPLETE SET FOR THE PURPOSE OF THE CONTRACT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN CURRENT COPIES OF ALL RELEVANT STANDARDS, STANDARD DRAWINGS AND SPECIFICATIONS REQUIRED FOR THIS CONTRACT.
6. ALL PROPOSED CONSTRUCTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS. ALL TRENCHING TO BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
7. ALL DIMENSIONS ARE IN METRES AND ALL DIAMETERS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED ON DRAWINGS.
8. ALL DIMENSIONS AND ELEVATIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION AND ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. EXISTING SERVICES AND UTILITIES SHOWN ON THESE CONTRACT DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE AND THEIR LOCATIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE WISHES WITH THE UNDERSTANDING THAT THE OWNER AND ENGINEER DISCLAIM ALL RESPONSIBILITY FOR ITS ACCURACY AND/OR SUFFICIENCY. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
10. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. ALL EXISTING UTILITIES MUST BE LOCATED AND VERIFIED BY EACH UTILITY PRIOR TO CONSTRUCTION. ANY RELOCATION OF UTILITIES REQUIRED FOR THE DEVELOPMENT OF THE SUBJECT LANDS IS TO BE UNDERTAKEN AT THE OWNER'S EXPENSE.
11. THE CONTRACTOR SHALL OBTAIN A ROAD OCCUPANCY PERMIT FROM THE CITY OF BARRIE PRIOR TO CARRY OUT THE WORKS IN THE BOULEVARD / ROW.

#### STORM NOTES:

1. ALL STORM SEWER WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CURRENT MUNICIPAL DESIGN STANDARDS AND ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) AND SPECIFICATIONS (OPSS).
2. STORM SEWER PIPES 100mm DIA. TO 400mm DIA SHALL BE PVC SDR 35 B182.2 OR LATEST REVISION THEREOF.
3. STORM PIPE TO HAVE 1.20m MINIMUM COVER FROM OVERT OF PIPE TO FINAL GRADE, OR ADEQUATELY INSULATED.
4. BACKFILL AND PIPE BEDDING TO BE OPSD 802.010 OR 802.030 GRANULAR 'A' MATERIAL (UNLESS APPROVED OTHERWISE BY THE GEOTECHNICAL ENGINEER) COMPACTED TO A DRY DENSITY OF AT LEAST 98% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMD). REFERENCE OPSD 514 AND 516.
5. THE SUITABILITY AND COMPACTION OF ALL FILL MATERIALS ARE TO BE CONFIRMED AND APPROVED BY A GEOTECHNICAL ENGINEER.
6. ALL MANHOLES TO BE 1200mm OPSD 701.010 AND MANHOLE COMPONENTS TO BE SET TO BASE COURSE ASPHALT AND THEN ADJUSTED TO FINAL GRADE WITH MAX. 3 ADJUSTMENT RINGS WHEN WHEN TOP LIFT IS PLACED PER OPSD 704.010.
7. CATCHBASIN MANHOLES ARE TO BE SLUMPLESS AND WITH BENCHING PER OPSD 701.021, UNLESS OTHERWISE NOTED.
8. STORM MANHOLE COVERS AS PER OPSD 401.01, TYPE "A" WITH THE WORD "STORM" CAST IN THE LID.
9. MAXIMUM 450mm TO FIRST LADDER STEP AS PER OPSD 704.010, STEPS AS PER OPSD 405.010 AND 405.020.
10. MANHOLE BENCHING TO COMPLY WITH OPSD 701.021.
11. SURROUND ALL MANHOLES WITH A MINIMUM OF 1.50m COMPACTED GRANULAR BACKFILL TO 100% SPMD.
12. CATCHBASIN AND CATCHBASIN MANHOLES COVERS AS PER OPSD 400.010.
13. TOP OF STORM STRUCTURES (CATCHBASIN, MANHOLE) TO BE SET TO BASE COURSE ASPHALT AND THEN ADJUSTED TO FINAL GRADE WITH MAX. 3 ADJUSTMENT RINGS WHEN WHEN TOP LIFT IS PLACED PER OPSD 704.010.
14. PERFORATED SUB-DRAINS C/W SOCK TO BE INSTALLED ON ALL PARKING LOT CATCHBASINS AND CATCHBASIN MANHOLES. SUB-DRAINS TO EXTEND A MINIMUM 5.0m UPSTREAM ON EITHER SIDE OF THE CATCHBASIN / CATCHBASIN MANHOLE ALONG THE DRAINAGE PATH. SUB-DRAIN INSTALLATION TO BE CARRIED OUT IN ACCORDANCE WITH MUNICIPAL STANDARDS.

NOTE:  
PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL EXPOSE THE EXISTING SANITARY PIPE AND WATER SERVICE CONNECTIONS FOR A CONDITION INSPECTION BY URBAN WATERSHED GROUP LTD AND REPLACE AS REQUIRED. THE SANITARY PIPE SHALL HAVE A MINIMUM SLOPE OF 2.0%.

