



Tender:

2026 Thames St & Niagara St Reconstruction and Barnes Drain Replacement

Tender Due Date:

March 6, 2026, at 11:00 a.m.

Accepting bids for:

Road reconstruction, watermain rehabilitation and storm sewer installation:

- 500m of watermain replacement
- 43 water service connections
- 5 hydrants
- 750m of storm sewer installation
- 40 storm service connections
- 20 catch basins
- 12 maintenance holes
- 7,800 tonnes of granular material for road
- 800 tonnes of hot-mix asphalt
- 1,200m conc curb & gutter installation
- 730m² concrete sidewalk installation

Tenders to be delivered to:

Town of Plympton-Wyoming
546 Niagara Street, Wyoming, ON N0N 1T0

Attention: Paul daSilva, Director of Public Works

Bidder Registration

In order to receive Tender documentation, it is mandatory that you register as a bidder with the Municipality. Please remit the following information to Chandra Sisson, Administrative Assistant Public Works, csisson@plympton-wyoming.ca

- Name of Company
- Name of Contact Person
- Phone Number
- E-mail Address

Failure to register will result in non-acceptance of your submission.



BMROSS
engineering better communities 

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
2695 Hamilton Road, P.O. Box 400
Brights Grove, ON N0N 1C0
p. (519) 908-9564 www.bmross.net

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The electronic files are supplied on the understanding that the recipient accepts the Terms and Conditions below.

- 1) These electronic documents are current as of February 5th, 2026 and do not contain any Addenda or revisions issued after that time. Users are responsible for obtaining and verifying Addenda and revisions issued after the date of issue.
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Your use of this file acknowledges that you accept these conditions.

TOWN OF PLYMPTON-WYOMING

**THAMES ST & NIAGARA ST RECONSTRUCTION
AND BARNES DRAIN REPLACEMENT**

CONTRACT NO. 23245



TOWN OF PLYMPTON-WYOMING
THAMES ST & NIAGARA ST RECONSTRUCTION AND
BARNES DRAIN REPLACEMENT

CONTRACT NO. 23245

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

**TOWN OF PLYMPTON-WYOMING
THAMES ST & NIAGARA ST RECONSTRUCTION
AND BARNES DRAIN REPLACEMENT**

CONTRACT NO. 23245

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INFORMATION TO BIDDERS

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

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FOR INFORMATION ONLY
PLEASE REGISTER TO BID

INFORMATION TO BIDDERS

1) DATE AND PLACE FOR RECEIVING TENDERS:

Tenders will be received by:

**Paul DaSilva, Director of Public Works
Town of Plympton-Wyoming
546 Niagara Street
Wyoming, ON N0N 1T0**

until **11:00 a.m. (Local Time), _____ Friday, March 6th, 2026**

as stated in the official tender call advertisement.

2) TENDER DEPOSIT:

Each tender must be accompanied by a tender deposit in the form of a bid bond payable to:

Town of Plympton-Wyoming

for the amount of:

10% of the Total Tender Price

This deposit shall serve as evidence of good faith that if awarded the contract, the bidder will execute and enter into a formal agreement with the Owner within the time required and will furnish the security required to secure the performance of the terms and conditions of this contract.

The tender deposit of the bidder whose tender is awarded shall be forfeited should the bidder fail to execute a contract and provide the satisfactory bonds, referred to hereafter, within ten (10) days after receiving written notice from the Contract Administrator of the award of the contract.

The deposits of the two lowest bidders shall be retained until execution of the contract. Deposits of all other bidders shall be returned within 30 days of closing by letter, stating that the bid bond is no longer required. The successful bidder's bid deposit will be returned once the Contract and the bonding are in place.

3) ADDENDUM/ADDENDA:

Addendum/Addenda will typically be issued via email to the plan takers, forty-eight (48) hours prior to Closing Time and Date. In the event an addendum is issued within forty-eight (48) hours prior to Closing Time and Date, it may include an extension of the Closing Time and Date.

Bidders should acknowledge receipt of addenda when they are emailed to them to help the sender of the addendum to confirm that they have the correct email address on record.

Bidders must indicate the correct number of addenda on page T-1 of the Tender Form.

It is the responsibility of the Bidder to have received all Addendum/Addenda that have been issued. Bidders should check the ftp site provided by BMROSS prior to submitting their Bid to ensure they received all addenda.

4) SUBMISSION OF TENDER:

a) Form of Tender:

Tenders shall be submitted on the blank form herewith provided and shall give the lump sum and/or unit prices for the work, and the total tender shall be described in both words and figures. Bidders will be required to add Harmonized Sales Tax (HST) on the tender form in the space provided. The tender shall be signed by the bidder on page T-B of the Form of Tender and delivered in a sealed, opaque envelope, clearly marked TENDER.

b) Statement re Sub-Contractors:

The page titled "STATEMENT RE: SUB-CONTRACTORS", included in the contract documents shall be completed and submitted as part of the tender by each bidder. This shall include a list of proposed Sub-Contractors showing the value of the work to be sublet to each. The value of work sublet shall not exceed 50% of the total work to any one subcontractor without written authorization of the Contract Administrator. Failure to provide this list may render the tender invalid.

c) Agreement to Bond:

Bidders must have the "Agreement to Bond" forms, or equivalent, of this contract completed by their bonding company, and the same must be submitted with their tender in order to validate their bid.

5) CLARIFICATION:

Any details in question on this tender or in the accompanying plans shall be clarified by the bidder prior to submitting the bid. The unit prices as tendered shall include the supply of all permits, labour, equipment, and materials except where noted that are necessary to complete the contract. For technical questions related to tender documents, please contact:

Alex Morfin, Project Manager
B. M. Ross and Associates Limited
Engineers and Planners
Ph: (519) 908-9564
amorfin@bmross.net

Questions shall be provided in writing no later than 7 calendar days before the closing date.

6) WITHDRAWAL OF TENDER:

A bidder will be allowed to withdraw their tender unopened after it has been deposited if such request is received in writing prior to the time specified for the closing of tenders.

7) DISQUALIFICATION OF TENDER:

Tenders will not be considered where:

- a) They are received after the official closing time stated in IB-1).

- b) They are not properly executed, and the associated documentation is not complete.
- c) They are not accompanied by the specified tender deposit.
- d) They contain irregularities as described in the municipal procurement policy
- e) The bidder has not registered with the Contract Administrator prior to submitting a bid.
- f) They are submitted by fax, email or any electronic means.

More than one tender from an individual, firm, partnership or association under the same or different names will not be considered. Collusion between bidders will be sufficient cause for rejection of all tenders so affected.

8) TENDER AWARD:

Bidders are notified that any unbalanced items, errors, or omissions in the tender may render the tender invalid.

Contractors are notified that each tender shall continue open to award by the Owner until the formal contract is executed by the successful bidder or until at least sixty (60) days after the tender closing date, whichever occurs first. The Owner may at any time within that period, without notice, award this tender whether any other tender had been previously awarded or not.

Procurement is subject to Chapter 506 of the Canadian Free Trade Agreement (CFTA).

The lowest price bid or any bid will not necessarily be awarded. The Owner reserves the right to reject any or all tenders and to award to other than the lowest bidder as the interests of the Owner may require.

9) FORM OF AGREEMENT:

It is not necessary to complete the "Agreement" when submitting your tender, but the successful bidder shall be required to complete the form upon notification of the award of the contract.

10) COMPETENCY OF BIDDERS:

Bidders and Sub-Contractors must be capable of performing the various items of work bid upon. They may be required to furnish a statement covering experience on similar work, list of machinery available for the proposed work, and such statements of their financial resources as may be deemed necessary.

