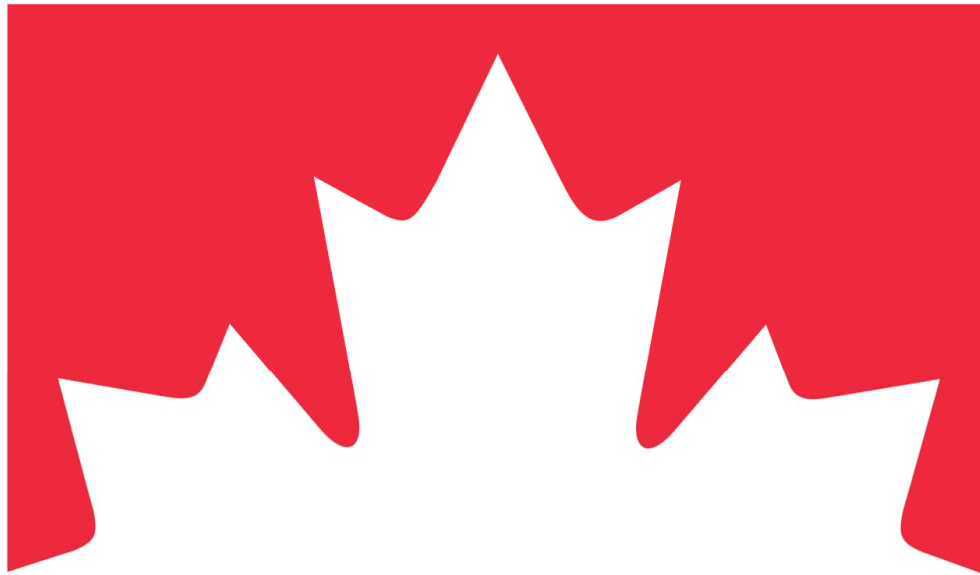




STORMWATER MANAGEMENT REPORT

FOR THE PROPERTY OF PETRO CANADA PRODUCTS LOCATED AT

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



PETRO-CANADA

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Suncor Energy Products Partnership

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Rev. August 31, 2026



Stormwater Management Report

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Stormwater Management Report

1 INTRODUCTION

This stormwater management report was prepared on April 2026 by James Sam (P.Eng with direct experience with the Ministry related items for 15+ years in the civil field) for the site located in 6250 Hazeldean Rd to meet the stormwater management objectives set out by the MOE, City of Ottawa and the MECP and in a manner that mitigates any adverse effects. This report is accurate as of April 2026 based on the site assessment conducted in respect to the catchment area of the stormwater management works and following information provided:

- (1) Topographical and Legal survey by Annis, O'Sullivan, Vollebekk Ltd dated 24 Dec 2025
- (2) City Record Drawing obtained from City of Ottawa:
 - a. Dwg No. 13546-012R by McCormick Rankin Corporation revision dated 28 Jan 2010
 - b. Dwg No. 13546-017 by McCormick Rankin Corporation revision dated 28 Jan 2010
 - c. Dwg No. 13546-024R by McCormick Rankin Corporation revision dated 28 Jan 2010
 - d. Dwg No. 02 by Trow Associates Inc. revision dated 14 Sep 2005
 - e. Dwg No. 03 by Trow Associates Inc. revision dated 13 Oct 2005
- (3) Site plan prepared by K Paul Architect Inc dated 02 April 2026
- (4) Geotechnical Investigation for Pre-Construction Support of Future Development by SLR Consulting (Canada) Ltd. dated 20 Feb 2026.

2 GENERAL INFORMATION

2.1 Study Area

The study area is located at the North-East quadrant of Hazeldean Road – Carp Road intersection with a municipal address of 6250 Hazeldean Road, Stittsville, Ontario. The location of Study area is shown in Figure 1.

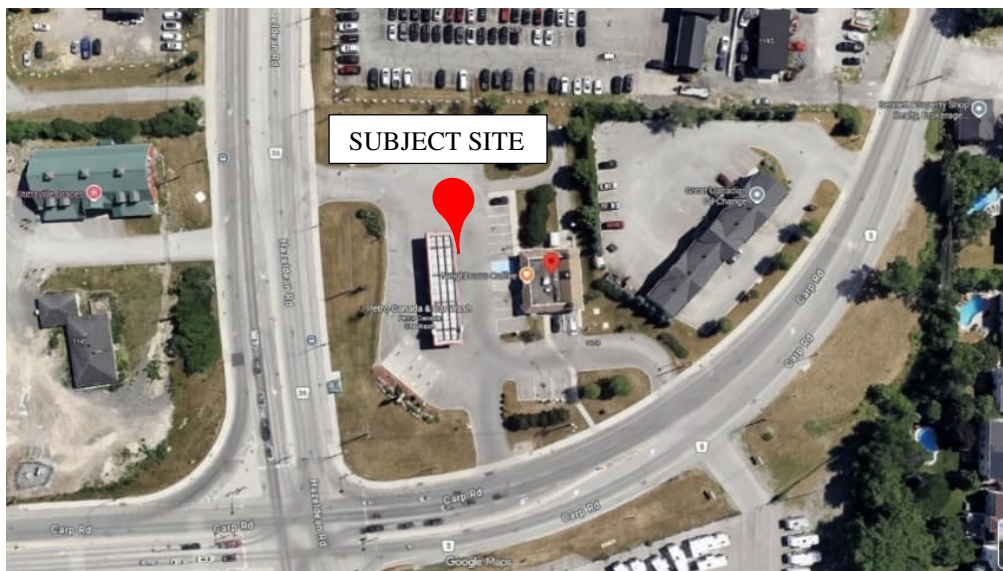


Figure 1 Study Area



Stormwater Management Report

I James Sam, conducted a site assessment and in my opinion, the proposed activity is an activity prescribed by section 2 of Environmental Protection Act - O. Reg. 245/11 -Registration under Part II.2 of the Act – General. The main activities proposed at this site as part of this redevelopment are fuel refilling, instore sales, drive through sales, and a carwash. Monitoring wells have been installed at various locations throughout the site to monitor any impact to the groundwater from the proposed activities at this site.

The site is located within the Mississippi Valley Conservation Authority and within the associated source protection area and not within any drinking water intake protection zones or wellhead protection areas. Moreover, the site is situated in Ottawa, and not located in the Lake Simcoe watershed, Niagara escarpment planning area, the portion of the Oak ridges moraine area or the protected countryside in the greenbelt plan established under the Greenbelt Act 2025.

The precipitation patterns in this area are characterized by a humid continental climate with precipitation throughout the year, including snowy winters and wet summer months. Although annual precipitation is consistent, the highest rainfall typically occurs in late spring and summer, particularly in June while early spring conditions are influenced by snowmelt and increased runoff.

The overland flow route is in the northerly direction towards Hazeldean Road. As per the Geotechnical Report prepared by SLR Consulting Ltd dated Feb 20, 2026, the groundwater depth at the site varies between 5.0 - 7.7 meters below ground surface. The nature of the soil beneath the topsoil is mentioned in the report to be mostly sand.

2.2 Background

This study has been prepared on behalf of Petro Canada Products to address Stormwater Management (SWM) requirements for the proposed C-store and drive-thru restaurant re-development. The proposed construction consists of a single storey commercial building addition, drive-thru lanes and an underground storage tank.

This SWM Report provides details for stormwater quantity and quality control to ensure that the proposed re-development will not have any adverse effects on the existing drainage condition.

2.3 Objectives of Drainage and Stormwater Management Study

The objectives of the stormwater management study are to develop a strategy for the project that will:

- Identify potential stormwater runoff (quality) impacts to the receiving watercourses from the proposed development area.
- Address concerns from the review agencies including the City of Ottawa, Mississippi Valley Conservation Authority (MVCA) and the Ministry of Environment, Conservation and Parks (MECP) for the preparation of a Stormwater Management study for quantity, quality, and erosion and sediment control purposes.
- Provide an appropriate site drainage system for safe operational use.



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The existing study area is currently a developed commercial site. The site is proposed to construct a building addition to the existing c-store and the associated drive-thru lanes. The existing gas bar and carwash will remain as-is. Proposed land use is expected to be maintained as commercial. Record drawings obtained from the City of Ottawa were reviewed to obtain information relative to drainage and stormwater management within the project area.

The Site Grading Plan 13776-02 and the Site Services plan 13776-3 prepared by Trow Associates Inc., revision dated Sep 14, 2005, and Oct 13, 2005, respectively, were combined with a current topographical survey and locates information prepared by Annis, O'Sullivan, Vollebekk Ltd., dated Dec 24, 2025, to provide an accurate design. Refer to Appendix A for details.

3 DESIGN

3.1 Design Criteria

General Stormwater Management guidelines and information was obtained from the City of Ottawa Design Criteria and Standard Drawings and the record Site Services Drawing prepared by Trow Associates Inc.