Rexall  
FFE=295.45

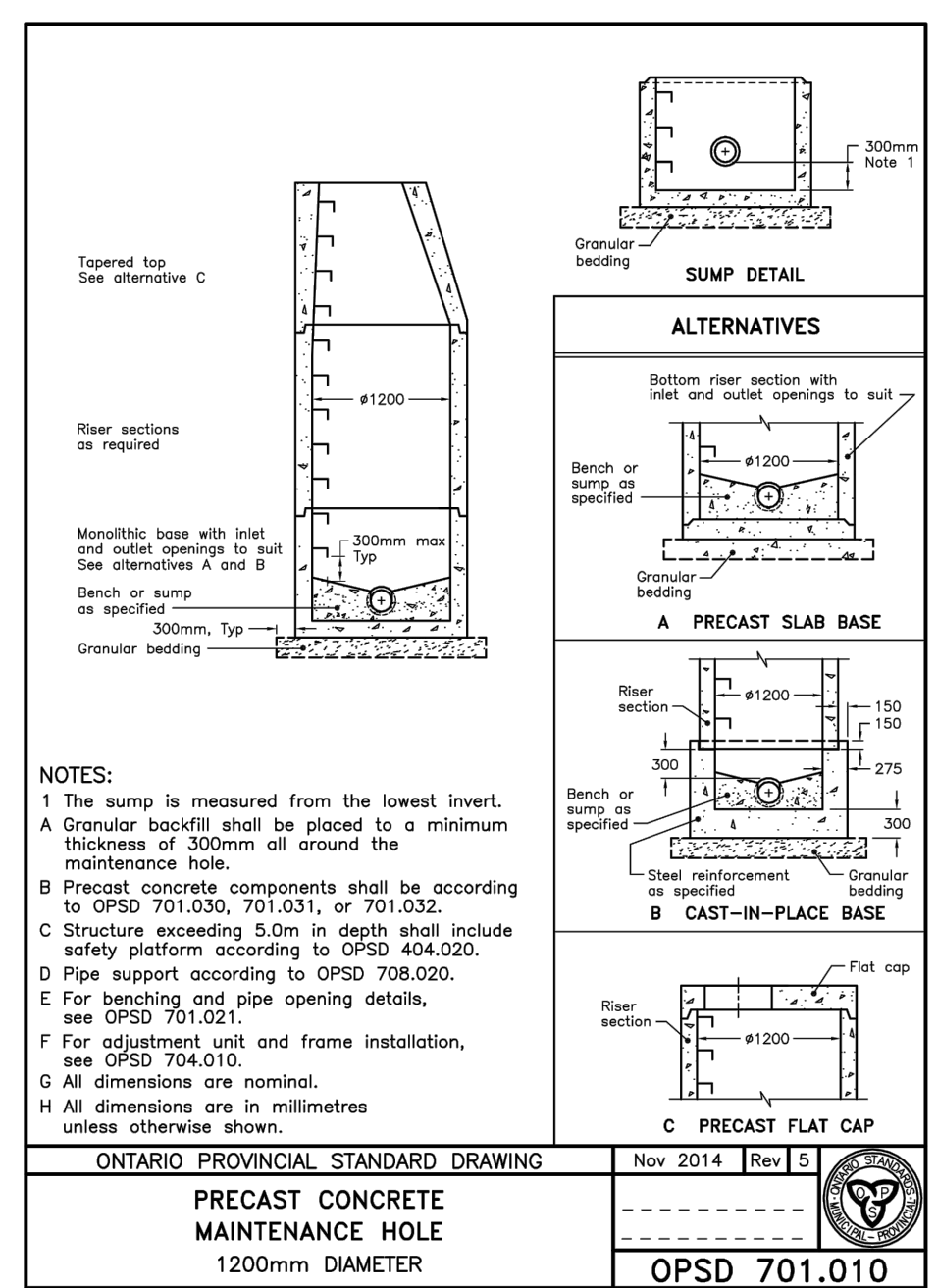
CONTRACTOR TO REMOVE EX. V&B AND WS UP TO PROPOSED CONNECTION  
CONTRACTOR TO CONNECT TO EX. 150mm SAN AT BUILDING FOOT  
INV. 293.60± (CONFIRM)  
USF=294.23  
CONTRACTOR TO REMOVE EX. 150mm STM AND REPLACE WITH 6.0m-200mm PVC STM @ 2.0% (INSULATE)  
INV. 294.24  
USF=294.23 (SLEEVE FOOTING AS REQUIRED)

RESTORATION NOTE:  
FOR RESTORATION LIMITS, REFER TO GRADING PLAN FOR DETAILS.

EXISTING LIGHT STANDARD TO BE REMOVED OR RELOCATED  
CONTRACTOR TO CONNECT 200mm TYPE 'K' COPPER TO EXISTING WS  
EX. 100mm DOM WM  
EX. 100mm V&B  
EX. 150mm STM  
EX. 150mm SAN

NOTE:  
STRUCTURAL ENGINEER TO REVIEW WHERE CIVIL AND UTILITY SERVICES PASS UNDER OR THROUGH FOOTINGS AND PROVIDE DETAIL SUCH THAT NO LOADING ACTS UPON THESE SERVICES.

NOTE:  
CONTRACTOR TO RESTORE EXISTING COURT YARD TO ORIGINAL CONDITIONS OR BETTER.



#### NOTE:

1. CONTRACTOR TO INVESTIGATE AND CONFIRM ALL INVERTS PRIOR TO CONSTRUCTION AND REPORT ALL FINDINGS TO THE ARCHITECT AND URBAN WATERSHED GROUP LIMITED PRIOR TO CONSTRUCTION
2. CONTRACTOR TO REVIEW GEOTECHNICAL REPORT FOR COUNTER-BUOYANCY MEASURES PRIOR TO CONSTRUCTION

