



# FUNCTIONAL SERVICING REPORT

FOR THE PROPERTY OF PETRO CANADA PRODUCTS LOCATED AT

**6250 HAZELDEAN ROAD @ CARP ROAD,  
STITTSVILLE, ONTARIO**



Prepared For:  
Suncor Energy Products Partnership

Prepared by:  
J and B Engineering Inc.

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Markham, Ontario, L3R 5N8

April 17, 2026



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## 1. INTRODUCTION

### 1.1 Study Area

The study area is located at the Hazeldean Road and Carp Road intersection in Ottawa, Ontario. The address for this property is 6250 Hazeldean Road, Stittsville.

The study area consists of an existing one-storey c-store with a one-storey carwash building, underground fuel tanks with associated gas pumps. The proposed redevelopment scope includes addition of the existing c-store building with the drive-thru lane reconfiguration and proposed underground stormwater storage tank. The existing water and sanitary services are proposed to remain.

### 1.2 Background

This study addresses the servicing requirements for the proposed development which includes water, sanitary and stormwater servicing.

## 2. WATER SERVICE

### 2.1 Water Service – Existing

The site is serviced by an existing 50mm water service connected to the existing 400mm watermain located on Carp Road. The water service connects to a water valve located at the property line.

### 2.2 Water Service – Proposed

Based on the information provided to J+B, the proposed c-store building will have four (4) water closets, four (4) lavatories and three (3) sinks. As per Ontario Building Code, the proposed redevelopment will require 20 GPM (1.515 L/s) of flow, plus the assumed water consumption of 35 GPM (2.21 L/s) from the existing carwash based on historical data for similar type of car washes. The total required flow is 3.72 L/s. Refer to Appendix A for detailed calculation.

The existing 50mm water service will be replaced with a new 100mm water service to support the proposed redevelopment. The water service will be metered by a new 76mm water meter c/w backflow preventor within the mechanical room located in the carwash building. For connection locations and details refer to the Site Servicing Plan P-301 in Appendix D.

### 2.3 Water service Appurtenances

Considering ordinary construction and an automatic, standard water supply, the required fire flow for the building is estimated to be 4,000 L/minute using the FUS method. Refer to Appendix B for detailed fire flow calculations.

NFPA code requirements stipulate that all fuel dispensers be serviced by a fire hydrant which is located within 90 m from the furthest dispenser. The existing municipal fire hydrant is located at the northwest corner of the site at Hazeldean Road ROW covers a radius of approximately 90m from the furthest dispenser. No additional fire hydrants are required for the proposed redevelopment. Refer to Appendix E for details.

### **3. SANITARY**

#### **3.1 Sanitary - Existing**

The site is currently serviced by an existing 200mm sanitary sewer which discharges from an existing manhole located at southeast property line fronting Carp Road into a 250mm sanitary sewer located along Carp Road.

#### **3.2 Sanitary - Proposed**

As mentioned in Section 2, four (4) water closets, four (4) lavatories and three (3) sinks are proposed for the redevelopment. As per Ontario Building Code, the proposed redevelopment will generate 27 GPM (1.70 L/s) of flow, plus the assumed water consumption of 35 GPM (2.21 L/s) from the existing carwash. The total discharge flow is 3.91 L/s. Refer to Appendix C for detailed calculation.

The existing 250mm sanitary sewer has capacity to support the proposed sanitary demand. Please see Appendix C for more details.

### **4. STORM**

A Stormwater Management Report for this development has been prepared under a separate cover. It identifies the stormwater quantity and quality controls under which this site will operate to comply with the City's Design Guidelines.

#### **4.1 Pre-Development Conditions**

Under the existing conditions the site is serviced by ten (10) catch basins located at various parts of the property and discharges into an existing 300 storm sewer along Carp Road. The site currently has an 122mm orifice plate and an existing stormceptor as the water quantity/quality control measures.

#### **4.2 Post-Development Conditions**

The post development will increase the impervious area by approximately 8.4% and surface ponding will be reduced due to proposed grade work. Therefore, an underground storage chamber is proposed to accommodate the increased runoff. Refer to SWM report for detail.