3.2 Site Drainage Conditions

3.2.1 Existing Drainage Conditions

The subject property is completely developed and occupies a total area of approximately 0.61 ha of which 0.21 ha is landscape. The general topography of the site has an overland flow route in the northerly direction towards Hazeldean Road. For the 2–100-year storm events, the site is self contained the storm runoff which is conveyed and capture by catchbasins located throughout the site prior to discharging into the 525mm storm sewer system along Carp Road. Since the subject site is a re-development, the pre-development condition will be determined using the more conservative runoff coefficient of 0.5 or the actual existing site runoff coefficient. The surface runoff coefficient for the study area under existing conditions is shown in Table 3-1 below.

Surface Composition		Impervious	Pervious	Combined
Existing Condition	(m ²)	3940.72	2118.58	6059.30
	(ha)	0.394	0.212	0.606
Runoff Coefficient		0.900	0.250	0.500

Table 3-1 Existing Runoff Coefficients



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3.2.2 Target Release Rate

Considering the subject property area is relatively small (less than 4.0ha as per City of Ottawa's Standard), the "Modified Rational Method" was used to generate the 2-year target release rate for the existing condition using the designated runoff coefficient for the overall subdivision (Refer to Pre- and Post-development Plan P-304 in the Appendix for details), and the Intensity was calculated as per section 3.2 of the City of Barrie Infrastructure Design Standard. The calculated allowable release rate for the project site is as follows:

$$Q = 0.00278 C I A \quad \leftarrow \text{Equation (1)}$$

Where Q:=Maximum Runoff Rate (m^3/sec)

C:=Runoff Coefficient

I:=Rainfall Intensity (mm/hr) (2-year storm event)

A:=Drainage Area (ha)

$$Q_{\text{target}} = 0.00278 * 0.5 * 76.81 * 0.606$$

$$Q_{\text{target}} = 0.0647 \text{ m}^3/\text{sec}$$

3.2.3 Future Drainage Conditions

The proposed development will consist of a single-story commercial building addition with associated drive-thru lanes and will maintain the existing car wash and gas bar. The coverage area will remain the same as 0.61 ha; however, the stormwater runoff is expected to increase from $C = 0.50$ to $C = 0.71$ as the overall imperviousness increases with the re-development due to increase of drive through lanes. Table 3-2 below shows the weighted surface runoff coefficient.

Surface Composition		Impervious	Pervious	Combined
Proposed Condition	(m^2)	4272.18	1787.12	6059.30
	(ha)	0.43	0.18	0.61
Runoff Coefficient		0.90	0.25	0.71

Table 3-2 Future Runoff Coefficients

For estimating flows using the Rational Method for storms greater than the 10-year return storm, runoff coefficients are increased 10%, 20% and 25% for the 25-year, 50-year and 100-year storms respectively to account for additional runoff due to soil saturation and the reduced accuracy associated with larger storms. (Refer to Table 3-3).



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St. Event	Existing	Proposed
Runoff Coefficient		
2-Year	0.500	0.708
5-Year	0.500	0.708
10-Year	0.500	0.708
25-Year	0.550	0.779
50-Year	0.600	0.850
100-Year	0.625	0.885

Table 3-3 Adjusted Runoff Coefficients for 2–100-year Events

3.3 Proposed Stormwater Management Plan

3.3.1 Quantity Control

In order to satisfy the City's requirements, quantity control must be provided to ensure post-development peak run-off is being controlled to pre-development levels for the 2 – 100-year storm events.

Storm Event	Rainfall Intensity (mm/hr)				<Equation 1> Flow Rate (m ³ /sec)		
	a	b	c	I	Existing	Proposed	Excess Flow
2-year	733.0	0.8100	6.199	76.81	0.0647	0.0916	0.0269
5-Year	998.1	0.8140	6.053	104.19	0.0878	0.1243	0.0366
10-Year	1174.2	0.8160	6.014	122.14	0.1029	0.1457	0.0429
25-Year	1402.9	0.8190	6.018	144.69	0.1341	0.1899	0.0558
50-Year	1569.6	0.8200	6.014	161.47	0.1632	0.2312	0.0680
100-Year	1735.7	0.8200	6.014	178.56	0.1880	0.2663	0.0783

Table 3-4 Peak Flow 5-100 Year Events for the Subject Site

According to Ottawa Sewer Design Guideline, the 100-year storm post development runoff must be controlled to 2-year pre-development flow. In order to achieve the quantity control requirements, an orifice plate will be proposed to replace existing orifice at the storm outlet at EX. CBMH#5.

Sizing of the orifice is given by the formula:

$$Q = C A \sqrt{2 g h} \leftarrow \text{Equation (2)}$$

Where Q : = Flow Rate Through Orifice (m³/sec) = $Q_{\text{Allowable}}$

C : = Contraction Coefficient = 0.61 (For Orifice Plate)

A : = Area of Orifice Plate (m²)

g : = Acceleration Due To Gravity (m/sec²) = 9.81 (m/sec²)

h : = Pressure Head To Be Dissipated (m)



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By trial-and-error calculations, a 140mm orifice pipe is required to control the flow to the allowable release rate.

$$Q = (0.61)\pi \left(\frac{0.140}{2}\right)^2 \sqrt{2 * 9.81 * \left(124.18 - 122.01 - \left(\frac{0.140}{2}\right)\right)}$$

$$Q = 0.0623 \text{ m}^3/\text{sec}$$

The required onsite storage based on the orifice release rate is calculated using modified rational method and is shown below in.

Stm Event	Td	Id	Qpost	Qorifice	Excess Flow	Volume(cum)
100-year storm event	1	351.38	0.5240	0.0623	0.4618	27.708
	10	178.56	0.2663	0.0623	0.2040	122.429
	20	119.95	0.1789	0.0623	0.1166	139.968
	21	116.30	0.1734	0.0623	0.1112	140.102
	22	112.88	0.1683	0.0623	0.1061	140.050
	23	109.68	0.1636	0.0623	0.1013	139.829
	24	106.68	0.1591	0.0623	0.0968	139.454
	25	103.85	0.1549	0.0623	0.0926	138.936
	26	101.18	0.1509	0.0623	0.0886	138.288
	27	98.66	0.1471	0.0623	0.0849	137.518
	28	96.27	0.1436	0.0623	0.0813	136.636
	29	94.01	0.1402	0.0623	0.0780	135.650
	30	91.87	0.1370	0.0623	0.0748	134.566
	40	75.15	0.1121	0.0623	0.0498	119.565
	50	63.95	0.0954	0.0623	0.0331	99.386
	60	55.89	0.0834	0.0623	0.0211	75.992
Max Volume Required cum						140.102

Table 3-5 Required Storage Volume 100-year Storm Event

The 140mm orifice pipe, at outlet of EX. CBMH#5 will generate a required storage of 140.10m³. The storage is met by a combination of underground piping, storm drainage structures (CB's and MH's), dry ponding, and an underground storm storage chamber system. The generated storage is illustrated in Table 3-6.



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Structure	Diameter	Area	TOP	Max Water Level	Invert	Volume
	(mm)	(m ²)	(m)	(m)	(m)	(m ³)
EX. CBMH 5	1200	1.13	124.98	124.18	122.01	2.45
EX. CBMH 4	1200	1.13	124.68	124.18	122.10	2.35
EX. CBMH 3	1200	1.13	124.70	124.18	122.25	2.18
EX. CBMH 1	1200	1.13	124.08	124.08	122.36	1.95
EX. CB 1	600x600	0.36	124.01	124.01	122.58	0.51
NEW STM MH 1	1200	1.13	125.15	124.18	122.37	2.05
NEW CB 2	600x600	0.36	124.60	124.18	122.46	0.62
EX. DICB 2	600x600	0.36	124.70	124.18	122.94	0.45
EX. CB 2	600x600	0.36	125.25	124.18	123.63	0.20
NEW CB 1	600x600	0.36	124.61	124.18	122.57	0.58
					Sum	14.87
U/G Conduit		Diameter	Area	Length	Volume	
From	To	(mm)	(m ²)	(m)	(m ³)	
EX. CB 2	EX. CBMH 5	250	0.0491	16.50	0.81	
C-Store	EX. CBMH 5	150	0.0177	16.00	0.28	
Carwash	EX. CBMH 5	100	0.0079	5.50	0.04	
EX. DICB 2	NEW STM MH 1	450	0.1590	16.50	2.62	
NEW CB 2	NEW STM MH 1	250	0.0491	7.50	0.37	
NEW STM MH 1	EX. CBMH 3	450	0.1590	20.00	3.18	
EX. CB 1	EX. CBMH 3	250	0.0491	17.00	0.83	
EX. CBMH 1	EX. CBMH 3	300	0.0707	26.50	1.87	
EX. CBMH 3	EX. CBMH 4	600	0.2827	34.00	9.61	
Gasbar	EX. CBMH 4	100	0.0079	9.00	0.07	
Gasbar	EX. CBMH 4	100	0.0079	9.00	0.07	
EX. CBMH 4	EX. CBMH 5	450	0.1590	15.50	2.47	
NEW CB 1	EX. CBMH 2	250	0.0491	17.00	0.83	
				Sum	23.07	
Ponding Location	Pond Top Area	Pond Bottom Area	100-yr Elev	Depth	Volume	
	(m ²)	(m ²)	(m)	(m)	(m ³)	
EX. CB 1	94.22	0.00	124.18	0.17	5.34	
EX. CBMH 1	79.26	0.00	124.18	0.10	2.64	
				Sum	7.98	
Structure	Dimension			Volume		
	Area (m ²)	Height (m)	Stone Void	(m ³)		
StormTech SC-3500	101	1.676	0.4	99.60		

Table 3-6 Storage volumes provided by stormwater infrastructure and underground conduits.