#### CONTRACTORS NOTES AND PRIOR TO CONSTRUCTION:

1. AT THE TIME OF TENDER, THE CONTRACTOR SHALL REVIEW THE DRAWINGS AND INVESTIGATE ALL EXISTING SERVICES, WATERMAINS, UTILITIES AND SEWERS AT POINTS CROSSING TO THEIR SATISFACTION AND MODIFY THEIR QUOTATION ACCORDINGLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE ADJUSTMENT OF ALL UTILITIES, SEWERS AND WATERMAINS AS REQUIRED TO COMPLETE THE CONSTRUCTION OF THE SITE SERVING. THE CONTRACTOR SHALL REPORT IMMEDIATELY TO THE ARCHITECT, AND URBAN WATERSHED GROUP LTD. ANY DISCREPANCIES FOUND ON THIS DRAWING.
2. AT THE TIME OF TENDER THE CONTRACTOR AND THEIR SUPPLIERS SHALL REVIEW THE GEOTECHNICAL INFORMATION FOR THE PROJECT AND SHALL ALLOW FOR THE DESIGN AND INCORPORATION OF ANTI-BODY MEASURES FOR ALL SUBSURFACE SERVING STRUCTURE.
3. THE CONTRACTOR TO REQUIRE A ROAD OCCUPANCY PERMIT ((R.O.W.)) FROM THE (MUNICIPAL WORKS DEPARTMENT) PRIOR TO CONSTRUCTION FOR ANY WORK RELATED INSIDE THE MUNICIPAL RIGHT OF WAY.
4. UPON COMPLETION OF THE SEWER INSTALLATION THE CONTRACTOR SHALL COMPLETE TESTING AS REQUIRED WHICH WILL INCLUDE, BUT NOT BE LIMITED TO, CCTV, DEFLECTION, INFILTRATION / EXFILTRATION AND AIR TESTING. THE WATERMAIN SHALL ALSO BE TESTED FOR CONTINUITY, PRESSURE AND CHLORINATION BY A QUALIFIED THIRD PARTY FIRM. ALL TESTING SHALL BE IN ACCORDANCE WITH APPLICABLE MUNICIPAL AND ONTARIO BUILDING CODE STANDARDS. RESULTS SHALL BE FORWARDED TO THE ARCHITECT AND URBAN WATERSHED GROUP IMMEDIATELY FOLLOWING THE TEST. THE CONTRACTOR SHALL ALSO SUBMIT AS-BUILT ELEVATIONS AND LOCATIONS OF THE SERVING AND GRADING IMMEDIATELY FOLLOWING CONSTRUCTION OF EACH STAGE OF WORK.

#### NOTE:

ALL DRAWINGS IN THIS SET SHALL BE READ IN CONJUNCTION WITH EACH OTHER. DRAWINGS INCLUDE THE FOLLOWING:

1. SITE GRADING PLAN - DWG No. 21002- GR1
2. SITE SERVICING PLAN - DWG No. 21002- SS1
3. SITE EROSION & SEDIMENT CONTROL - DWG No. 21002- ESC1

| NO. | DESCRIPTION                   | BY | DATE       |
|-----|-------------------------------|----|------------|
| 2.  | ISSUED FOR SITE PLAN APPROVAL |    | 2021/06/07 |
| 1.  | ISSUED FOR CLIENT REVIEW      |    | 2021/04/16 |

| BENCHMARK:                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ELEVATION:<br>ELEVATIONS ARE GEODETIC IN ORIGIN AND WERE DERIVED FROM OBSERVED REFERENCE POINTS (ORP) USING THE LEICA SMARTNET NETWORK (2010 EPOCH) AND ARE REFERRED TO THE CGVD28-1978 (HTV2.0) DATUM.                                                           |
| BEARING NOTE:<br>BEARINGS ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CGRS) (2010 EPOCH), FOR BEARING COMPARISONS. A ROTATION OF 0°54'19" COUNTER-CLOCKWISE WAS APPLIED TO BEARINGS ON P1. |

| LEGEND:                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PROPERTY LINE<br>EXISTING VALVE & BOX<br>EXISTING HYDRANT & VALVE<br>EXISTING STORM MANHOLE<br>EXISTING SINGLE/DOUBLE CATCHBASIN<br>EXISTING SANITARY MANHOLE<br>PROPOSED STORM MANHOLE<br>38mm T-10 NEPTUNE NORMAL OPERATING RANGE (0.46 TO 22.73m/h) WATER METER TO BE INSTALLED INSIDE THE BUILDING<br>BACKFLOW DEVICE TO BE INSTALLED INSIDE THE BUILDING AS PER CITY OF BARRIE BY-LAW 2010-102. |