11) COMPLETION DATE AND LIQUIDATED DAMAGES:

a) Time:

Time shall be the essence of this agreement.

b) Progress of the Work and Time for Completion:

The Contractor may commence construction on or after:

April 27th 2026

The Contractor shall complete this contract in its entirety by:

October 30rd 2026

If this time limit above specified is not sufficient to permit completion of the work by the Contractor working a normal number of hours each day or week on a single daylight shift basis, it is expected that additional and/or augmented daylight shifts will be required throughout the life of the contract to the extent deemed necessary by the Contractor to ensure that the work will be completed within the time limit specified. Any additional costs occasioned by compliance with these provisions will be considered to be

included in the prices bid for the various items of work and no additional compensation will be allowed therefore.

If the Contractor is delayed in the completion of work due to any of the following, hereinafter identified as "Event of Delay":

- 1) due to a reason listed in Section GC 3.07 of the General Conditions, as amended in the Supplemental General Conditions;
- 2) by reason of any breach of contract or prevention by the Owner or other Contractor of the Owner or any employee of any one of them;
- 3) by reason of delay by the Owner issuing instructions or information or in delivering materials;
- 4) by any other act or neglect of the Owner or any other Contractor of the Owner or any employee of any one of them;
- 5) for any cause beyond the reasonable control of the Contractor;
- or
- 6) by a *force majeure* event as defined in Section GC 1.04.01, as amended in the Supplemental General Conditions,

the time of completion shall be extended in writing at any time on such terms and for such period as shall be determined by the Contract Administrator, and notwithstanding such extensions, time shall continue to be deemed of the essence of this contract.

An application by the Contractor for an extension of time as herein provided shall be made to the Contract Administrator, with a copy to the Owner, within five (5) business days of the Contractor becoming aware of an Event of Delay and at least 15 days prior to the date of completion fixed by the contract. All bonds or other surety furnished to the Owner by the Contractor shall be amended where necessary at the expense of the Contractor to provide coverage beyond the date of any extension of time granted, and the Contractor shall furnish the Owner with evidence of such amendment of the bonds or other surety.

If an extension is requested by the Contractor due to an Event of Delay, as defined in Information to Bidders Section 11 b) herein, and the extension is granted, the said extension shall be granted and accepted without prejudice to any rights of the parties under the Contract, unless expressly waived by a party in writing. In particular, the parties acknowledge and agree that all rights and remedies afforded to the Parties under the Contract shall remain in full force and effect after the time limited in this Contract for the completion of the work and any party may take any action consequent upon the act, default, breach, neglect, delay, non-observance or non-performance by the Contractor in respect of the work or Contract, or any portion thereof, such powers or authorities may be exercised from time to time and not only in the event of the happening of such contingencies before the time limited in this Contract for the completion of the work but also in the event of the same happening after the time so limited in the case of the Contractor being permitted to proceed with the execution of the work under an extension of time granted by the Contract Administrator.

c) Liquidated Damages:

It is agreed by the parties to the contract that in case all the work called for under the contract is not finished or completed within the date of completion, damages will be sustained by the Owner, and that it is and will be impracticable and extremely difficult to ascertain and determine the actual damage which the Owner will sustain in the event of and by reason of such delay and the parties hereto agree that the Contractor will pay to the Owner the sum of One Thousand Dollars (\$1,000.00) per day for liquidated damages for each and every calendar day's delay in finishing the work beyond the date of completion prescribed, and it is agreed that this amount is an estimate of actual damage to the Owner which will

accrue during the period in excess of the prescribed date of completion.

The Owner may deduct any amount under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever. The liquidated damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other alternative that may be available to the Owner.

d) No Liability to Owner:

Notwithstanding any provision contained in the Contract, the Owner shall not be responsible to the Contractor for any costs, loss and/or damage, including but not limited to liquidated damages, arising from any delays of the Contract, if, and to the extent that, the Owner's delay or other failure to perform the obligations under the Contract as a result of a pandemic, as determined by the Owner in its sole discretion. In such a case, the Owner shall notify the Contractor of such conditions and cause thereof.

Furthermore, notwithstanding any provision contained in the Contract, it is acknowledged and agreed that GC 3.07.01(c) and GC 7.10.02, as amended in the Supplemental General Conditions, shall not include an Order or Bylaw issued pursuant to the *Emergency Management and Civil Protection Act*, R.S.O. 1990, c.E.9 or a Directive from a public authority in response to a pandemic and in such a case, if there is delay or termination of the Contract as a result of such an Order, Bylaw or Directive it is agreed that the Owner shall not be responsible to the Contractor for costs, loss or damage, and in particular liquidated damages.

12) TAXES:

Harmonized Sales Tax (HST):

The 13 % Harmonized Sales Tax will be paid on all Work performed within the contract. It will be listed as a separate item on all tender documents and adjusted on final payment in accordance with the final contract price.

13) BRIBERY:

Should the Contractor or any of their agents give or offer any gratuity to or attempt to bribe any officer or servant of the Owner, the Owner shall be at liberty to cancel the contract forthwith or to direct the Contract Administrator to take the whole or any part of the works out of the hands of the Contractor. Bribery shall be considered as non-fulfilment of the contract by the Contractor.

14) ONTARIO PROVINCIAL STANDARDS:

Bidders are hereby advised that the Ontario Provincial Standards apply to this contract and are to be used where applicable. Bidders are responsible for familiarizing themselves with the latest revisions of the Ontario Provincial Standards.

15) WARRANTY HOLDBACK:

2% of the value of the Work will be retained for a period of 12 months following the date of Completion as a security for the proper performance of the Work. This Warranty Holdback will be released without interest upon expiry of the Warranty Period subject to the proper correction of all deficiencies to the Owner's satisfaction.

The Warranty Holdback will be held in addition to the 10% Statutory Holdback required by the Construction Act. The Warranty Holdback will be retained by the Owner, commencing during the latter

part of the period of construction and generally not before the contract is approximately 80% complete.

No alternate forms of security will be considered.

16) OCCUPATIONAL HEALTH AND SAFETY COMPLIANCE

Contractor is Constructor. It is the Contractor's responsibility as "Constructor" under the provision of the *Occupational Health and Safety Act* to coordinate the activities of all employers and works operating within the contract limits to ensure that the requirements of the *Occupational Health and Safety Act* are satisfied.

By signing the Form of Tender, the successful bidder agrees to abide by all applicable current health and safety legislation, environmental legislation, any other applicable regulations and comply with the intent of the Owner's Health and Safety Policy. The applicable regulations shall include the Occupational Health and Safety Act, R.S.O. 1990, C.0.1, as amended (re: duties of employers, safety training/certifications). By signing this tender the bidder also agrees to sign the Owner's Corporate Statement of Occupational Health and Safety Compliance Form that is bound in this tender document.

The Successful Bidder will provide the Corporation, prior to commencement of work, with a copy of the Constructor's Health and Safety Policy for their firm and the signed copy of Owner's Corporate Statement of Occupational Health and Safety.

17) FREEDOM OF INFORMATION:

Any personal information required on the Tender Form is received under the authority of the Municipal Freedom of Information and Protection of Privacy Act, 1989, RSO, 1990. This information will be an integral component of the bid submission.

All tenders submitted to the Owner becomes the property of the Owner and as such, are subject to the Municipal Freedom of Information and Protection of Privacy Act. Bidders may mark any part of their Tender as confidential except for the total Contract price and the Bidder's name. The Owner will use its best efforts not to disclose any information so marked but shall not be liable to a bidder where information is disclosed by virtue of an order of the Privacy Commissioner or otherwise as required by law. Upon award, the Owner may release the name of the successful bidder, the name and telephone number of the contact person and the total bid price of the successful bidder.