## 5. SUMMARY AND CONCLUSION

In summary, all required conditions for the City of Ottawa have been satisfied as follows:

- Water service
- Sanitary service
- Stormwater management



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## **Appendix A – Domestic Water Usage**



## CITY OF OTTAWA

### THEORETICAL DOMESTIC WATER DEMAND CALCULATION

6250 Hazeldean Rd

#### Existing

	Fixture	Count	FU <sup>1</sup>	Total FU	Flow Rate (gal/min)	Flow Rate (L/s)
C-Store	Lavatory, 8.3LPM or less	1	2.0	2.0	-	-
	Water Closet w/ Flush Tank	1	2.2	2.2	-	-
	-	-	-	4.2	1.5	0.095
Carwash <sup>2</sup>	-	-	-	-	35	2.208
Total Flow						2.303

#### Proposed

	Fixture	Count	FU <sup>1</sup>	Total FU	Flow Rate (gal/min)	Flow Rate (L/s)
C-Store	Lavatory, 8.3LPM or less	4	2.0	8.0	-	-
	Water Closet w/ Flush Tank	4	2.2	8.8	-	-
	Sink	4	4.0	16.0	-	-
	-	-	-	32.8	20	1.515
Carwash <sup>2</sup>	-	-	-	-	35	2.208
Total Flow						3.723

Note 1 Fixture unit as per Table 7.6.3.2.-A of Ontario Building Code (2024)

Note 2 Water flow assumed based on historical data for similar type of car washes

Average Day Demand	Max. Daily Demand (1.5x avg. day)	Peak Hourly Demand (1.8 x avg. day)
l/s	l/s	l/s
2.07	3.10	3.72



## **Appendix B – Fire Flow Calculation**

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		<b>Project:</b>	<b>250358</b>		
		<b>Date:</b>	25-Mar-26		
<b>Fire Flow Calculation - FUS method</b>					
Coefficient	<b>Ordinary construction (Brick and other Masonry walls)</b>	C=	1		
Total Floor Area	C-store + Carwash	A=	<b>366.20</b>	sqm	
Fire flow		<b>F=</b>	<b>220 C √A</b>	l/m	
		=	4210.00	l/m	
		≈	<b>4000.00</b>	l/m	
Occupancy Hazard	<b>Combustible</b>	Surcharge	0.00	%	
		<b>F=</b>	<b>4000.00</b>	l/m	
Automatic Sprinkler System	<b>No</b>	Reduction	0.00	%	
		<b>F=</b>	<b>4000.00</b>	l/m	
Separation with adjacent buildings	<b>Greater than 45m</b>	Surcharge	0.00	%	
		<b>F=</b>	<b>4000.00</b>	l/m	
<b>Fire Flow</b>		≈	<b>4,000.00</b>	l/m	



## **Appendix C – Sanitary Flow Calculation**

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## CITY OF OTTAWA

### THEORETICAL SANITARY FLOW CALCULATION

6250 Hazeldean Rd

#### Existing

	Fixture	Count	FU <sup>1</sup>	Total FU	Flow Rate (gal/min)	Flow Rate (L/s)
C-Store	Lavatory, domestic type single	1	1.0	1	-	-
	Water Closet w/ Flush Tank	1	4.0	4	-	-
	-	-	-	5	21	1.325
Carwash <sup>2</sup>	-	-	-	-	35	2.208
Total Flow						3.533

#### Proposed

	Fixture	Count	FU <sup>1</sup>	Total FU	Flow Rate (gal/min)	Flow Rate (L/s)
C-Store	Lavatory, domestic type single	4	1.0	4	-	-
	Water Closet w/ Flush Tank	4	4.0	16	-	-
	Sink	3	1.5	5	-	-
	-	-	-	25	27	1.703
Carwash <sup>2</sup>	-	-	-	-	35	2.208
Total Flow						3.911