DESIGNED BY: P. ELLIS  
DRAWN BY: B. KLESS  
CHECKED BY: J. HARTMAN  
SCALE: 1:300

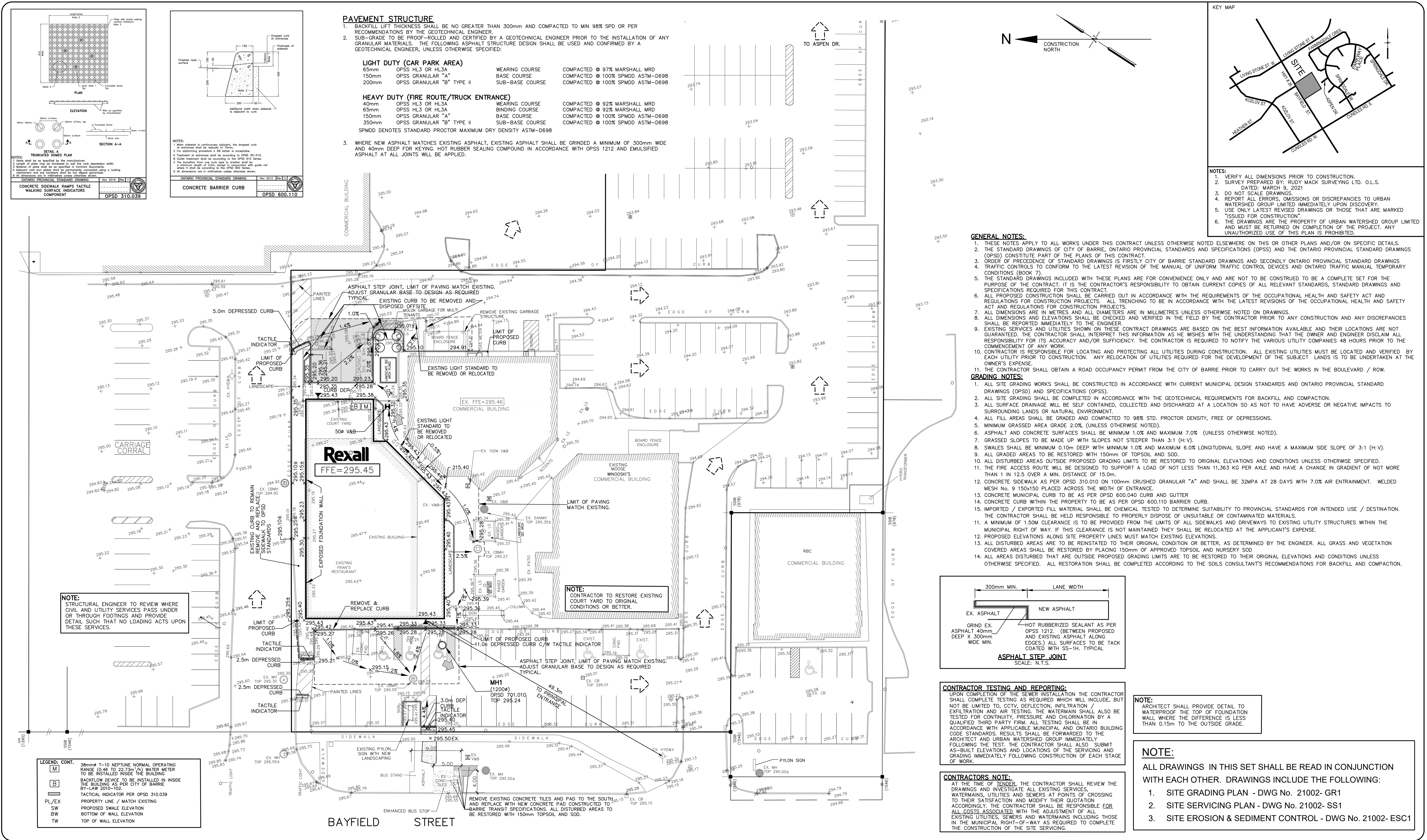
15955 AIRPORT ROAD, SUITE 304  
CALEDON EAST, ONTARIO, L7C 1H9  
PHONE: (905) 584-1458 FAX: (905) 584-1461

**Urban Watershed Group Ltd.**  
A Member of the **GREENland** Group of Companies  
urbanwater@grnland.com

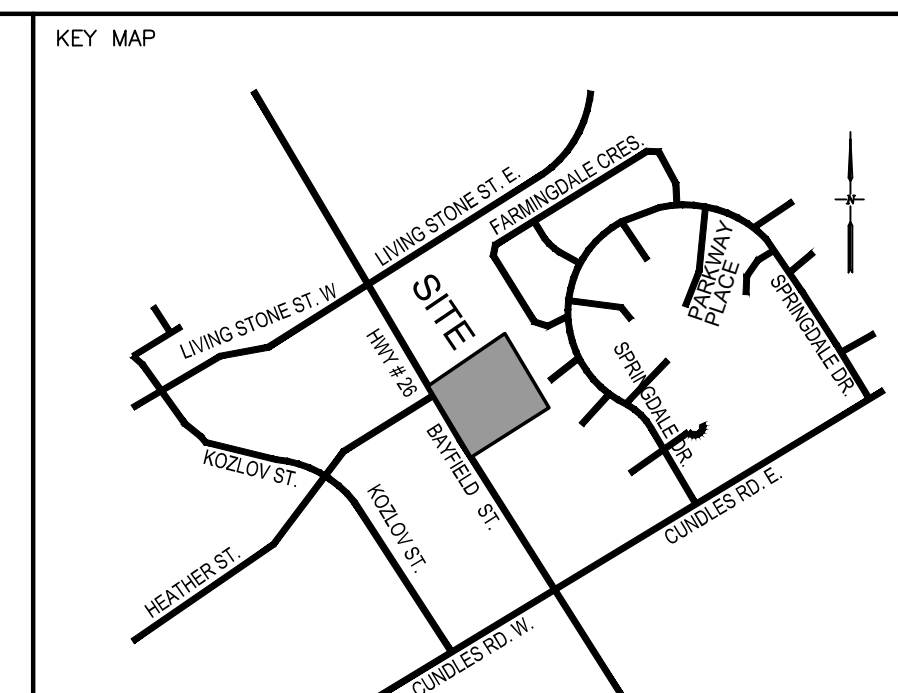
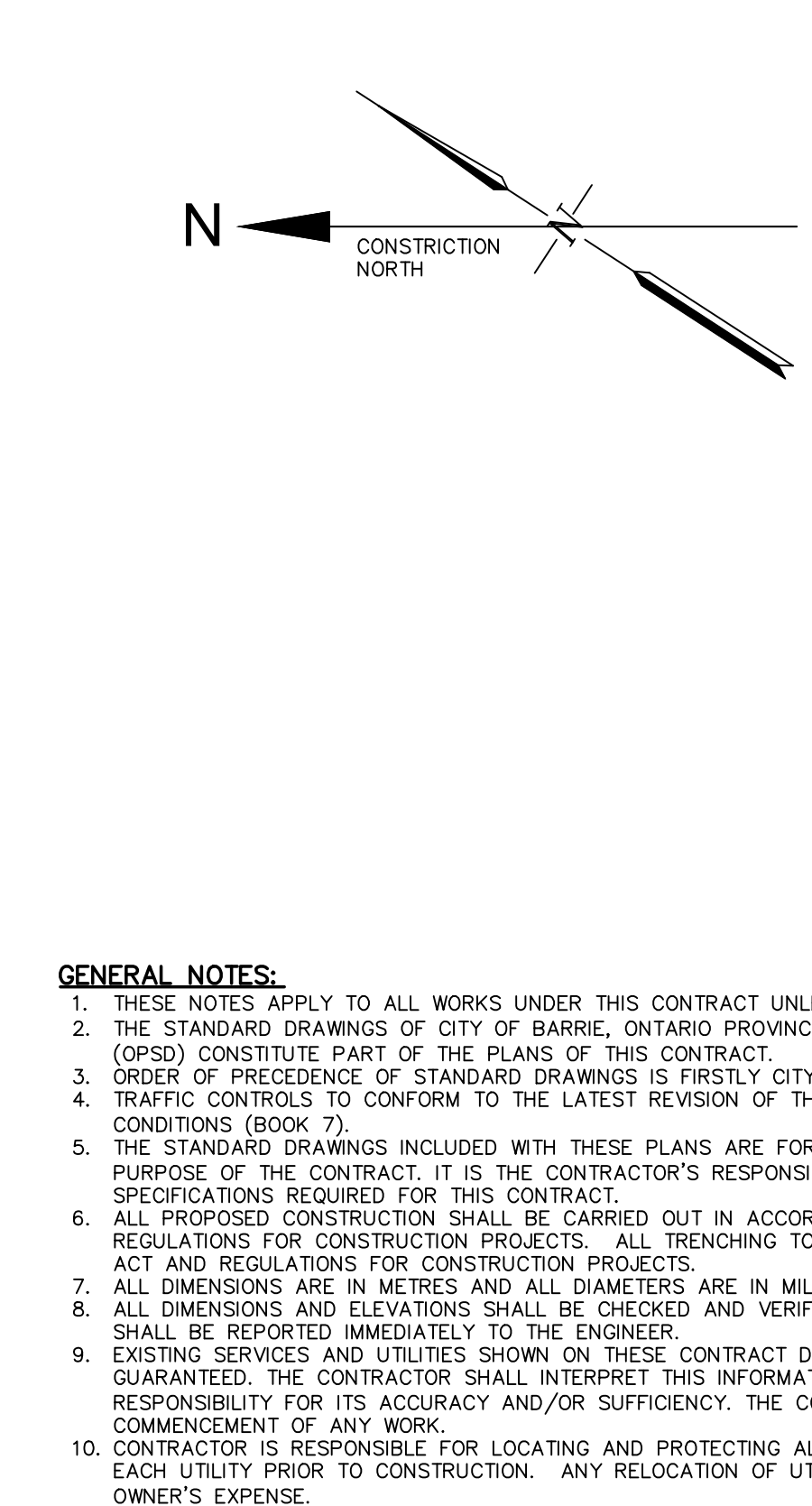
PROJECT NAME:  
PROPOSED RETAIL DEVELOPMENT -  
REXALL PHARMACY GROUP LTD  
407 BAYFIELD STREET  
BARRIE, ONTARIO  
CITY FILE: D28-056-2020