Questions about collection of personal information under the Municipal Freedom of Information and Protection of Privacy Act, 1989, R.S.O. 1990, Chapter M.56, as amended, should be directed to:

*Adam Sobanski, Chief Administrative Officer
546 Niagara Street, PO Box 250
Wyoming ON L7R 1T0*

FORM OF TENDER

**TOWN OF PLYMPTON-WYOMING
THAMES ST & NIAGARA ST RECONSTRUCTION
AND BARNES DRAIN REPLACEMENT**

CONTRACT NO. 23245

Tender by _____

residing at _____

a company duly incorporated under the laws of _____

and having its head office at _____

hereinafter called the "Bidder"

To --

I/We _____

having carefully examined the locality and site of the proposed works and all tender documents relating thereto, including the Form of Agreement, Special Provisions, Contract Drawings, Information to Bidders, Standard Specifications, Standard Drawings, Form of Tender, Supplemental General Conditions, General Conditions and Addendum/Addenda Numbers ____ to ____* inclusive, hereby tender and offer in accordance therewith to enter into a contract within the prescribed time, to construct the said work in strict accordance with the contract documents and such further detail drawings as may be supplied from time to time, and to furnish all labour, materials, tools, plant, matters and things necessary therefore, complete and ready for use within the time specified for the sum, including HST, of

_____ (\$ _____)

or such other sum as is determined from the actual measured quantities at the unit prices set forth in the Tender.

* The bidder will insert here the number of the Addenda received during the tendering period and taken into account when preparing the Tender.

THE AFORESAID SUM IS MADE UP AS FOLLOWS:

SCHEDULE OF ITEMS AND PRICES**THAMES ST & NIAGARA ST RECONSTRUCTION, AND BARNES DRAIN REPLACEMENT**

Item	OPSS #	Description	Qty./Unit	Price	Amount
ROADWORK					
1	201	Clearing (trees all sizes)	18 Ea.	\$ _____	\$ _____
2	201	Schedule	18 Ea.	\$ _____	\$ _____
3	206	Earth excavation			
	a)	Salt impacted soils (all other concentrations below Table 2.1 ESQS)	4,000 m ³	\$ _____	\$ _____
	b)	Excess salt impacted soils above Table 2.1 ESQS and below and below Table 3.1 ESQS (Provisional)	500 m ³	\$ _____	\$ _____
	c)	Excess soils exceeding Table 3.1 ESQS, including fee for suitable Class 1 soil management site, licensed dump or landfill (Provisional)	250 m ³	\$ _____	\$ _____
	d)	Temporary stockpile compound (Provisional)	1 L.S.	\$ _____	\$ _____
4	501, 506	Dust suppressants and compaction			
	a)	Water	960 m ³	\$ _____	\$ _____
	b)	Calcium chloride solid	4 t	\$ _____	\$ _____
5	314, 351,	Granular "A"			
	a)	Road (150mm layer)	2,020 t	\$ _____	\$ _____
6	314	Granular "B" Type I			
	a)	Road (300 mm layer)	5,230 t	\$ _____	\$ _____
	b)	For replacement of unsuitable road subgrade (Provisional)	600 t	\$ _____	\$ _____
7	310, 312	Hot Mix Asphalt			
	a)	Hot Mix HL-4 (50mm) binder course c/w padding adjacent to curb	790 t	\$ _____	\$ _____
	b)	Hot Mix HL-3 (50mm) driveway aprons (including 150mm Granular 'A' layer)	470 m ²	\$ _____	\$ _____
8	330, 510	Full depth asphalt removal	4,200 m ²	\$ _____	\$ _____
9	408	Adjust existing maintenance holes and catch basins frames to finished grade			
	a)	Maintenance holes	7 Ea.	\$ _____	\$ _____
	b)	Catch basins	4 Ea.	\$ _____	\$ _____
10	510	Removal of exist maintenace holes, catch basins			
	a)	Maintenance holes and maintenace hole-catch basins	2 Ea.	\$ _____	\$ _____
	b)	Catch basins	5 Ea.	\$ _____	\$ _____
11		Removal of existing culverts (all sizes)	45 m	\$ _____	\$ _____
12	510	Removal of concrete curb or curb and gutter	272 m	\$ _____	\$ _____
13	353	Place concrete mountable curb and gutter (OPSD-600.100)	1,190 m	\$ _____	\$ _____
14	510	Removal of sidewalks and driveways			
	a)	Concrete driveway slab	450 m ²	\$ _____	\$ _____
	b)	Asphalt driveway	165 m ²	\$ _____	\$ _____
	c)	Concrete sidewalk	425 m ²	\$ _____	\$ _____

15	351	Place concrete sidewalk and driveways including excavation and placement of 125mm Granular A material			
	a)	Sidewalk (125mm concrete layer)	730 m ²	\$ _____	\$ _____
	b)	Driveway slab (125mm concrete layer)	450 m ²	\$ _____	\$ _____
	c)	Walkway house slab (125mm concrete layer)	15 m ²	\$ _____	\$ _____
	d)	Relay brick driveway	15 m ²	\$ _____	\$ _____
16	351	Supply and install 0.6mx0.6m detectable warning surface plates for pedestrian crossing. Uncoated cast iron material with natural rust finish	8 Ea.	\$ _____	\$ _____
17	802	Topsoil (imported)	6,000 m ²	\$ _____	\$ _____
18	803	Sodding (nursery, unstaked)	6,000 m ²	\$ _____	\$ _____
19		Saw cutting and milling lap joints	45 m	\$ _____	\$ _____
20	710	Temporary pavement paint stop bar - Thames St/Toronto St	4 m	\$ _____	\$ _____
Sub-Total Roadwork --				\$ _____	

STORM SEWERS

21	401, 409, 410, 492, 517, 518	Supply, excavate for and place storm pipe sewers including bedding and cover with granular 'A' material, backfill with select native material and restoration beyond grading operation			
	a)	750 mm Concrete 65-D municipal drain	166 m	\$ _____	\$ _____
	c)	675 mm Concrete 65-D municipal drain	104 m	\$ _____	\$ _____
	d)	600 mm Concrete 65-D municipal drain	90 m	\$ _____	\$ _____
	e)	525 mm Concrete 65-D municipal drain	10 m	\$ _____	\$ _____
	f)	375 mm PVC DR35 storm sewer	180 m	\$ _____	\$ _____
	g)	300 mm PVC DR35 storm sewer	194 m	\$ _____	\$ _____
	h)	250 mm PVC DR35 catch basin leads	26 m	\$ _____	\$ _____
	i)	200 mm PVC DR35 catch basin leads	49 m	\$ _____	\$ _____
	j)	150 mm PVC DR28 catch basin leads	17 m	\$ _____	\$ _____
22	402, 407, 517, 518	Supply, excavate for, place and backfill catch basins and/or twin inlet catch basins, including frames and grates. Structures to be 1680mm standard height including 600mm sump and 150mm floor thickness			
	a)	600 mm x 600 mm (OPSD 705.010)	14 Ea.	\$ _____	\$ _____
	b)	600 mm x 1450 mm (OPSD 705.020)	6 Ea.	\$ _____	\$ _____
23	402, 407, 517, 518	Supply, excavate for, place and backfill precast maintenance holes and maintenance holes catch basins including frames and grates			
	a)	1200 mm manhole (701.010)	6 Ea.	\$ _____	\$ _____
	b)	1500 mm manhole (701.011)	6 Ea.	\$ _____	\$ _____
24	410, 504	Reconnect existing drains and services (up to 250mm dia) (Provisional, assume 20 services)	50 m	\$ _____	\$ _____
25	405	Supply and place filter wrapped perforated subdrain including excavation			
	a)	150 mm continuous behind curbs	1,190 m	\$ _____	\$ _____
	b)	150 mm manhole subdrains	11 Ea.	\$ _____	\$ _____
26	510	Remove existing storm sewer			
	a)	375/450mm dia. (or any size) all material except for AC pipe	90 m	\$ _____	\$ _____
	b)	375mm dia. (or any size), Asbestos Cement pipe	50 m	\$ _____	\$ _____
27	401, 410, 492, 517, 518	Supply, excavate for and place PVC SDR-28 storm service pipe including bedding, native backfill			
	a)	150 mm dia.	305 m	\$ _____	\$ _____
28	401, 410	Storm service cleanout	40 Ea.	\$ _____	\$ _____
Sub-Total Storm Sewers --				\$ _____	