Proposed Storage Volume For 100-Year Event (m ³)	
Catch Basins & Manholes	14.87
Underground Conduits	23.07
StormTech SC-3500	99.60
Surface Ponding	7.98
Total Provided	145.52

Table 3-7 Total storage volumes



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Table 3-7 provides a summary of the storage volume proposed for the subject site for a total storage of 145.52m³ which is more than the 140.10m³ estimated; hence maintaining the surface runoff storage requirements for the 100-year storm.

3.3.4 Quality Control

Quality control is serviced by an existing Oil water separator located at the storm outlet for the subject site just downstream of the control manhole identified as EX. CBMH 5. The existing OWS will be maintained to continue to provide water quality treatment. Refer to Appendix C for details.

Monitoring of discharge from the OWS is required in accordance with the ECA and documentation of the monitoring to be kept on file for a period of 5 years.

4 OPERATIONS AND MAINTENANCE

A sediment collection device (stormwater pretreatment device) and other methods are utilized to treat discharge that is leaving the site. Examples of pretreatment devices include, but are not limited to, an appropriately sized catch basin with sump, pretreatment catchment device and an OWS. Installation, operation, and maintenance of these devices shall be in accordance with manufacturer's recommendations. With this in place, most of the suspended solids captured on the site will be settle into the OWS. The pretreatment structures shall be inspected for any debris that will restrict inlet flow rates. Outfall structures such as orifice tube must also be inspected for any obstructions that would restrict outlet flow rates. OSHA Guidelines must be followed when inspecting or cleaning any structure. This manual should be used in conjunction with but does not supersede local regulations or regulatory authorities.

5 EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION

The erosion potential of the study area was assessed using methods described in the "MTO Drainage Management Manual" of temporary erosion and sediment control measures suitable for construction sites close to highways.

During Site construction, various temporary measures will be implemented to prevent the discharge of sediment laden Stormwater from the Site. These measures include silt fencing, catchbasin buffers and mud-mats, etc., as shown on Appendix D – Erosion and Sediment Control Plan P-302.

In addition to the above, the following "good housekeeping" measures are recommended:

- All exposed soil shall be stabilized as soon as possible with a seed and mulch application as directed by the Engineer.
- No construction activity or machinery shall intrude beyond the silt/snow fence or limit of construction area. All construction vehicles shall leave the site at designated locations as shown on the plans.
- Stockpiles of soil shall be set back from any watercourse and stabilized against erosion as soon as possible. A set back of at least 15m from any top-of-bank, watercourse or pond is required.
- Cleaning and repairs of mud-mats and any other temporary sediment control measures shall be completed as deemed necessary through regular inspection.

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- Sediment/silt shall be removed from the sediment control devices after storm events and deposited in areas as approved by the engineer.
- All re-graded areas within the development which are not occupied by buildings, roadways, sidewalks, or driveways shall be top-soiled and sodded/seeded immediately after completion of final grading operations as directed by the engineer.

6 SUMMARY AND CONCLUSIONS

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

- There is no increase in Stormwater flow from the Site.
- The existing OWS will be maintained to continue to provide water quality treatment.
- The Sediment and Erosion Control Plan demonstrates how erosion and sedimentation will be minimized during construction.

This SWM Report satisfies all requirements for stormwater quantity, quality, and erosion & sedimentation control.



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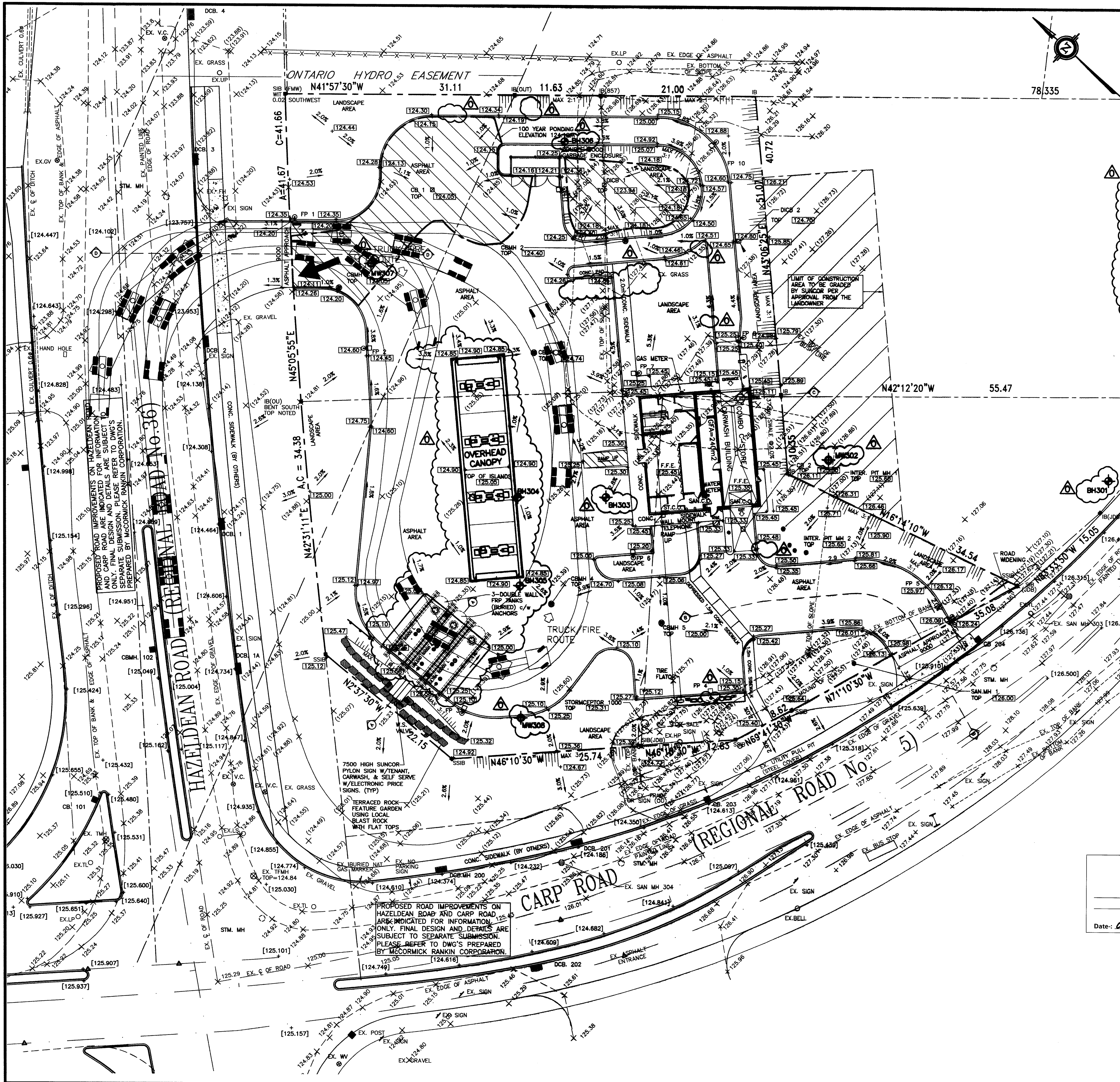
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PETRO CANADA PRODUCTS
6250 HAZELDEAN ROAD
STITTSVILLE, ON

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Appendix A EXISTING SITE GRADING PLAN



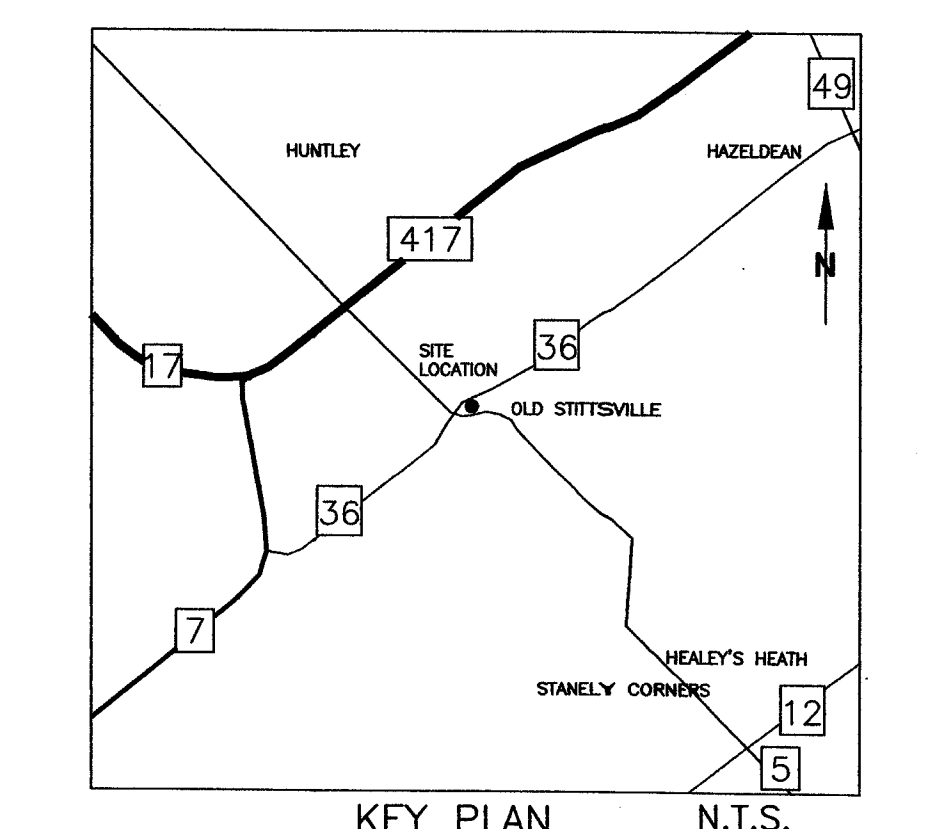
SITE GRADING NOTES:

- ALL THE CONSTRUCTION WORK FOR THIS PROJECT SHALL COMPLY WITH THE STANDARD DRAWINGS AND SPECIFICATIONS OF THE CITY OF OTTAWA AND THE ONTARIO PROVINCIAL STANDARDS AND SPECIFICATIONS INCLUDING THE CITY OF OTTAWA PRIVATE APPROACH BY-LAW REQUIREMENT.
- ALL SURFACE DRAINAGE SHALL BE SELF CONTAINED, COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. DRAINAGE OF ADJUTING PROPERTIES SHALL NOT BE ADVERSELY AFFECTED.
- PROPOSED ELEVATIONS ALONG SITE PROPERTY LINES MUST MATCH EXISTING ELEVATIONS, UNLESS OTHERWISE SPECIFIED AND/OR AGREED UPON.
- A SILT FENCE MUST BE PLACED AROUND THE PERIMETER OF THE SITE.
- THE PORTION OF THE DRIVEWAY WITHIN THE MUNICIPAL BOULEVARD MUST BE PAVED AS PER CITY OF OTTAWA STANDARDS.
- A UTILITY CLEARANCE RADIUS OF 1.2m BETWEEN THE PROPOSED DRIVEWAY ENTRANCE EDGE OF PAVEMENT AND ALL ABOVE GROUND UTILITIES MUST BE MAINTAINED.
- ALL PARKING AREAS AND DRIVEWAYS ARE TO BE HARD SURFACED WITH ASPHALT AND POURED-IN-PLACE CONCRETE CURBS TO SURROUND ALL PAVED AREAS.
- CONTRACTOR SHALL SATISFY HIMSELF OF ALL GEOTECHNICAL INFORMATION, INCLUDING BOREHOLE LOGS, IN-SITU CONDITIONS, AND GEOTECHNICAL RECOMMENDATIONS IDENTIFIED IN THE GEOTECHNICAL REPORT PREPARED BY TORONTO INSPECTION LTD.
- DRIVEWAY ENTRANCE SHALL BE CONSTRUCTED WITH HEAVY DUTY ASPHALT FROM THE BACK OF THE MUNICIPAL CURB OR EDGE OF PAVEMENT TO THE PROPERTY LINE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:
 - (A) 40mm COMPACTED DEPTH OF H13 ASPHALT - TOP COURSE
 - (B) 50mm COMPACTED DEPTH OF H18 ASPHALT - BINDER COURSE
 - (C) 150mm COMPACTED DEPTH OF 20mm CRUSHER RUN LIMESTONE GRANULAR BASE
 - (D) 300mm COMPACTED DEPTH OF 50mm CRUSHER RUN LIMESTONE - GRANULAR SUB-BASE
- THE SURFACE OF ALL LOADING SPACES AND RELATED DRIVEWAYS, PARKING SPACES, AND MANOEUVRING AREAS WITHIN THE SITE SHALL BE PAVED WITH A HARD SURFACE. THE RECOMMENDED MINIMUM DEPTH REQUIREMENTS ARE AS FOLLOWS:
 - (A) 30mm COMPACTED DEPTH OF H13 ASPHALT - TOP COURSE
 - (B) 30mm COMPACTED DEPTH OF H18 ASPHALT - BINDER COURSE
 - (C) 150mm COMPACTED DEPTH OF 20mm CRUSHER RUN LIMESTONE GRANULAR BASE
 - (D) 150mm COMPACTED DEPTH OF 50mm CRUSHER RUN LIMESTONE - GRANULAR SUB-BASE
- ALL DISTURBED R.O.W. AREAS TO BE REINSTATED TO ORIGINAL CONDITION OR BETTER.
- CONCRETE CURB IS CONTINUOUS BETWEEN LANDSCAPE AREAS AND ASPHALT PAVING, UNLESS NOTED OTHERWISE.
- WHERE OPSD STANDARDS ARE USED THE CONTRACTOR MUST VERIFY THE CITY'S MOST CURRENT CRITERIA FOR POSSIBLE MODIFICATIONS OR REVISIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING ALL UTILITIES DURING CONSTRUCTION. UTILITIES THAT MAY EXIST ON THE SITE OR WITHIN THE STREET LINES MUST BE LOCATED BY THE RESPECTIVE UTILITY AND VERIFIED PRIOR TO CONSTRUCTION.
- SILTATION AND EROSION DURING CONSTRUCTION MUST BE CONTROLLED AS PER CITY STANDARDS, AND MAINTAINED IN GOOD CONDITION THROUGHOUT CONSTRUCTION PERIOD, UNLESS NOTED OTHERWISE.
- ALL LANDSCAPE AREAS TO SLOPE A MINIMUM OF 2%.
- GRASS AREAS SHALL BE PROVIDED WITH 100mm OF TOPSOIL AND SODDED AS PER OPSD 218.01 UNLESS NOTED OTHERWISE.
- PROVIDE SEDIMENT TRAPS AROUND PERIMETER OF ALL INLETS TO STORM SEWER UNTIL COMPLETION OF PAVING. SEDIMENT TRAPS TO CONSIST OF APPROVED GRANULAR MATERIAL, A MINIMUM OF 1.0m SURROUNDING INLET AND MINIMUM 0.3m THICKNESS.
- UTILITIES TO BE RELOCATED ARE AT OWNER'S EXPENSE.
- ALL UNDERGROUND SERVICE MATERIALS AND INSTALLATIONS TO BE IN ACCORDANCE WITH LATEST STANDARDS AND CODES.
- ROAD OCCUPANCY PERMIT MUST BE OBTAINED 48 HOURS PRIOR TO COMMENCING ANY WORKS WITHIN THE MUNICIPAL ROAD ALLOWANCE.
- ALL CATCHBASIN MANHOLES & MANHOLES W/ INLET CONTROL DEVICES MUST HAVE A MINIMUM 0.3m SLUMP AND TOP AS PER MUNICIPAL STANDARDS.
- FOR GENERAL NOTES REFER TO SITE PLAN, DWG #01.

STORM DRAINAGE:

- (A) ALL STORM WATER SHALL BE DIRECTED IN SUCH A MANNER THAT WATER WILL NOT ACCUMULATE AT OR NEAR A BUILDING INCLUDING FOUNDATION WALLS, WINDOWS, ENTRANCES AND WALKWAYS.
 - (B) WHERE THE EXISTING GRADE IS ALTERED DUE TO GRADING, EXCAVATION, FILLING OR ANY OTHER RELATED WORK ALL SUCH WORK SHALL BE UNDERTAKEN AND COMPLETED IN ACCORDANCE WITH GOOD ENGINEERING PRACTICE TO ENSURE STABLE CONDITIONS AND SO AS NOT TO ADVERSELY AFFECT OR DAMAGE PUBLIC OR PRIVATE PROPERTY.
 - (C) STORM DRAINAGE SYSTEM TO CONFORM TO THE STORM WATER MANAGEMENT REPORT PREPARED BY TROW ASSOCIATES INC.
- THE CONTRACTOR MUST PERFORM ALL NECESSARY WORKS TO ENSURE THAT NO SURFACE DRAINAGE PROBLEMS ARE CREATED OR ADJACENT TO PRIVATE OR PUBLIC LANDS BY REASON OF HIS DEVELOPMENT.