DRAWING NAME:  
**SITE SERVICING PLAN**









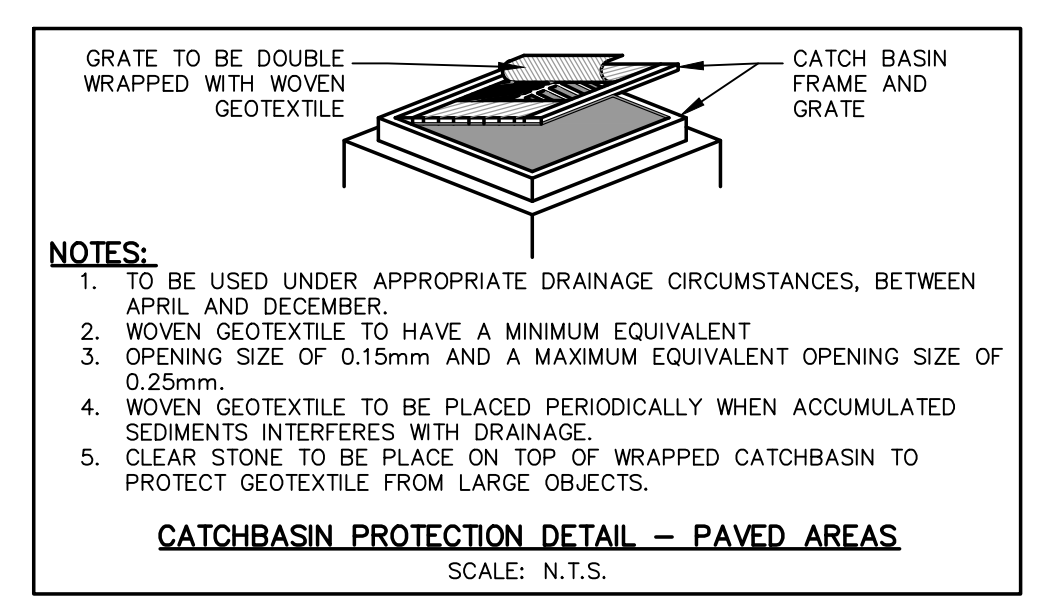
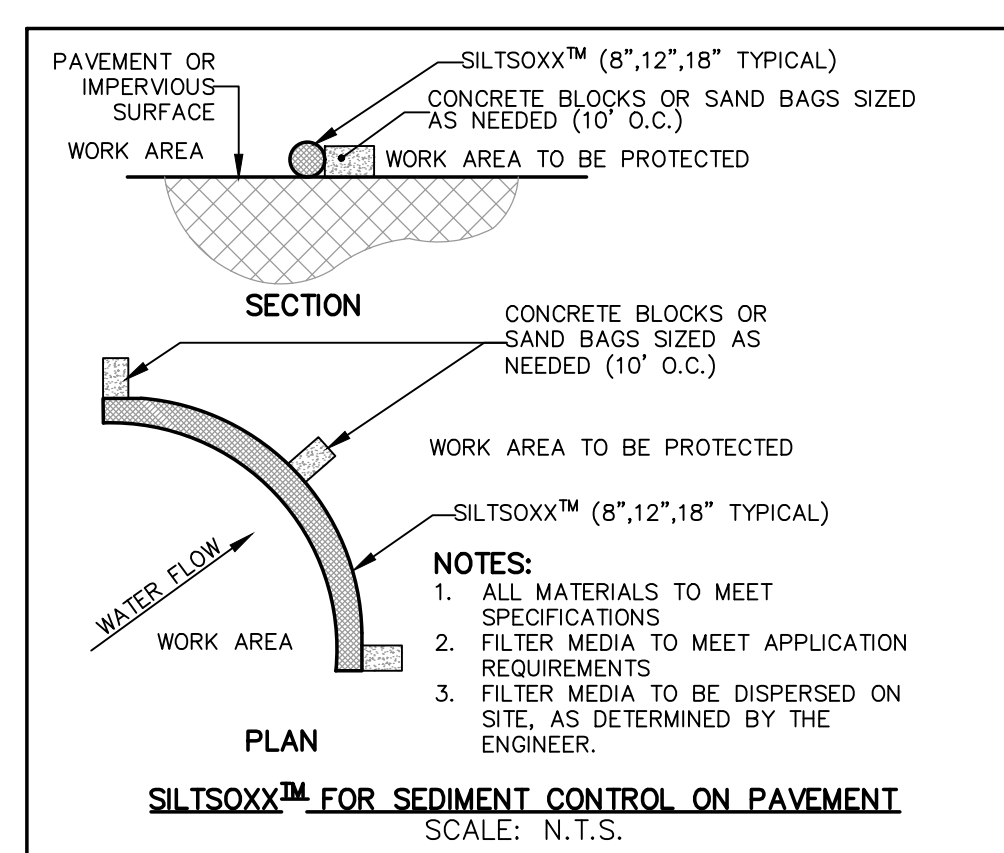
- NOTES:**
1. VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
  2. SURVEY PREPARED BY: RUDY MACK SURVEYING LTD. O.L.S.  
DATED: MARCH 9, 2021
  3. DO NOT SCALE DRAWINGS.
  4. REPORT ALL ERRORS, OMISSIONS OR DISCREPANCIES TO URBAN WATERSHED GROUP LIMITED IMMEDIATELY UPON DISCOVERY.
  5. USE ONLY LATEST REVISED DRAWINGS OR THOSE THAT ARE MARKED "ISSUED FOR CONSTRUCTION".
  6. THE DRAWINGS ARE THE PROPERTY OF URBAN WATERSHED GROUP LIMITED AND MUST BE RETURNED ON COMPLETION OF THE PROJECT. ANY UNAUTHORIZED USE OF THIS PLAN IS PROHIBITED.