WATERMAINS

29	401, 492, 441, 442, 517, 518	Supply, excavate for, place watermain including bedding and cover with granular 'A' material, backfill with select native material, tracer wire, and restoration beyond grading operation				
	a)	150 mm PVC DR18 c/w tracer wire	507 m	\$		\$
30	492, 441, 517, 518,	Supply, excavate for, place and backfill fittings, including cathodic protection, mechanical thrust restraints, thrust blocking or anchoring				
	a)	150 mm dia. gate valves	8 Ea.	\$		\$
	b)	150 x 150 x 150 mm tees	4 Ea.	\$		\$
	c)	150 mm dia. 45 deg. bends	6 Ea.	\$		\$
	d)	150 x 100 mm reducer	1 Ea.	\$		\$
	e)	Connect to existing watermain	3 Ea.	\$		\$
	f)	Remove and salvage existing hydrant	4 Ea.	\$		\$
	g)	Install new fire hydrants	5 Ea.	\$		\$
	h)	Remove and dispose existing 150mm AC watermain pipe, where required to install new infrastructure	20 m	\$		\$
	i)	Hydrant extension 300 mm (Provisional)	1 Ea.	\$		\$
	j)	Hydrant extension 150 mm (Provisional)	1 Ea.	\$		\$
31	441, 517, 518	Supply, excavate for, place and backfill water service fitting, including tapping main and all connections				
	a)	25 mm main stops	43 Ea.	\$		\$
	b)	25 mm curb stops and service boxes	43 Ea.	\$		\$
	c)	25 mm saddles	43 Ea.	\$		\$
32	401, 450, 492, 441, 517, 518, SP	Supply, excavate for, place and backfill water services, including bedding, and all required connections, cathodic protection, native backfill and restoration beyond the general grading operations				
	a)	25 mm CTS PEX service tubing installed by trenching from watermain to curb stop	449 m	\$		\$
33	493	Provide 50mm temporary potable water distribution system. Acceptable options for pipe materials are: a) AWWA C901 PE pressure pipe marked as being in compliance with NSF/ANSI Standard 61 b) AWWA D2241 PVC pressure pipe marked as being in compliance with NSF/ANSI Standard 61	1 L.S.	\$		\$
34	441	Swabbing, hydrostatic pressure testing, disinfection, flushing of watermains and hydrant flow test. Watermain is to be installed and commissioned in two phases. Phase 2 - Thames Street Phase 3 - Niagara Street	1 L.S.	\$		\$
Sub-Total Watermains --					\$	

MISCELLANEOUS ITEMS

35		50mm Styrofoam Highload 40 rigid board insulation	100 m ²	\$ _____	\$ _____
36	510	Pressure grout (20MPa strength) existing 500m of watermain and 60m of storm tile	10 m ³	\$ _____	\$ _____
37	706	Traffic control and pedestrian safety	1 L.S.	\$ _____	\$ _____
38		Construction layout	1 L.S.	\$ _____	\$ _____
39		Temporarily remove and re-install existing street signs	1 L.S.	\$ _____	\$ _____
40		Cost of 100% Performance and 100% Labour and Material Payment Bonds and cost of Insurance	1 L.S.	\$ _____	\$ _____
41		Pre-construction condition survey	1 L.S.	\$ _____	\$ _____
42	410	Sanitary service connection repairs Mun. 490, 509, 510, Empty Lot - Niagara St Info - 150mm PVC existing services Info - 200mm PVC existing sanitary sewer	4 Ea.	\$ _____	\$ _____

Sub-Total Miscellaneous Items --

\$ _____

PROVISIONAL ITEMS

43		Removal and disposal of unsuitable subgrade	300 m ³	\$ _____	\$ _____
44		Additional cost to provide 19mm clear stone in lieu of granular 'A' for bedding material	60 t	\$ _____	\$ _____
45		Backfilling of new water services during testing and disinfecting and excavation to connect to existing services where conditions warrant and as directed	10 Ea.	\$ _____	\$ _____
46	410	Remove and relay existing sanitary services where it conflicts with the installation of the proposed watermain and storm sewer	5 Ea.	\$ _____	\$ _____
47		Expose unknown underground infrastructure by Hydrovac	30 hrs	\$ _____	\$ _____
48		OLS to replace property bars	8 Ea.	\$ _____	\$ _____
49		Municipal Alley adjacent properties fences and other items that could be temporarily relocated or replaced (Allowance)	1 L.S.	\$50,000.00	\$50,000.00
50		Deflect 100mm PE sanitary forcemain	1 L.S.	\$ _____	\$ _____
51		Contingency Allowance	1 L.S.	\$200,000.00	\$200,000.00

Sub-Total Provisional Items --

\$ _____

Sub-Total Roadwork --

\$ _____

Sub-Total Storm Sewers --

\$ _____

Sub-Total Watermains --

\$ _____

Sub-Total Miscellaneous Items --

\$ _____

Sub-Total Provisional Items --

\$ _____

Sub-Total

\$ _____

13% HST

\$ _____

TOTAL TENDER ESTIMATE (HST Incl.)

\$ _____

STANDARD TENDER REQUIREMENTS

I/We agree to complete the work within the time specified in the Information to Bidders.

I/We also agree that this Tender is subject to a formal contract being prepared and executed.

In submitting this Tender for the work, the Tenderer further declares:

- (a) That no person, firm or corporation other than the one whose signature or seal is attached below, has any interest in this tender or in the contract proposed to be taken;
- (b) That this tender is made without any connection, knowledge, comparison of figures or arrangement with any other company, firm or person making a tender for the same work and is in all respects fair and without collusion or fraud;
- (c) That no member of the Municipal Council or any officer of the Owner will become interested directly or indirectly as a contracting party without disclosing his interest and otherwise complying with “the Municipal Conflict of Interest Act, RSO 1990”;
- (d) That the offer shown in the Schedule of Items and Prices is to continue open to acceptance until the formal contract is executed by the successful Tenderer for the said work or until thirty (30) days after the tender closing date, whichever event occurs first and that the Owner may at any time within that period without notice, accept this tender whether any other tender had been previously accepted or not;
- (e) That if we, the undersigned, withdraw this tender before the Owner shall have considered the tenders and awarded the contract at any time within thirty (30) days after the tender closing date, the amount of the deposit accompanying this tender shall be forfeited to the Owner;
- (f) That the awarding by the Owner of the contract based on this tender shall be an acceptance of the tender;
- (g) The Tenderer solemnly declares that the several matters stated in the foregoing tender are in all respects true;

- (h) That if this tender is accepted, we the undersigned agree to furnish an approved surety bond for the proper fulfilment of the contract and to execute the Agreement in triplicate within ten (10) days after being notified so to do. In the event of default or failure on our part to do so, we the undersigned agree that the Owner shall be at liberty to retain the money deposited by us to the use of the Owner, and to accept the next lowest or any tender or to advertise for new tenders or to carry out the works in any other way deemed best and we also agree to pay to the said Owner the difference between this tender and any greater sum which the Owner may expend or incur by reason of such default or failure, or by reason of such acting, as aforesaid, on their part including the cost of any advertising for new tenders and to indemnify and save harmless the said Owner and its officers from all loss, damage, cost, charges and expenses which they may suffer or be put to by reason of any such default or failure on our part.

The "Agreement to Bond" of the _____
Company, a company lawfully doing business in the Province of Ontario, to furnish a Performance Bond and a separate Labour and Material Payment Bond, each in an amount equal to 100% of the contract price, is enclosed herewith.

A certified cheque/bid bond for the sum of _____
(\$ _____) is attached hereto.