NO.	REVISIONS	DATE	BY	APP.
0	DWG UPDATED TO REFLECT SITE PLAN REV. "O". GRADING & LEGEND REVISED. BOREHOLES, MONITORING WELLS, SITE GRADING NOTES No. 8, 9 & 10 ADDED. NOTES RENUMBERED. ISSUED FOR CONSTRUCTION.	SEP 14 2005	A.B.	
G	DWG UPDATED TO REFLECT SITE PLAN REV. "J".	JULY 06 2005	A.B.	
F	DWG UPDATED TO REFLECT SITE PLAN REV. "I". PONDING ELEVATION, PONDING AREA, GRADING & LEGEND REVISED.	JUN 23 2005	A.B.	
E	DWG UPDATED TO REFLECT SITE PLAN REV. "F". PONDING ELEVATION, PONDING AREA, GRADING & LEGEND REVISED. CURB TURNOUT OUTLET DETAIL & SECTIONS DELETED.	OCT 25 2004	A.B.	
D	DWG UPDATED TO REFLECT SITE PLAN REV. "E". PONDING ELEVATION, PONDING AREA, GRADING & LEGEND REVISED. CURB TURNOUT OUTLET DETAIL ADDED.	SEP 28 2004	A.B.	



LEGEND:

IB	EX. IRON BAR	ST	EX. STORM SEWER
LS	EX. STANDARD L.B.	W	EX. SANITARY SEWER
LP	EX. LIGHT POLE	W	EX. WATER MAINS
HP	EX. HYDRO POLE	G	EX. GAS MAINS
UP	EX. UTILITY POLE	OH	EX. OVERHEAD HYDRO
TL	EX. TRAFFIC LIGHT	BB	EX. BELL SERVICES
BP	EX. BELL PEDESTAL	UH	EX. U/G HYDRO SERVICE
TP	EX. TRAFFIC PEDESTAL	ST	EX. STORM SEWER
WV	EX. WATER VALVE	S	EX. SANITARY SEWER
WC	EX. WATER VALVE CHAMBER	W	EX. WATER SERVICE
FL	EX. FIRE HYDRANT	G	EX. GAS SERVICE
C.O.	CLEAN OUT	H	EX. HYDRO SERVICE
RW	DOWNSPOUT	B	EX. BELL SERVICE
FP	FLOODPOLE	CB	EX. CONC. CURB
EX	EX. STORM M.H.	---	CONC. CURB
EX	EX. SANITARY M.H.	---	CURB CUT
EX	EX. CATCH BASIN	X (92.73)	EX. ELEVATION
EX	EX. SANITARY M.H.	X 92.53	EX. ELEVATION
EX	EX. CATCH BASIN	X 93.45	EX. ELEVATION
EX	EX. CATCH BASIN	X 92.53	EX. ELEVATION
EX	EX. CATCH BASIN	X 92.53	EX. ELEVATION

SCALE 1:250 METRES

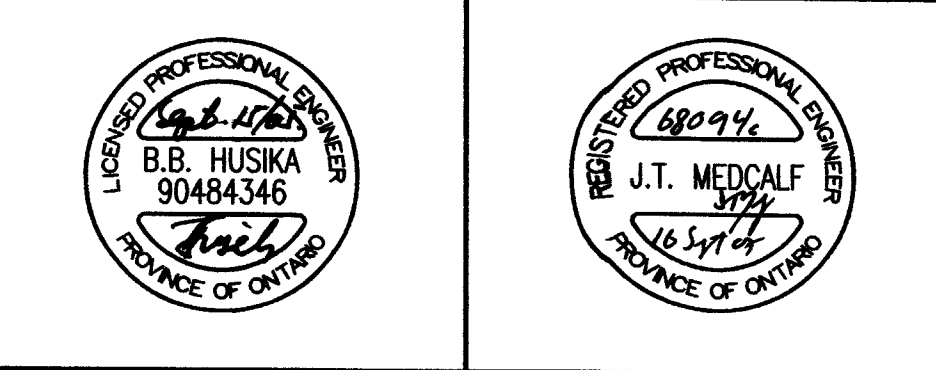
METRIC

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

SITE BENCHMARKS

ELEVATION NOTE: ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO WEBSTER & SIMMONS SURVEYING LTD. BENCHMARK, FIRE HYDRANT ON LOT 32 REGISTERED PLAN 4M-1192, BOLT ON FLANGE HAVING AN ELEVATION OF 124.37m.

SERVICE NOTE: SERVICE LOCATIONS SHOWN HEREON ARE APPROXIMATE. SIZES ARE TAKEN FROM AS-BUILT DRAWINGS PREPARED BY THE CITY OF OTTAWA WORKS DEPT.



OWNER/CLIENT:

SUNCOR ENERGY

SUNCOR ENERGY PRODUCTS INC. 36 YORK MILLS RD., TORONTO, ON M2P 2P5
TEL: (416) 733-7224, FAX: (416) 733-2113

Trow Associates Inc.
1595 Clark Boulevard
Brampton, Ontario L6T 4V1
TEL: (905) 783-9800 FAX: (905) 458-1479

DESIGNED: B.H./A.B.	DRAWN: A.B.	S/S NO:	I.D. No:
CHECKED: J.M./B.H.	DATE: SEP 2003		65044
SCALE: 1:250	PROJECT NO.:	DWG. NO.	
CAD FILE: 68094Asite0	0068094a		02



PETRO CANADA PRODUCTS
6250 HAZELDEAN ROAD
STITTSVILLE, ON

Stormwater Management Report

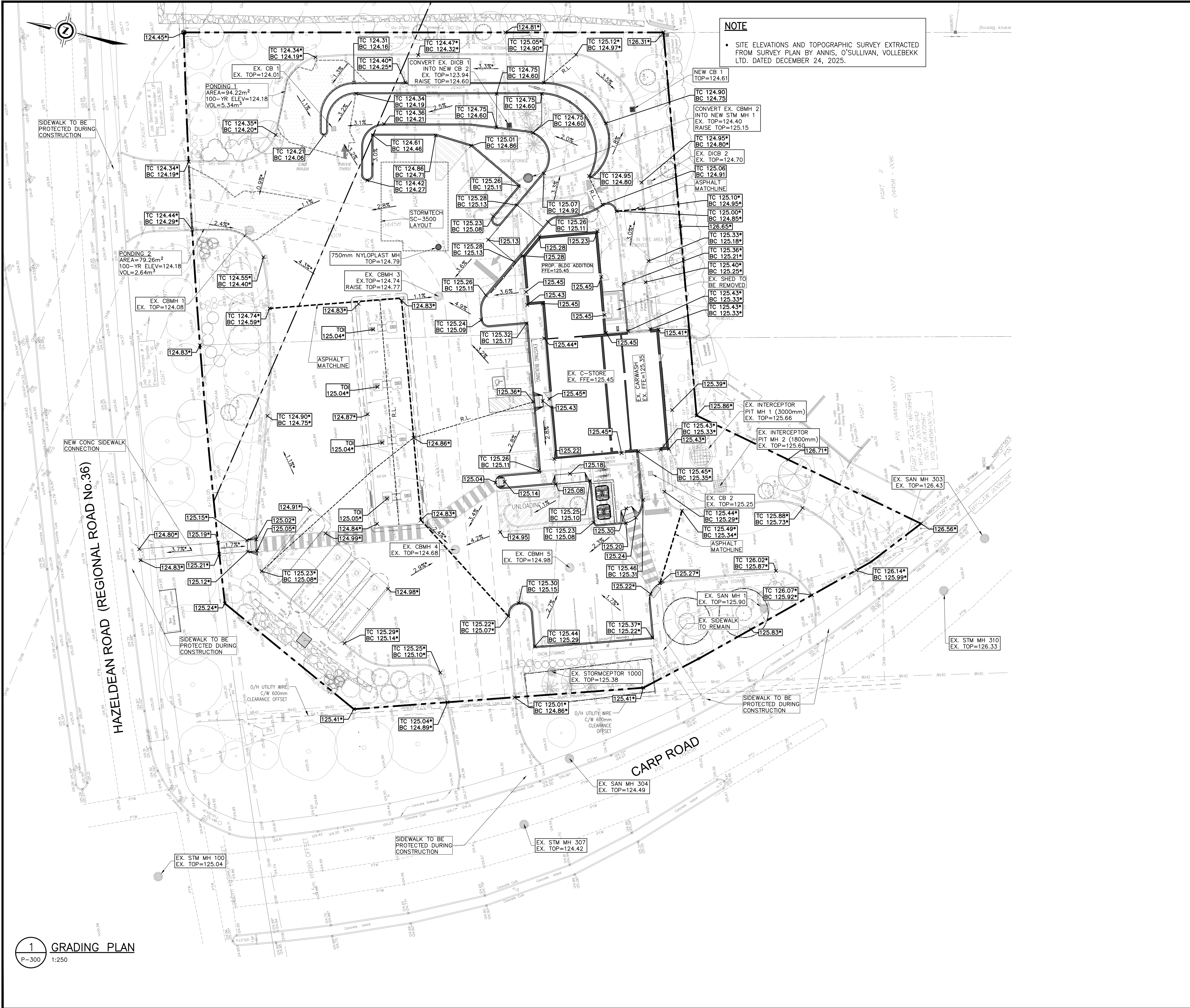
Appendix B EXISTING SITE SERVICING PLAN



PETRO CANADA PRODUCTS
6250 HAZELDEAN ROAD
STITTSVILLE, ON

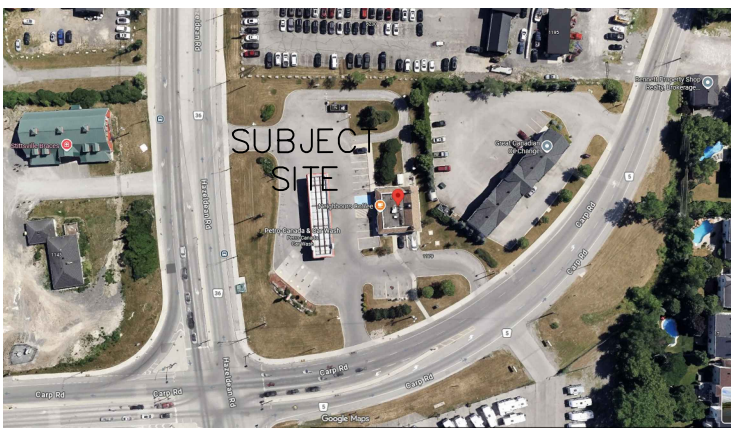
Stormwater Management Report

Appendix C PROPOSED SITE GRADING PLAN



NOTE

- SITE ELEVATIONS AND TOPOGRAPHIC SURVEY EXTRACTED FROM SURVEY PLAN BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD. DATED DECEMBER 24, 2025.