GENERAL NOTES:

1. THESE NOTES APPLY TO ALL WORKS UNDER THIS CONTRACT UNLESS OTHERWISE NOTED ELSEWHERE ON THIS OR OTHER PLANS AND/OR ON SPECIFIC DETAILS.
2. THE STANDARD DRAWINGS OF CITY OF BARRIE, ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS (OPSS) AND THE ONTARIO PROVINCIAL STANDARD DRAWINGS (OPSD) CONSTITUTE PART OF THE PLANS OF THIS CONTRACT.
3. IN THE EVENT OF PROBLEMS WITH STANDARD DRAWINGS IS IT THE CITY OF BARRIE STANDARD DRAWINGS AND SECONDLY ONTARIO PROVINCIAL STANDARD DRAWINGS.
4. TRAFFIC CONTROLS TO CONFORM TO THE LATEST REVISION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND ONTARIO TRAFFIC MANUAL TEMPORARY CONDITIONS (BOOK 7).
5. THE STANDARD DRAWINGS INCLUDED WITH THESE PLANS ARE FOR CONVENIENCE ONLY AND ARE NOT TO BE CONSTRUED TO BE A COMPLETE SET FOR THE PURPOSE OF THE CONTRACT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN CURRENT COPIES OF ALL RELEVANT STANDARDS, STANDARD DRAWINGS AND SPECIFICATIONS RELATIVE TO THE PROJECT.
6. ALL PROPOSED CONSTRUCTION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS. ALL TRENCING TO BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
7. ALL DIMENSIONS ARE IN METRES AND ALL DIAMETERS ARE IN MILLIMETRES UNLESS OTHERWISE NOTED ON DRAWINGS.
8. ALL DIMENSIONS AND ELEVATIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION AND ANY DISCREPANCIES SHALL BE REPORTED IMMEDIATELY TO THE ENGINEER.
9. EXISTING SERVICES AND UTILITIES SHOWN ON THESE CONTRACT DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE AND THEIR LOCATIONS ARE NOT GUARANTEED. THE CONTRACTOR SHALL INTERPRET THIS INFORMATION AS HE WISHES WITH THE UNDERSTANDING THAT THE OWNER AND ENGINEER DISCLAIM ALL RESPONSIBILITY FOR ACCURACY AND/OR SUFFICIENCY. THE CONTRACTOR IS REQUIRED TO NOTIFY THE VARIOUS UTILITY COMPANIES 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY WORK.
10. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. ALL EXISTING UTILITIES MUST BE LOCATED AND VERIFIED BY EACH UTILITY PRIOR TO CONSTRUCTION. ANY RELOCATION OF UTILITIES REQUIRED FOR THE DEVELOPMENT OF THE SUBJECT LANDS IS TO BE UNDERTAKEN AT THE OWNER'S EXPENSE.
11. THE CONTRACTOR SHALL OBTAIN A ROAD OCCUPANCY PERMIT FROM THE CITY OF BARRIE PRIOR TO CARRY OUT THE WORKS IN THE BOULEVARD / ROW.