DATED AT _____ this _____
(place)
day of _____, 20____.

Signature of Witness Signature of Bidder

NOTE:

All tenders submitted must be signed by a duly authorized person and either a company seal must be affixed, or it must be signed by a witness.

STATEMENT RE: SUB-CONTRACTORS

The following is a list of sub-contractors or sub-trades intended to be used in the execution of the contract showing the approximate portion of the work to be allotted to each.

Failure to specify sub-contractors may render tender invalid. No substitutions or additions of sub-contractors will be permitted without written approval from the Owner/Contract Administrator.

If no sub-contractors will be used check here _____

1.	Sub-Contractor Name and Address	
	Item No. / Description	
	Percent of Contract	
2.	Sub-Contractor Name and Address	
	Item No. / Description	
	Percent of Contract	
3.	Sub-Contractor Name and Address	
	Item No. / Description	
	Percent of Contract	
4.	Sub-Contractor Name and Address	
	Item No. / Description	
	Percent of Contract	
5.	Sub-Contractor Name and Address	
	Item No. / Description	
	Percent of Contract	
6.	Sub-Contractor Name and Address	
	Item No. / Description	
	Percent of Contract	

AGREEMENT TO BOND

(PERFORMANCE BOND AND LABOUR AND MATERIALS PAYMENT BOND)

** _____

Date: _____, 20____

PROJECT NO.
CONTRACT NO.

TO:

Dear Sirs:

RE:

In consideration of _____
(hereinafter referred to as "the Owner") accepting the tender of and executing an Agreement with:

(hereinafter referred to as "the Tenderer") for the construction of

_____ subject to the express conditions that the Owner receive the Performance Bond and the Labour and Material Payment Bond in accordance with the said tender, we the undersigned hereby agree with the Owner to become bound to the Owner as surety for the Tenderer in a Performance Bond and a Labour and Material Payment Bond each in an amount equal to 100% of the contract price, in the forms of Performance Bond and Labour and Material Payment Bond provided and in accordance with the said tender, and we agree to furnish the Owner with said Bonds within seven (7) days after notification of the acceptance of the said tender and execution of the said Agreement by the Owner has been mailed to us.

Yours very truly,

(Seal)

NOTE: This Agreement to Bond must be executed on behalf of the Surety Company by its authorized officers under the company's corporate seal. Of the two forms bound herein, one shall become a part of the tender and the other shall be retained by the Surety Company.

** Enter the name and address of the Surety Company at the top of the page.

SCHEDULE OF PLANS, SPECIFICATIONS, GENERAL CONDITIONS & STANDARDS

The work specified in this contract will be performed in strict accordance with the following plans, specifications, General Conditions, standards, etc. for the Town of Plympton-Wyoming, Thames St & Niagara St Reconstruction and Barnes Drain Replacement Contract No. 23245.

A. SPECIAL PROVISIONS - Pages SP-1 to SP-83

B. PLANS - Drawing Nos. 1 to 8

C. INFORMATION TO BIDDERS - Pages IB-1 to IB-6

D. STANDARD SPECIFICATIONS

The following tabulated Ontario Provincial Standard Specification (OPSS), are available at the Ontario Provincial Standards For Roads and Public Works (OPS) portal at the MTO Technical Publications url:

<https://www.library.mto.gov.on.ca/SydneyPLUS/TechPubs/Portal/tp/opsViews.aspx?lang=en-US>
(the “OPSS’ ”) are hereby incorporated into, and apply, mutatis mutandis, to this contract. Only the most recent specifications, as of the closing date of the tender, shall apply to this contract.

OPSS.MUNI – Municipal Oriented

100-Nov/24	310-Nov/17	401-Nov/24	410-Nov/18	501-Nov/17	706-Apr/18
180-Apr/25	312-Nov/18	402-Nov/24	441-Nov/25	506-Nov/17	710-Nov/21
201-Apr/19	314-Nov/23	405-Nov/17	442-Nov/20	510-Nov/18	802-Nov/19
206-Apr/19	330-Nov/14	407-Nov/21	450-Nov/21	517-Nov/21	803-Apr/18
	351-Nov/21	408-Nov/21	492-Nov/20		
	353-Nov/21	409-Apr/25	493-Nov/19		

E. STANDARD DRAWINGS

The following tabulated Ontario Provincial Standard Drawings (OPSD), are available at the Ontario Provincial Standards For Roads and Public Works (OPS) portal at the MTO Technical Publications url:

<https://www.library.mto.gov.on.ca/SydneyPLUS/TechPubs/Portal/tp/opsViews.aspx?lang=en-US>
(the “OPSDs”) are hereby incorporated into, and apply, mutatis mutandis, to this contract. Only the most recent drawings, as of the closing date of the tender, shall apply to this contract.

OPSD - Municipal and Provincial Common

310.010	400.020	600.100	701.010	802.010	1006.010
310.033	401.010		701.011	802.030	1104.010
351.010			705.010		1105.010
			705.020		

BMROSS - Standard Drawings

222	720	1114		
208	1000C	1115		
501	1101	9001		

F. FORM OF TENDER

G. SUPPLEMENTAL GENERAL CONDITIONS

H. GENERAL CONDITIONS - The Ontario Provincial Standard Specifications Municipal-

Orientated General Conditions of Contract, November 2024 (OPSS.MUNI100) is available at the Ontario Provincial Standards For Roads and Public Works (OPS) portal at the MTO Technical Publications url:

<https://www.library.mto.gov.on.ca/SydneyPLUS/TechPubs/Portal/tp/opsViews.aspx?lang=en-US>

(the “**General Conditions**”) are hereby incorporated into, and apply, mutatis mutandis, to this contract.

- I. AGREEMENT**
- J. CONTRACT RELEASE**
- K. STATUTORY DECLARATION RE: LIENS, LIABILITIES & PAYMENT OF ACCOUNTS**
- L. APPENDICES**

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

SPECIAL PROVISIONS

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

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GENERAL

CONSTRUCTION PHASING

Maintaining good access for residents and visitors in the community is essential during the reconstruction work. **As such, work on the project (including removals and temporary watermain) shall be completed in phases.** Prices bid for work on this project shall include all costs for any additional mobilizations and demobilizations necessary to meet this requirement. The construction phasing, traffic control plan and watermain plan must include considerations to maintain access and servicing to all affected residents and businesses.

The Contractor will be expected to begin construction activities with Phase 1. Once the Contractor has installed all proposed underground installations within the active construction phase, the Contractor's underground "pipe crew" may be permitted to start into the next phase of construction, on the condition that a dedicated "surface restoration construction crew" is on site and actively restoring the previous stage completed curb, base asphalt paving and ramping.

The Contractor will be required to construct the project in Phases as follows:

Phase 1 – Barnes Drain Replacement (Municipal Alley and Main Street)

Phase 2 – Thames Street

Phase 3 – Niagara Street

Watermain Installation and Commissioning in Stages

The watermain for Phase 2 and 3 shall be installed, tested and commissioned by the Contractor individually, including all water service connections. The Contractor will be required to identify, in detail, their proposed temporary water systems for each Phase, their plan to isolate the existing water system for each Phase and their watermain connections for each Phase.

MANAGEMENT OF EXCESS MATERIALS

The Contractor's management of excess materials shall be in accordance with OPSS.MUNI 180, Ontario Regulation 153/04 and Ontario Regulation 406/19 under the Environmental Protection Act (EPA) and the Rules for Soil Management and Excess Soil Quality Standards (Soil Rules) that form part of O.Reg. 406/19.

On-site and excess soil management is governed by O. Reg. 153/04 and O. Reg. 406/19 under the EPA. The Soil Quality Standard Tables for the soil are governed by O. Reg. 153/04.

Section 8 of O. Reg 406/19 is applicable to this project. A Notice to register this project under Section 8 of O. Reg 406/19 will be filed.