KEY PLAN
NTS

GENERAL NOTES

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

**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 (Point) 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.

ELEVATION NOTES

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

LEGEND

- EXISTING ELEVATION
- EXISTING CATCHBASIN
- EXISTING MANHOLE
- EXISTING CATCHBASIN MANHOLE
- PROPOSED SLOPE
- EXISTING SLOPE
- PROPOSED ELEVATION
- EXISTING ELEVATION TO MATCH PROP. ELE. (CURB TOP)
- PROP. ELE. (CURB BOTTOM)
- NEW MANHOLE
- NEW CATCHBASIN
- PROPERTY LINE
- ASPHALT MATCHLINE
- RIDGE LINE
- OVERLAND FLOW
- SURFACE PONDING AREA

REVISION TABLE

REV.	DESCRIPTION	DRAWN	APP'D.	DATE
1	REVISED AS PER COMMENTS	BL	JS	10 MAR '26
2	REVISED AS PER COMMENTS	BL	JS	31 AUG '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
SUNCOR	ISSUED FOR SPA	31 AUG '26

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.

SEAL



CONSULTANT



DRAWING TITLE:

SITE GRADING 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-300
CHECKED BY:	JS	PLOT SCALE	1:1
APPROVED BY:	JS	PLOT DATE	
STO. No./OUTLET No.		PLOT CONFIGURATION	

65044

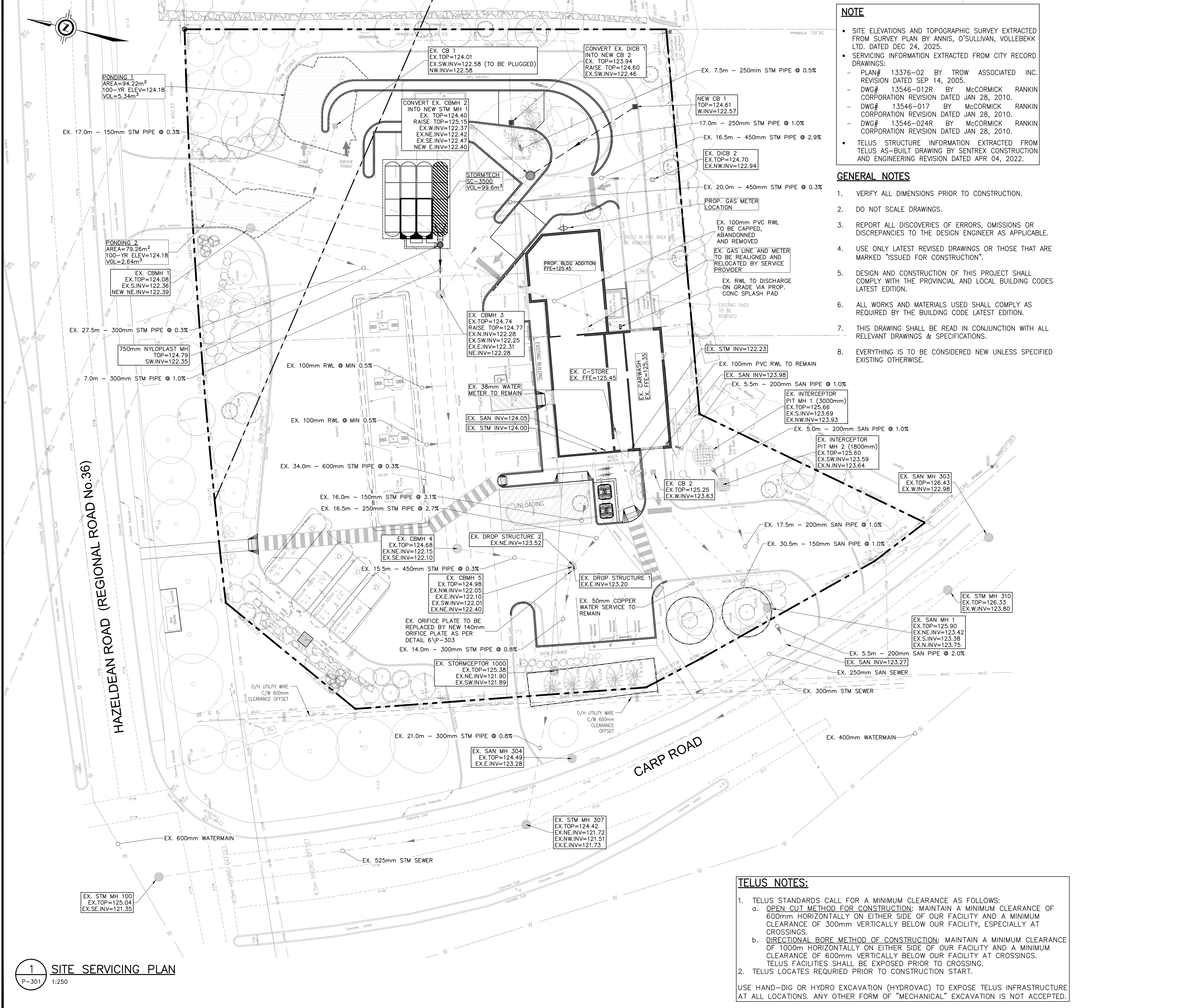
P300



PETRO CANADA PRODUCTS
6250 HAZELDEAN ROAD
STITTSVILLE, ON

Stormwater Management Report

Appendix D PROPOSED SITE SERVICING PLAN

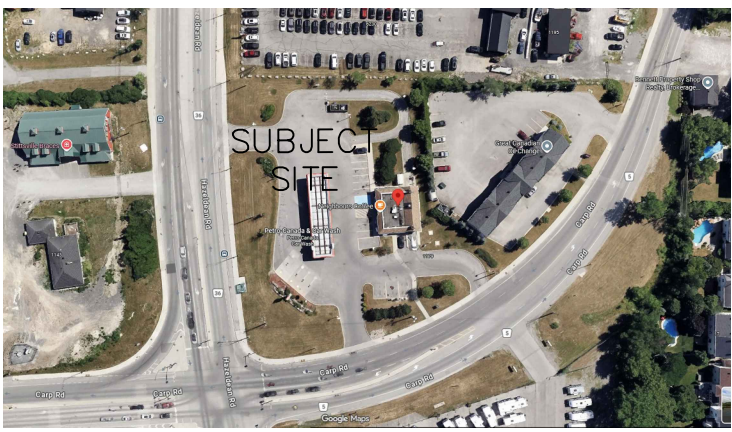


NOTE

- 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.
- TELUS STRUCTURE INFORMATION EXTRACTED FROM TELUS AS-BUILT DRAWING BY SENTREX CONSTRUCTION AND ENGINEERING REVISION DATED APR 04, 2022.

GENERAL NOTES

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KEY PLAN
NTS

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

Surveyed by Annis, O'Sullivan, Vollebekk 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.

ELEVATION NOTES

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- It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's 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
- EXISTING TELUS LINE
- PROPOSED STORM LINE
- PROPERTY LINE
- OVERLAND FLOW
- SURFACE PONDING AREA

REVISION TABLE

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

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SUNCOR	ISSUED FOR REVIEW	10 MAR '26
SUNCOR	ISSUED FOR SPA	17 APR '26
SUNCOR	ISSUED FOR SPA	31 AUG '26

METRIC

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SEAL



CONSULTANT



DRAWING TITLE:

SITE SERVICING PLAN

PROJECT:

6250 HAZELDEAN ROAD
& CARP ROAD
STITTVILLE, ON

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

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

TELUS NOTES:

- TELUS STANDARDS CALL FOR A MINIMUM CLEARANCE AS FOLLOWS:
 - OPEN CUT METHOD FOR CONSTRUCTION: MAINTAIN A MINIMUM CLEARANCE OF 600mm HORIZONTALLY ON EITHER SIDE OF OUR FACILITY AND A MINIMUM CLEARANCE OF 300mm VERTICALLY BELOW OUR FACILITY, ESPECIALLY AT CROSSINGS.
 - DIRECTIONAL BORE METHOD OF CONSTRUCTION: MAINTAIN A MINIMUM CLEARANCE OF 1000mm HORIZONTALLY ON EITHER SIDE OF OUR FACILITY AND A MINIMUM CLEARANCE OF 600mm VERTICALLY BELOW OUR FACILITY AT CROSSINGS. TELUS FACILITIES SHALL BE EXPOSED PRIOR TO CROSSING.
- TELUS LOCATES REQUIRED PRIOR TO CONSTRUCTION START.