## EROSION AND SEDIMENT CONTROL NOTES

1. SEDIMENT CONTROL DEVICES ARE TO BE IN PLACE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL THE PARKING LOT HAS BEEN PAVED AND THE GRASS HAS ESTABLISHED GROWTH, SUBJECT TO APPROVAL BY THE ENGINEER. ALL SEDIMENT CONTROLS ARE TO BE REGULARLY INSPECTED AND REPAIRED BY THE CONTRACTOR THROUGHOUT THE DURATION OF CONSTRUCTION.
2. SEDIMENT CONTROL DEVICES ARE TO BE MAINTAINED THROUGHOUT ALL GRADING OPERATIONS AS PER CITY OF BARRIE STD. SCD-1233.
3. BAYFIELD STREET TO BE MAINTAINED FREE OF MUD, DEBRIS ETC. THROUGH AN ONGOING PROGRAM OF STREET SWEEPING, CLEANING AND SCRAPING AS REQUIRED.
4. CATCHBASIN PROTECTION DEVICES TO BE INSTALLED ON ALL PROPOSED CATCHBASINS AND CATCHBASIN MANHOLES IMMEDIATELY AFTER THEIR INSTALLATION.
5. TYPICAL MAINTENANCE REQUIREMENTS OF THE SILT FENCE AND CATCHBASIN PROTECTION DEVICES MAY INCLUDE: CLEANING / REPAIRING AND/OR REPLACEMENT OF EROSION GEOTEXTILE.
6. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE REGULARLY INSPECTED AND MAINTAINED BY THE CONTRACTOR, TO THE SATISFACTION OF THE CITY OF BARRIE AND THE SITE ENGINEER.
7. RAINFALL ADJUSTMENT PROTECTION DEVICES MUST BE INSPECTED A MINIMUM OF ONCE EVERY WEEK AND IMMEDIATELY FOLLOWING A SIGNIFICANT RAINFALL EVENT (RAINFALL 1CM OR GREATER). SEDIMENT PROTECTION MUST BE INSPECTED AND REPAIRED AS NECESSARY TO PREVENT ANY OFFSITE ENVIRONMENTAL IMPACTS AS PER CITY OF BARRIE BY LAW 2014-100. FREQUENT OBSERVATIONS OF CATCH BASINS SHOULD BE CONDUCTED.
8. WEEKLY INSPECTIONS OF SILTATION AND EROSION CONTROL MEASURES SHALL BE CONDUCTED ESPECIALLY AFTER EVERY RAIN EVENT, ANY NECESSARY REPAIRS TO EROSION CONTROL DEVICES ARE TO BE MADE IMMEDIATELY.
9. A SPILL CONTINGENCY PLAN THAT INCLUDES CONTACT INFORMATION AND ACTIONS TO BE TAKEN IN THE EVENT OF SPILL TO THE NATURAL ENVIRONMENT AND/OR THE CITY OF BARRIE STORM SEWER IS REQUIRED. ALL SPILLS SHALL BE REPORTED TO THE MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE SPILL ACTION CENTRE.
10. IN THE EVENT ANY SITE ALTERATION WITHIN THE SUBJECT PROPERTY, THE CONTRACTOR WILL APPLY FOR A SITE ALTERATION PERMIT, AS DESCRIBED WITHIN BY-LAW 2014-100.
11. A SPILL CLEAN-UP PLAN MUST BE PLACED AND ALL SPILLS SHALL BE REPORTED TO THE MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE SPILLS ACTION CENTRE AT 1-800-268-6066.
12. WRITTEN DOCUMENTATION WILL BE REQUIRED FOR ANY EXCESS FILL WHICH IS REMOVED FROM THE SITE, CONFIRMING QUANTITY AND QUALITY IS ACCEPTABLE FOR THE RECEIVING SITE. FILL QUALITY TO MEET STANDARDS SET OUT IN OREG 153/04 WITH RESPECT TO CONTAMINANTS.
13. PRIOR TO DISCHARGE TO MUNICIPAL SEWERS FOR DE-WATERING A DISCHARGE AGREEMENT MUST BE APPROVED BY ENVIRONMENTAL SERVICES, AS PER THE SEWER



**NOTE:**

ALL DRAWINGS IN THIS SET SHALL BE READ IN CONJUNCTION WITH EACH OTHER. DRAWINGS INCLUDE THE FOLLOWING:

1. SITE GRADING PLAN - DWG No. 21002- GR1
2. SITE SERVICING PLAN - DWG No. 21002- SS1
3. SITE EROSION & SEDIMENT CONTROL - DWG No. 21002- ESC1

|                  |                               |           |             |
|------------------|-------------------------------|-----------|-------------|
|                  |                               |           |             |
|                  |                               |           |             |
|                  |                               |           |             |
|                  |                               |           |             |
| 2.               | ISSUED FOR SITE PLAN APPROVAL |           | 2021/06/07  |
| 1.               | ISSUED FOR CLIENT REVIEW      |           | 2021/04/16  |
| <b>NO.</b>       | <b>DESCRIPTION</b>            | <b>BY</b> | <b>DATE</b> |
| <b>REVISIONS</b> |                               |           |             |

|               |                                                                                                                                                                                                                               |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BENCHMARK:    |                                                                                                                                                                                                                               |
| ELEVATION:    | ELEVATIONS ARE GEODETIC IN ORIGIN AND WERE DERIVED FROM OBSERVED REFERENCE POINTS (ORP) USING THE LEICA SMARTNET NETWORK (2010 EPOCH) AND ARE REFERRED TO THE CGVD28:1978 (HTV2.0) DATUM.                                     |
| BEARING NOTE: | BEARING ARE UTM GRID, DERIVED FROM OBSERVED REFERENCE POINTS, BY REAL TIME NETWORK (RTN) OBSERVATIONS, UTM ZONE 17, NAD83 (CSRS) (2010 EPOCH). FOR BEARING COMPARISONS, ROTATION OF 0°05'41" COUNTER-CLOCKWISE WAS APPLIED TO |