Excess soil is to be disposed of as outlined in the Excavation Item.

OPSS.MUNI 180.07.04 Conditions on Management

Management of excess material by open burning is not permitted.

Asphalt pavement and/or prime surface asphalt required for removal in carrying out the work of the various tender items included in this contract shall be disposed of by the Contractor at Plympton-Wyoming Works Yard at #5819 Oil Heritage Road, Reese's Corners, giving Public Works 24 hours notice. At no cost to the contractor.

Concrete shall be disposed of by the Contractor at Plympton-Wyoming Works Yard at #5819 Oil Heritage Road, Reese's Corners, giving Public Works 24 hours notice. At no cost to the contractor.

Asbestos Cement Pipe shall be disposed of by the Contractor outside the contract limits at a certified waste disposal site for asbestos.

Silt, Sediment and flushed debris from the gravity sewers shall be disposed of by the Contractor outside of the contract limits.

Wood, lumber, trees, branches, roots shall be disposed of by the Contractor outside of the contract limits.

RESTORATION

When noted in the Form of Tender or identified in the Special Provision, the unit price bid for the appropriate item(s) shall include complete restoration. All restoration shall be as noted below in the General Restoration Requirements.

Restoration Beyond the Limits of General Grading Operations

When noted in the Form of Tender or identified in the Special Provisions, the unit price bid for the appropriate item(s) shall include restoration beyond the general grading operations. Contract items are provided for the restoration of work **within** the general grading operations. Restoration of areas **beyond** the general grading operations shall be included in the unit price of the item. Areas beyond the general grading operations include, but are not limited to, stockpile locations, areas disturbed by equipment or material storage sites or service connections. All restoration shall be as noted below in the General Restoration Requirements.

General Restoration Requirements

All restoration shall be in accordance with OPSS 492 and the following:

- (a) Lawn Areas -- 100 mm of approved topsoil levelled and graded to conform to the existing ground, followed by nursery sod approved by the Contract Administrator.

- (b) Non-lawn, Non-roadway areas -- 100 mm of approved topsoil levelled and graded to conform to the existing ground, followed by an application of top quality Standard Roadside Seed Mix and Bonded Fibre Matrix cover, as identified in OPSS.MUNI.804 – Construction Specification for Seed and Cover.
- (c) Where existing roadway/driveway is paved -- 300 mm minimum of imported Granular B Type I, 150 mm of imported Granular A, and 50 mm of HL-3 in driveways, or 2-40 mm lifts of HL-4 minimum in roadways or to match the depth of existing asphalt. Where 2 or more lifts of asphalt are required against existing pavement, a stepped joint shall be prepared by removing 0.5 m wide by the depth of the existing surface course prior to paving.
- (d) Where existing roadway/driveway is gravel -- 300 mm of imported Granular B Type I; and 150 mm of imported Granular A.
- (e) Where existing driveway is concrete -- 300 mm minimum of imported Granular B Type I and 150 mm of imported Granular A; for residential drives -- 150 mm of 32 MPa concrete with crushed limestone; and for commercial drives -- 200 mm of 32 MPa concrete with crushed limestone.
- (f) Where existing driveway is brick or unit pavers -- 300 mm minimum of imported Granular B Type I and 150 mm of imported Granular A and 25 mm to 38 mm of limestone screening and match existing patterns.
- (g) All disturbed or damaged concrete structures, such as sidewalks, curbs and gutter, etc., shall be removed and replaced including 125 mm of Granular A.
- (h) Prior to the expiration of the warranty holdback, the Contractor shall repair all settlements. Settlements of lawns, non-lawns or non-roadway areas shall be restored by applying sufficient topsoil to the settled area followed by an application of top quality Standard Roadside Seed Mix and Bonded Fibre Matrix cover, as identified in OPSS.MUNI.804 – Construction Specification for Seed and Cover. Asphalt settlements shall be restored by milling the deficient area followed by the placement Hot Mix Asphalt (HMA). All repairs shall be in accordance with OPSS 802, OPSS.MUNI 804, and OPSS 310.
- (i) Salvaged granular material shall not be used above sub-grade or re-used as Granular B Type I unless a granular analysis is performed at the Contractor's expense.

NOTE

- In (a) and (b) above, it will be the Contractor's responsibility to ensure a catch of grass at the termination of the contract.
- The Contract Administrator/Owner may request the delay of the sod placement during hot and dry weather conditions. No additional payment or penalty will result from the delay.
- All asphalt surfaces shall be saw-cut prior to resurfacing.
- All concrete structures shall be saw-cut prior to replacement.

CO-ORDINATION OF WORK BY OTHERS

The Contractor will co-ordinate his work with local utility companies in case repairs need to be completed due to damage during construction activities or a utility company is completing work (*see below Enbridge and Hydro One paragraphs*). When it is impossible to avoid working in the area at the same time, a barrier will have to be maintained to have separation in time or space between the Contractor and the utility company. Where necessary, the Contractor shall move the

operation to another part of the contract and give the utility sufficient time to complete any work deemed necessary at that time during the contract.

Enbridge will deflect sections of gasmain and services where these are identified to conflict with the installation of the Barnes Drain and storm sewers. Work is schedule to begin in April 2026 and is to be completed by early May 2026.

Hydro One will relocate one pole located at Thames/Toronto and one at Niagara/Toronto intersections respectively to allow for the installation of the north concrete curb radius. Work is anticipated to be completed during the late spring/ early summer of 2026.

ACCESS TO ENTRANCES OF BUILDINGS

Access to all entrances shall be maintained at all times during construction and temporary access shall have a minimum width of 1.0 metres. The method of access shall be submitted to the Contract Administrator for approval. Pedestrian access to the storefronts shall be maintained at all times and delineated from the construction by the means of snow fence.

PUBLIC NOTICES

The Contractor shall notify all impacted property owners/tenants of impending disruptions to services and or access. The Notice shall be delivered 48 hours prior to the disruption and shall include a short description of the disruption, the probable timing and duration of the disruption, alternative actions that the owner/tenant should take while the work is being done i.e.) parking off site, and a contact person who could address any further questions.

DUST CONTROL

The Contractor shall take such steps as may be required to prevent dust nuisance resulting from the operations either within the contract limits, on detours, or elsewhere, or by public traffic, where it is the Contractor's responsibility to maintain a roadway through the work.

Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust, wherever dust would affect traffic or wherever dust would be a nuisance to residents of the area where the work is being carried out.

The cost of all preventative measures required by the Contract Administrator outside the limits of the contract shall be borne by the Contractor. The cost of such measures within the contract shall be borne by the Contractor except in contracts where tender items include "dust suppressants and compaction that include water or calcium chlorides solid, or both". In such cases, the Contractor shall be paid by the Owner at the contract unit price(s) for the appropriate item(s).

GARBAGE COLLECTION AND BLUE BOX RECYCLING

The Contractor shall be responsible for co-ordinating the collection of all garbage and blue box recycling, within the limits of the contract during construction, with the appropriate authority.

PROTECTION OF TREES

The Contractor's operations shall not cause damage to the roots, trunk or branches of trees, or flooding or sediment deposits on areas where trees are not designated for removal.

Protective measures shall be taken to safeguard trees from contract operations, equipment and vehicles. Unless stated elsewhere in the contract, equipment or vehicles shall not be parked, repaired, refuelled, construction materials shall not be stored, and earth materials shall not be stockpiled within the dripline area of any tree not designated for removal.

Where the contract requires work within the dripline of trees, operation of equipment shall be kept to the minimum necessary to perform the work required. Limbs that are to be removed shall be cut back cleanly to the 'collar'. Roots that are exposed shall be cut back cleanly. Pruning of limbs and roots shall be done with sharp tools designed for the purpose. Pruning and root removal by excavating equipment is not allowed.

Bark that is damaged by the Contractor's operation shall immediately be neatly trimmed back to uninjured bark, without causing further injury. Tree damage shall NOT be treated with wound dressing.