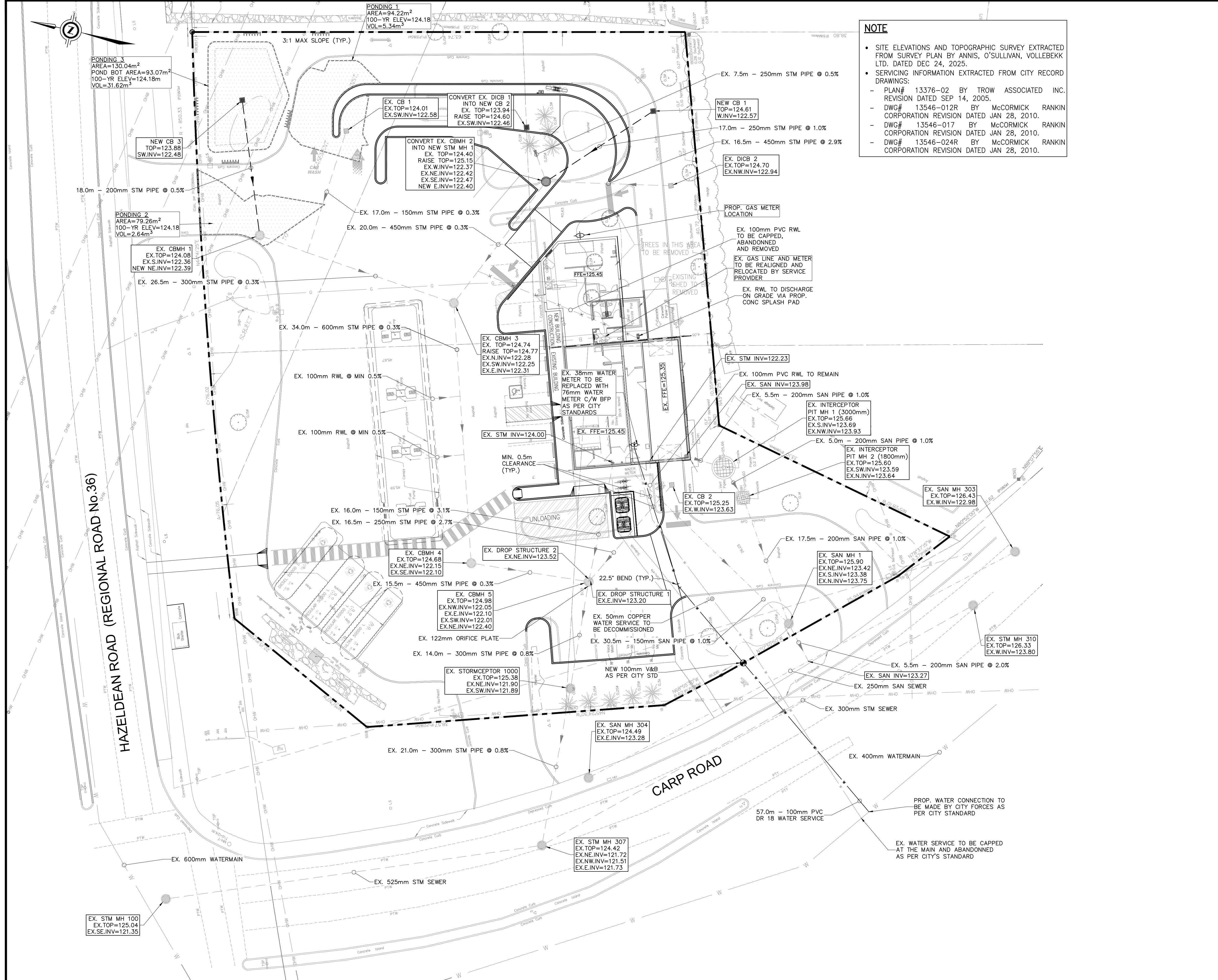
Note 1 Fixture Unit as per Table 7.4.9.3. of Ontario Building Code (2024)

Note 2 Water flow assumed based on historical data for similar type of car washes



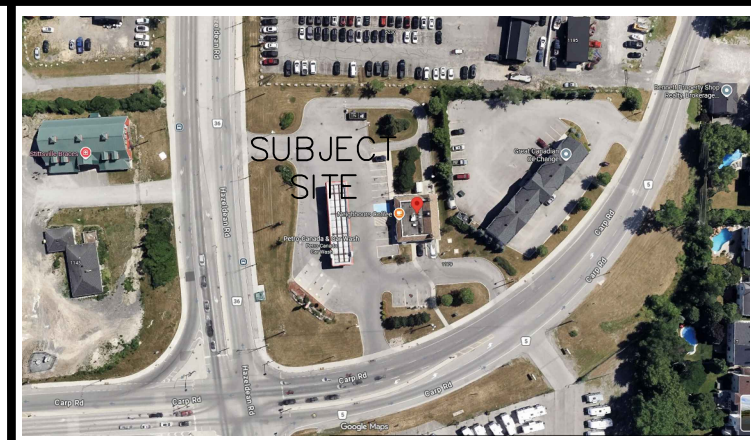
## **Appendix D – Site Servicing Plan**

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**NOTE**

- SITE ELEVATIONS AND TOPOGRAPHIC SURVEY EXTRACTED FROM SURVEY PLAN BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. DATED DEC 24, 2025.
- SERVICING INFORMATION EXTRACTED FROM CITY RECORD DRAWINGS:
  - PLAN# 13376-02 BY TROW ASSOCIATED INC. REVISION DATED SEP 14, 2005.
  - DWG# 13546-012R BY McCORMICK RANKIN CORPORATION REVISION DATED JAN 28, 2010.
  - DWG# 13546-017 BY McCORMICK RANKIN CORPORATION REVISION DATED JAN 28, 2010.
  - DWG# 13546-024R BY McCORMICK RANKIN CORPORATION REVISION DATED JAN 28, 2010.