- |                                                                                     |                                   |                                                                                       |                                               |
|-------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------|
| <b>LEGEND:</b>                                                                      |                                   |                                                                                       |                                               |
| x 252.55                                                                            | PROPERTY LINE                     |                                                                                       | CATCHBASIN PROTECTION                         |
|                                                                                     | EXISTING ELEVATION                |  | DETAIL                                        |
|  | EXISTING SHEET FLOW               |                                                                                       | PAVED AREA SEE DETAIL                         |
|  | PROPOSED SHEET FLOW               |                                                                                       | THIS SHEET                                    |
|  | EXISTING VALVE & BOX              |  | SEDIMENT CONTROL ON PAVEMENT SEE DETAIL SHEET |
|  | EXISTING HYDRANT & VALVE          |                                                                                       |                                               |
|  | EXISTING STORM MANHOLE            |                                                                                       |                                               |
|  | EXISTING SINGLE/DOUBLE CATCHBASIN |                                                                                       |                                               |
|  | EXISTING SANITARY MANHOLE         |                                                                                       |                                               |

DESIGN BY:



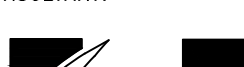
A circular professional engineer seal for the Province of Ontario. The outer ring contains the text "LICENSED PROFESSIONAL ENGINEER" at the top and "PROVINCE OF ONTARIO" at the bottom. In the center, the name "A. W. MCEWEN" is printed above the license number "100505061". A signature is written over the name. Below the license number, a date stamp reads "JUNE 7, 2021".

REVIEWED BY:



The seal is circular with the text "LICENSED PROFESSIONAL ENGINEER" around the top and "PROVINCE OF ONTARIO" around the bottom. In the center, it says "J.D. HARTMAN" and "17777". A date stamp "07 JUNE 2021" is written across the middle of the seal.

CONSULTANT:

 15955 AIRPORT ROAD, SUITE 304  
CALEDON EAST, ONTARIO, L7C 1H9  
PHONE: (905) 584-1458 FAX: (905) 584-1461

**Urban Watershed Group Ltd.**

*A Member of the **GREENLAND** Group of Companies*  
[urbanwater@grnland.com](mailto:urbanwater@grnland.com)

|                        |                                          |
|------------------------|------------------------------------------|
| DESIGNED BY: P. ELLIS  | DATE: MAR 10, 2021                       |
| DRAWN BY: B. KLESS     | SURVEYED BY: RUDY MACK<br>SURVEYING LTD. |
| CHECKED BY: J. HARTMAN | DWG. No.                                 |
| SCALE: 1:300           | 21002-ESC1                               |

PROJECT NAME:  
PROPOSED RETAIL DEVELOPMENT -  
REXALL PHARMACY GROUP LTD  
407 BAYFIELD STREET  
BARRIE, ONTARIO CITY FILE: D28-056-2020

DRAWING NAME:  
SITE EROSION & SEDIMENT  
CONTROL PLAN



## **Appendix B**

### **Fire Flow Calculation**

Barrie Rexall - Commercial Development

1. Required Fire Flow Calculation

$$F=220C(A)^{0.5}$$

F= the required fire flow in litres per minute

C= coefficient related to the type of construction

= 1.5 for wood frame construction (structure essentially all combustible)

= 1.0 for ordinary construction (brick or other masonry walls, combustible floor and interior)

= 0.8 for non-combustible construction (unprotected metal structural components, masonry or metal walls)

= 0.6 for fire resistive construction (fully protected frame, floors, roof)

A= the total floor area in square metres in the building being considered

$$F= 5726 \text{ l/min}$$

Type of Construction = Non- Combustible  
C= 0.9

Total GFA = 836 m<sup>2</sup>

2. Determine if occupancy type has a low contents fire hazard or high contents fire hazard.

Contents Classification

- |                        |      |
|------------------------|------|
| 1) Non-Combustible     | -25% |
| 2) Limited Combustible | -15% |
| 3) Combustible         | 0%   |
| 4) Free Burning        | 15%  |
| 5) Rapid Burning       | 25%  |

$$F= 4350 \text{ l/min}$$

Per Appendix A - Occupancy is Considered Low Fire Hazard

|       |      |
|-------|------|
| 1     | -25% |
| 0     | 0%   |
| 0     | 0%   |
| 0     | 0%   |
| 0     | 0%   |
| Total | -25% |

3. Automatic Sprinkler Protection Reduction

Sprinkler Reduction Ratings

- |                                                                                       |      |
|---------------------------------------------------------------------------------------|------|
| 1) Sprinkler System Conforms to NFPA 13 and other NFPA Sprinkler Standards            | -30% |
| 2) Water supply standard for both the sprinkler system and fire department hose lines | -10% |
| 3) Fully supervised sprinkler system                                                  | -5%  |

$$F= 0 \text{ l/min}$$

Sprinkler Reduction Ratings - Building is Sprinklered

|       |    |
|-------|----|
| 0     | 0% |
| 0     | 0% |
| 0     | 0% |
| Total | 0% |

4. Exposure to adjacent buildings

| Separation | Charge |
|------------|--------|
|------------|--------|

- |                  |     |
|------------------|-----|
| 1) 0 to 3.0m     | 25% |
| 2) 3.1 to 10.0m  | 20% |
| 3) 10.1 to 20.0m | 15% |
| 4) 20.1 to 30.0m | 10% |
| 5) 30.1 to 45.0m | 5%  |

The total % shall be the sum of the % of all sides but shall not exceed 75%.

$$F= 1958 \text{ l/min}$$

Number of Walls within Exposure Limits

|       |     |
|-------|-----|
| 0     | 0%  |
| 1     | 20% |
| 1     | 15% |
| 1     | 10% |
| 0     | 0%  |
| Total | 45% |

THEREFORE TOTAL FIRE FLOW REQUIRED = 6358 l/min  
or 105.96 l/s