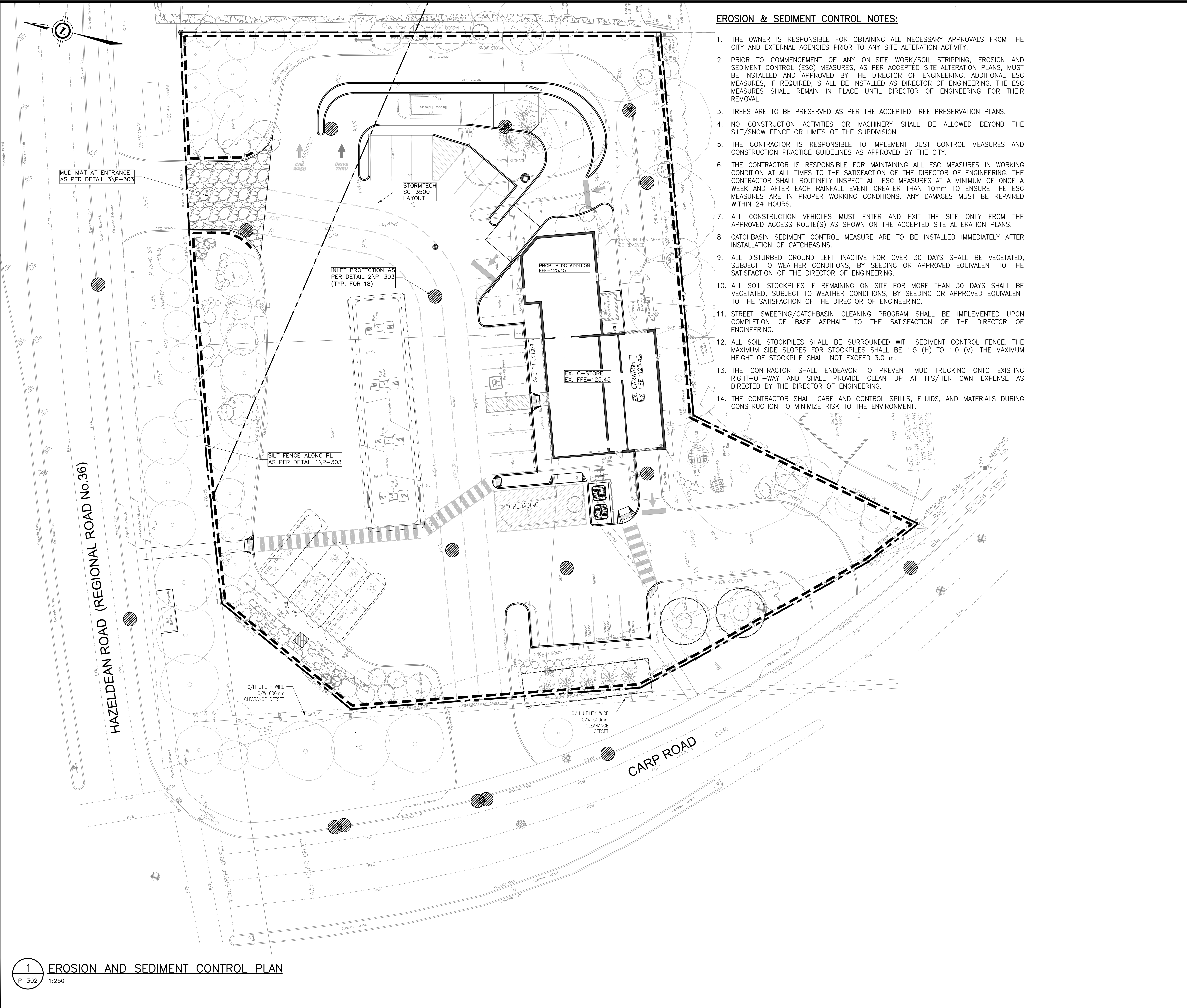
USE HAND-DIG OR HYDRO EXCAVATION (HYDROVAC) TO EXPOSE TELUS INFRASTRUCTURE AT ALL LOCATIONS. ANY OTHER FORM OF "MECHANICAL" EXCAVATION IS NOT ACCEPTED.



PETRO CANADA PRODUCTS
6250 HAZELDEAN ROAD
STITTSVILLE, ON

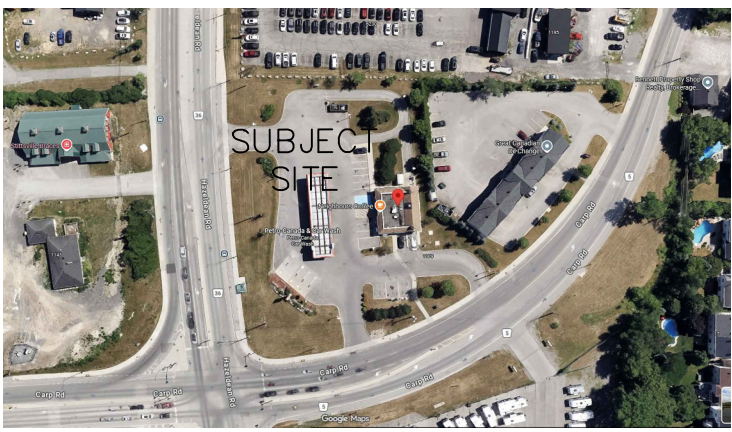
Stormwater Management Report

Appendix E PROPOSED EROSION AND SEDIMENT CONTROL PLAN



EROSION & SEDIMENT CONTROL NOTES:

1. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE CITY AND EXTERNAL AGENCIES PRIOR TO ANY SITE ALTERATION ACTIVITY.
2. PRIOR TO COMMENCEMENT OF ANY ON-SITE WORK/SOIL STRIPPING, EROSION AND SEDIMENT CONTROL (ESC) MEASURES, AS PER ACCEPTED SITE ALTERATION PLANS, MUST BE INSTALLED AND APPROVED BY THE DIRECTOR OF ENGINEERING. ADDITIONAL ESC MEASURES, IF REQUIRED, SHALL BE INSTALLED AS DIRECTOR OF ENGINEERING. THE ESC MEASURES SHALL REMAIN IN PLACE UNTIL DIRECTOR OF ENGINEERING FOR THEIR REMOVAL.
3. TREES ARE TO BE PRESERVED AS PER THE ACCEPTED TREE PRESERVATION PLANS.
4. NO CONSTRUCTION ACTIVITIES OR MACHINERY SHALL BE ALLOWED BEYOND THE SILT/SNOW FENCE OR LIMITS OF THE SUBDIVISION.
5. THE CONTRACTOR IS RESPONSIBLE TO IMPLEMENT DUST CONTROL MEASURES AND CONSTRUCTION PRACTICE GUIDELINES AS APPROVED BY THE CITY.
6. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ESC MEASURES IN WORKING CONDITION AT ALL TIMES TO THE SATISFACTION OF THE DIRECTOR OF ENGINEERING. THE CONTRACTOR SHALL ROUTINELY INSPECT ALL ESC MEASURES AT A MINIMUM OF ONCE A WEEK AND AFTER EACH RAINFALL EVENT GREATER THAN 10mm TO ENSURE THE ESC MEASURES ARE IN PROPER WORKING CONDITIONS. ANY DAMAGES MUST BE REPAIRED WITHIN 24 HOURS.
7. ALL CONSTRUCTION VEHICLES MUST ENTER AND EXIT THE SITE ONLY FROM THE APPROVED ACCESS ROUTE(S) AS SHOWN ON THE ACCEPTED SITE ALTERATION PLANS.
8. CATCHBASIN SEDIMENT CONTROL MEASURE ARE TO BE INSTALLED IMMEDIATELY AFTER INSTALLATION OF CATCHBASINS.
9. ALL DISTURBED GROUND LEFT INACTIVE FOR OVER 30 DAYS SHALL BE VEGETATED, SUBJECT TO WEATHER CONDITIONS, BY SEEDING OR APPROVED EQUIVALENT TO THE SATISFACTION OF THE DIRECTOR OF ENGINEERING.
10. ALL SOIL STOCKPILES IF REMAINING ON SITE FOR MORE THAN 30 DAYS SHALL BE VEGETATED, SUBJECT TO WEATHER CONDITIONS, BY SEEDING OR APPROVED EQUIVALENT TO THE SATISFACTION OF THE DIRECTOR OF ENGINEERING.
11. STREET SWEEPING/CATCHBASIN CLEANING PROGRAM SHALL BE IMPLEMENTED UPON COMPLETION OF BASE ASPHALT TO THE SATISFACTION OF THE DIRECTOR OF ENGINEERING.
12. ALL SOIL STOCKPILES SHALL BE SURROUNDED WITH SEDIMENT CONTROL FENCE. THE MAXIMUM SIDE SLOPES FOR STOCKPILES SHALL BE 1.5 (H) TO 1.0 (V). THE MAXIMUM HEIGHT OF STOCKPILE SHALL NOT EXCEED 3.0 m.
13. THE CONTRACTOR SHALL ENDEAVOR TO PREVENT MUD TRUCKING ONTO EXISTING RIGHT-OF-WAY AND SHALL PROVIDE CLEAN UP AT HIS/HER OWN EXPENSE AS DIRECTED BY THE DIRECTOR OF ENGINEERING.
14. THE CONTRACTOR SHALL CARE AND CONTROL SPILLS, FLUIDS, AND MATERIALS DURING CONSTRUCTION TO MINIMIZE RISK TO THE ENVIRONMENT.