When required and specified, barriers for tree protection shall be installed and maintained at a minimum height of 1.2m as detailed in OPSS.MUNI.801-Construction Specification for the Protection of Trees.

ITEM NO. 1 CLEARING (TREES ALL SIZES)

For the unit price bid, the Contractor shall cut down and remove each tree, including all wood, branches, or debris. The wood shall be disposed of by the Contractor at its own expense or at a place approved by the Contract Administrator at the time of construction. The Contractor shall be responsible for damage to all utilities, adjacent property, persons, etc. and shall make restitution for such damage to the satisfaction of the Contract Administrator. This item shall apply to all trees shown for removal on the plans or designated at the time of construction. OPSS 201 will not apply to the size of the trees.

ITEM NO. 2

GRUBBING (STUMPS ALL SIZES)

For the unit price bid, the Contractor shall completely remove all stumps and roots identified on the plans or identified by the Contract Administrator at the time of construction. The Contractor shall arrange for an approved disposal site and dispose of all stumps and debris at their own expense outside the contract limits. The Contractor shall be responsible for damage to all utilities, sidewalks, adjacent property, persons, etc. and shall make restitution for such damage to the satisfaction of the Contract Administrator. OPSS 201 will not apply to the size of stumps.

ITEM NO. 3

EARTH EXCAVATION

For the unit price bid for earth excavation, the Contractor shall supply all labour, equipment and materials to excavate to the required line and grade, or to new limits as established by the Contract Administrator at the time of construction as per OPSS.MUNI 206 Construction Specification For Grading. All excavated materials that are excess shall be disposed of off site as outlined under the applicable regulations, the General SP – Management of Excess Materials and the Management of Excess Soil Item.

All excavated excess material shall become the property of the **Contractor**, and the Contractor's unit price bid for earth excavation and grading shall include the cost of loading, hauling, dumping, and grading.

The Contractor's management of earth excavation, excess materials, and excess soil shall be in accordance with OPSS.MUNI 180, Ontario Regulation 153/04 and Ontario Regulation 406/19 under the Environmental Protection Act (EPA) and the Rules for Soil Management and Excess Soil Quality Standards (Soil Rules) that form part of O.Reg. 406/19.

The unit price bid for earth excavation shall also include all excavation and grading required for sidewalks and all excavation required at side streets and entrances. The unit price bid shall include the removal and disposal of designated asphalt, including curbs and any other minor structures encountered during the course of construction if not included as a separate item in the contract.

Construction

If the material is geotechnically suitable, the Contractor shall make every effort to reuse excavated material, as suitable fill, within the project limits.

The Contractor may be required to salvage existing granular material to be used as granular backfill for the roadbed sub-base and placed as established by the Contract Administrator. Salvaged materials used in the roadbed and sub-grade below the roadbed shall be compacted to meet or exceed the target levels specified in OPSS 501 for the applicable application.

The Contractor shall give the local utility sufficient time after the road excavation is completed to do any work necessary regarding utilities before any granular backfill is placed for road sub-base and base and prior to final preparation of the sub-grade.

The Contractor shall restore each block for traffic before beginning excavation in any other block. Access to commercial establishments will be maintained at all times by a method satisfactory to the Contract Administrator. Access to residential lots to be maintained at all times except when work is being performed immediately in front of the driveway or when concrete is curing.

Once the Contractor has an understanding of the existing soil conditions, the Contractor shall manage the excess material in accordance with O. Reg 406/19 and in an environmental and economical acceptable manner. Unless directed otherwise by the Contract Administrator, **the Contractor shall, to the best of their ability, reuse soil impacted with elevated soil chemistry on-site. The volume of excess material, that has elevated chemistry, shall be kept to a minimum.**

The Contractor shall comply with the Environmental Protection Act, including O.Reg 347/90 (as amended) and shall use appropriately licensed haulers and receivers for all waste transportation and disposal, if required.

Quality Control

The Contractor shall be responsible for carrying out all quality control grade checks to ensure that horizontal and vertical grading tolerances are met, as outlined in OPSS 206.

A competent surveyor shall carry out grade checks on all finished earth and rock grade surfaces. Quality control of earth and rock grade surfaces shall be based on horizontal and vertical grading tolerances as specified in the Tolerances for Earth and Tolerances for Rock clauses, respectively. The grade shall be certified at the stations and offsets shown in the grading templates or where grading templates are not available, at the frequency requirements specified for the layout elsewhere in the Contract Documents.

The frequency of the Quality Control Grade checks shall be at 20m stations prior to any granular being placed.

Offsets shall be:

- Centerline of construction
- Both edges of proposed asphalt
- On both sides, 1.0m behind the proposed edge of asphalt.

Basis of Payment

Payment for this work will be paid as earth excavation per cubic metre based on the theoretical calculated end areas for the roadbed excavation and theoretical volume for entrance excavation,

as calculated and listed on the Form of Tender. The Contractor will not be paid for additional quantities excavated unless it has been confirmed with the Contract Administrator or his representative that the excavation depth or width had to be increased to remove unsuitable material that has been identified at the time of construction or the scope of work has been increased and the excavation work required is not already compensated for within another item.

Monthly and before the work is issued as substantially performed, the Contractor shall submit all documentation required by OPSS.MUNI 180, the Management of Excess Soils Item and the applicable aspects of O.Reg 406/19 including soil tracking report. The Contract Administrator's representative will use this information and theoretical calculations to help determine the quantities for the monthly interim payments.

Salt Impacted Soils (all other concentrations below Table 2.1 ESQS)

Payment for the earth excavated shall be made at the unit price bid for the Salt impacted soils (All other concentrations below Table 2.1 Excess Soil Quality Standards (ESQS), with the exception of EC and/or SAR), unless it is confirmed the soil chemistry properties exceed these parameters. This includes the volume of this material within these soil chemistry properties that is removed from site and the material that is reused on site.

Note, if there are excavated materials with elevated levels of chemistry, exceeding that of Table 2.1, and the Contractor is able to keep this material on site, the cost to relocate this material will also be included with the pay item for Salt Impacted Soils with concentrations less than Table 2.1.

Excess Salt Impacted Soils above Table 2.1 ESQS and below Table 3.1 ESQS (Provisional)

When it is identified that there is excess soil with elevated chemistry levels above Table 2.1 and in compliance with Table 3.1 ESQS (with the exception of EC and/or SAR) that is to be removed from site, the Contractor shall be compensated at the unit price bid under this item. Payment for this work will be paid as earth excavation per cubic meter, measure by the truck load and shall be full compensation for loading and hauling the material to the disposal site.

The management of excess soil shall include the costs of finding a site suitable for receipt of this material, documenting the volume of materials transported to the site and all associated miscellaneous costs.

Excess Soils exceeding Table 3.1 ESQS (Provisional)

If it is determined there is soil to be removed from site due to poor geotechnical properties, that has soil chemistry that is in-excess of Table 3.1 ESQS, the Contractor shall the trucking and dispose the material at a suitable Class 1 Soil Management Site, licensed dump or landfill.

Payment for this work will be paid as earth excavation per cubic meter, measure by the truck load and shall be full compensation for loading and hauling the material to the disposal site and paying the fee for the Soil Management Site, licensed dump or landfill, documenting the volume of materials transported to the site and all associated miscellaneous costs.

Temporary Stockpile Compound (Provisional)

If it is identified and confirmed necessary by the Contract Administrator, the Contractor shall temporarily stockpile material retrieved from the site. The Contractor shall supply all labour, equipment and material to construct the stockpile compound and manage the drainage and run-off. The temporary stockpile compound area shall consist of an area measuring at least 20m x 20m square complete with plastic sheeting placed below and above the stockpile of material, and concrete blocks measuring a minimum of 600mm x 600mm x 1000mm placed around the perimeter.