**KEY PLAN**

**GENERAL NOTES**

- VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.
- DO NOT SCALE DRAWINGS.
- REPORT ALL DISCOVERIES OF ERRORS, OMISSIONS OR DISCREPANCIES TO THE DESIGN ENGINEER AS APPLICABLE.
- USE ONLY LATEST ISSUED DRAWINGS OR THOSE THAT ARE MARKED "ISSUED FOR CONSTRUCTION".
- DESIGN AND CONSTRUCTION OF THIS PROJECT SHALL COMPLY WITH THE PROVINCIAL AND LOCAL BUILDING CODES LATEST EDITION.
- ALL WORKS AND MATERIALS USED SHALL COMPLY AS REQUIRED BY THE BUILDING CODE LATEST EDITION.
- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS & SPECIFICATIONS.
- EVERYTHING IS TO BE CONSIDERED NEW UNLESS SPECIFIED OTHERWISE.

**REVISION TABLE**

REV.	DESCRIPTION	DRAWN	APP'D.	DATE
1	REVISED AS PER COMMENTS	BL	JS	10 MAR '26

**ISSUE TABLE**

TO	FOR	DATE
SUNCOR	ISSUED FOR REVIEW	05 MAR '26
SUNCOR	ISSUED FOR REVIEW	10 MAR '26
SUNCOR	ISSUED FOR SPA	17 APR '26

**TOPOGRAPHIC PLAN OF SURVEY OF PART OF LOT 23 CONCESSION 12 GEOGRAPHIC TOWNSHIP OF GOULBOURN CITY OF OTTAWA**

Surveyed by Annis, O'Sullivan, Vollebakk Ltd.

Underground Utility Services Marked on Surface (Paint) by a Third Party Located & Illustrated As Shown on This Plan

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations, UTM Zone 18 (75° West Longitude) NAD-83 (CSRS) (2010).

For bearing comparisons, a rotation of 0°46'00" clockwise was applied to bearings on plan P1, P2 & P3.

**METRIC**

ALL DIMENSIONS ARE IN MILLIMETRES U.N.O. CONTRACTOR TO CHECK/VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF WORK. ALL DISCREPANCIES TO BE REPORTED TO THE PROJECT DESIGNER. DO NOT SCALE DRAWINGS.



**ELEVATION NOTES**

- Elevations shown are geodetic and are referred to the CGVD28 geodetic datum, derived from Benchmark No. 0011968U118 having an elevation of 126.180 metres.
- It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that its relative elevation and description agrees with the information shown on this drawing.

**LEGEND**

- EXISTING CATCHBASIN
- EXISTING MANHOLE
- EXISTING CATCHBASIN MANHOLE
- NEW MANHOLE
- NEW CATCHBASIN
- EXISTING STORM LINE
- EXISTING SANITARY LINE
- EXISTING WATER LINE
- EXISTING GAS LINE
- PROPOSED STORM LINE
- PROPERTY LINE
- OVERLAND FLOW
- SURFACE PONDING AREA

**CONSULTANT**

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 CALGARY: 8841 STEELES AVE. SW. SUITE 200, CALGARY AB T2R 0E2, 403 505 2206



**DRAWING TITLE: SITE SERVICING PLAN**

**PROJECT: 6250 HAZELDEAN ROAD & CARP ROAD STITTVILLE, ON**

DRAWN BY:	BL	CAD INFO.:	SHEET SIZE D (559 x 864)
DRAWING SCALE:	1:250	CONSULTANT	PETRO-CANADA
DATE DRAWN:	05 MAR '26	CONSULTANT	250358-P-301
CHECKED BY:	JS	PLOT SCALE	1:1
APPROVED BY:	JS	PLOT CONFIGURATION	

STD No./OUTLET No. **65044** SHEET No. **P301**



## **Appendix E – Fire Hydrant Location**

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