KEY PLAN
NTS

GENERAL NOTES

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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 (Point) By a Third Party Located & Illustrated As Shown on This Plan

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ELEVATION NOTES

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2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

LEGEND

- EXISTING CATCHBASIN
- EXISTING MANHOLE
- EXISTING CATCHBASIN MANHOLE
- NEW MANHOLE
- NEW CATCHBASIN
- INLET PROTECTION
- SILT FENCE
- PROPERTY LINE
- OVERLAND FLOW
- MUD MAT

REVISION TABLE

REV.	DESCRIPTION	DRAWN	APP'D.	DATE
1	REVISED AS PER COMMENTS	BL	JS	31 AUG '26

ISSUE TABLE

TO	FOR	DATE
SUNCOR	ISSUED FOR SPA	17 APR '26
SUNCOR	ISSUED FOR SPA	31 AUG '26

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.

SEAL



CONSULTANT



DRAWING TITLE:

EROSION AND SEDIMENT
CONTROL PLAN

PROJECT:

6250 HAZELDEAN ROAD
& CARP ROAD
STITTVILLE, ON

DRAWN BY:	BL	CAD INFO:	SHEET SIZE D (559 x 864)
DRAWING SCALE:	1:250		PETRO-CANADA
DATE DRAWN:	17 APR '26		CONSULTANT 250358-P-302
CHECKED BY:			PLOT SCALE 1:1
APPROVED BY:			PLOT DATE
			PLOT CONFIGURATION

STD No./OUTLET No.	65044	SHEET No.	P302
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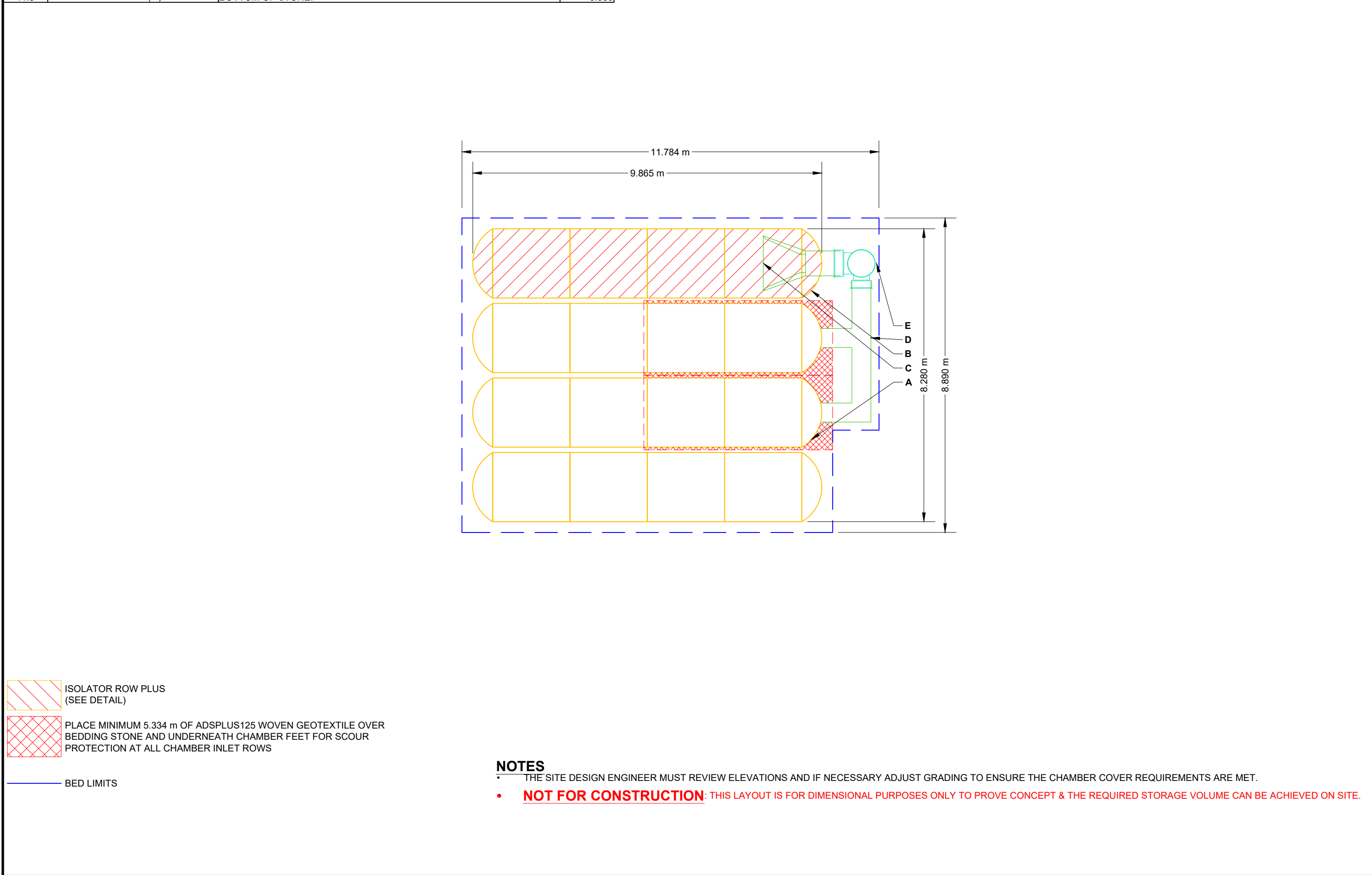


PETRO CANADA PRODUCTS
6250 HAZELDEAN ROAD
STITTSVILLE, ON

Stormwater Management Report

Appendix F STORMTECH SC-3500 SPECIFICATIONS

PROPOSED LAYOUT		CONCEPTUAL ELEVATIONS		PART TYPE		ITEM ON LAYOUT	DESCRIPTION		*INVERT ABOVE BASE OF CHAMBER	
16	STORMTECH MC-3500 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED)	3.810							
8	STORMTECH MC-3500 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TR&F)	1.901							
305	STONE ABOVE (mm)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC)	1.829			A	450 mm TOP PRE-CORED END CAP, PART#: MC3500IEPP18TC / TYP OF ALL 450 mm TOP CONNECTIONS			
229	STONE BELOW (mm)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT)	1.829			B	600 mm BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 600 mm BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS			
49	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT)	1.829			C	INSTALL FLAMP ON 600 mm ACCESS PIPE / PART#: MCFLAMP			
	INSTALLED SYSTEM VOLUME (m³)	TOP OF STONE	1.876			D	450 mm x 450 mm TOP MANIFOLD, ADS N-12	509 mm		
99.6	PERIMETER STONE INCLUDED (COVER STONE INCLUDED)	TOP OF MC-3500 CHAMBER	1.372			E	750 mm DIAMETER (610 mm SUMP MIN)			
	(BASE STONE INCLUDED)	450 mm x 450 mm TOP MANIFOLD INVERT	0.751							
101.0	SYSTEM AREA (m²)	600 mm ISOLATOR ROW PLUS INVERT	0.281							
41.3	SYSTEM PERIMETER (m)	BOTTOM OF MC-3500 CHAMBER	0.229							311 L/s IN
		BOTTOM OF STONE	0.000							



INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT

A. INSPECTION PORTS (IF PRESENT)

A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN

A.2. REMOVE AND CLEAN FLEXFORM FILTER IF INSTALLED

A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG

A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)

A.5. IF SEDIMENT IS AT, OR ABOVE, 80 mm (3") PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

B. ALL ISOLATOR PLUS ROWS

B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS

B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE

i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY

ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE

B.3. IF SEDIMENT IS AT, OR ABOVE, 80 mm (3") PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS

A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 1.1 m (45") OR MORE IS PREFERRED

B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLOSH WATER IS CLEAN

C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

MC-3500 ISOLATOR ROW PLUS DETAIL

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MC-3500 TECHNICAL SPECIFICATION

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ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 450 mm (18") ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 450 mm (18") OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 300 mm (12") MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 85% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 230 mm (9") (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.
- WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 'RECYCLED CONCRETE STRUCTURAL BACKFILL'.

MC-3500 CROSS SECTION DETAIL

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