OPSS.MUNI 180.07.06 Conditions on Management by Stockpiling shall be amended as follows: When bidding the project, the Contractor should assume that if excess material has to be placed in a stockpile, it shall be placed outside the Owner's property. The location for the stockpile location shall be confirmed with the Contract Administrator prior to the start of construction.

ITEM NO. 4

DUST SUPPRESSANTS AND COMPACTION

For the unit price bid, the Contractor shall supply all labour, equipment and materials for the application of water and calcium chloride solids when requested by the Contract Administrator, or upon approval of the Contract Administrator.

Dust suppressants shall be applied in a manner that avoids ponding, runoff, drifting, and tracking of the material beyond the area of application.

Water, for compaction shall be applied, as necessary, to achieve the degree of compaction specified.

General

The proper use and application of the dust suppressants is the responsibility of the Contractor and is subject to applicable Ministry of the Environment, Conservation and Parks requirements under legislation such as the Environmental Protection Act (EPA) and the Ontario Water Resources Act.

Materials

Water shall be free of contaminants that could adversely affect fill material or the environment.

Calcium chloride solid solution shall be in accordance with OPSS 2501. Should the Contractor choose to use a calcium chloride solution, the Contractor shall submit the mix design indicating the percentage of solid calcium chloride. Dust suppressants containing waste material are not approved for use.

Measurement for Payment

Measurement for water shall be by cubic meters based on the tank size. Measurement for calcium chloride solid shall be mass in tonnes. Measurement for calcium chloride solution shall be by mass of equivalent solid based on the submitted mix design.

ITEM NOS. 5 & 6 GRANULAR A AND GRANULAR B TYPE I

For the unit price bid, the Contractor shall supply all labour equipment and materials required to place, fine grade and compact Granular A and Granular B materials required in the roadway for roadbed, subdrains, shouldering, driveways, under the sidewalk and curb and gutter, which are applicable to this contract as per OPSS.MUNI.314. All other Granular A or Granular B Type I materials required shall be included in the unit prices bid for those items where material is required.

Granular material shall be compacted to a minimum dry density of 100%.

Gravel Ticket Requirements

- A minimum of 2 copies of the weigh tickets shall be delivered to the site. One copy is to remain with the Contract Administrators site representative.
- Source of material
- Description/type of granular material shall be noted on the ticket
- Intended use of material shall be noted on the ticket
- Truck number/driver or some other form of identification shall be noted on the ticket
- Gross tonnes, Tare tonnes and Net tonnes shall be noted on the ticket
- Must be legible
- Must be submitted daily

Measurement for Payment

Measurement for Granular A and Granular B shall be by the tonne based on tickets provided upon delivery of the material to the site. Granular tickets **must be submitted daily** to ensure payment. Illegible tickets may be considered invalid.

ITEM NO. 7 HOT MIX ASPHALT

General

For the unit price bid, the Contractor shall supply all labour, equipment and materials, for the execution of paving work in accordance with OPSS.MUNI.310 Construction Specification for Hot Mix.

The Contractor's unit price bid for this item shall also include all ramping, transverse joints, and/or removal of all transverse joints and all deramping at structures, sidewalk drops and driveway entrances, as identified by the Contract Administrator at the time of construction.

All asphalt plant operations shall comply with municipal regulations and ordinances governing the area in which the plant is located.

Prequalification

The road paving contractor for this project must have a current Ministry of Transportation (MTO) Financial/Qualification Rating of \$1M or greater in the General Road Classification of work category.

This qualification will not be required for miscellaneous paving of patches, boulevards or driveways.

The road paving contractor for this project must be prepared to provide their MTO Financial/Qualification Rating document to the Owner or Contractor Administrator if requested.

The Contractor will be required to submit a mix design for approval prior to commencing the paving operations. The Contractor will be required to submit an asphalt paving plan to the Contract Administrator at the pre-construction meeting. This paving plan shall include items, but not limited to, paving schedule, quantities to be placed each day, traffic control, layout using string line on both edges of pavement and centre line, longitudinal joints staggered offsets for each asphalt layer, transverse joints, lap joints, asphalt paver spreader width (minimum and maximum), etc.

310.05 Materials

Performance graded asphalt cement shall be PG 58-28. The Performance Graded Asphalt Cement (PGAC) will conform to OPSS.MUNI 1101 Material Specification For Performance Graded Asphalt Cement for the specified grade.

The materials used in the production of the HMA shall be according to OPSS 1150 for Marshall mixes.

OPSS 1150.04.01.01.01 Reclaimed Asphalt Pavement Portions has been amended as follows:

RAP is not permitted in HL-1 and DFC.

The use of:

- a) Up to 15% by mass of RAP shall be permitted for HL-3, HL-3F, HL-4 and HL-4F surface course mixes.
- b) Up to 20% by mass of RAP shall be permitted for HL-4, HL-8 and medium duty binder mixes.

- c) Over 20% by mass of RAP is not permitted for any mix.

310.06 Equipment

OPSS.MUNI.310 is amended in that no surface trial coat area shall be required under this contract.

Prior to paving, the Contractor shall submit a list of equipment that will be used. The list shall identify the make & model of the paving equipment and rollers including the manufacturers specification sheet. For the rollers, the Contractor shall also identify the Class of Roller and identify the Minimum Roller Combinations to be used on the contract as per Table 5 of OPSS.MUNI.310.

Asphalt Material Transfer Vehicle

For the unit price bid per tonne of asphalt placed, the contractor shall supply all labour, equipment and materials required to provide an asphalt material transfer vehicle (shuttle buggy) for the topcoat asphalt paving.

The unit price bid for this item shall include all costs for use of an Asphalt Material Transfer Vehicle to receive and transfer the hot asphalt from trucks to paver. The asphalt batch plant, hauling equipment, shuttle buggy, paver and rolling equipment shall be matched in both size and rate of production to maintain a continuous paving operation.

This item is a provisional item and its requirement will be confirmed prior to the top coat paving operations.

310.07 Construction

The Contractor is responsible for all Quality Control (QC) testing. The QC documentation shall be made available to the Contract Administrator upon request. A through lane paving course shall be completed prior to placement of adjacent side roads, speed change lanes and other paved areas.

Tack Coat

The Contractor shall supply all labour, materials and equipment necessary to supply, haul and apply tack coat to all areas to be overlaid. The areas shall be tack coated prior to Hot Mix Paving with SS-1 or SS-1H emulsified asphalt, diluted with an equal volume of water applied at a rate of 0.35 kg/m². Where vertical faces are encountered (ie. concrete curb, centreline paving joint, all milled and vertical face construction joints), these vertical shall also be tack coated prior to Hot Mix Paving.

310.07.05 Sampling

OPSS 310.07.05.01 Asphalt Cement - Asphalt cement sampling and testing will be completed by the Owner's Geotechnical Consultant.

310.07.08- Widenings and Irregular Sections - 450 mm stepped joints are required when placing HMA adjacent to existing paved areas with an existing asphalt depth of 80 mm or more.

310.07.09 - Hot Mix Asphalt Padding - Padding shall be placed prior to placing the surface course of asphalt. The tonnage required for HMA padding will be included with the appropriate HMA item.

310.07.11.03- Transverse Joints - The third paragraph has been amended as follows:

- a) When a binder course is placed flush against an existing HMA pavement and a butt joint is to be made, the existing pavement shall be trimmed back to form a straight vertical surface. *When the surface course is to be placed at a later date, temporary ramping shall be provided as per BMROSS Standard Drawing 208 – Asphalt Joint Detail for Transverse Joints.*

310.07.13 Tolerances

The paving tolerance of OPSS.MUNI.310.07.13 shall be reviewed upon completion. Should the deviations exceed 6 mm on the binder course or 3 mm on the surface course, as measured in any direction with a 3m straight edge, the Contractor shall correct these deviations to the satisfaction of the Road Authority. Paving tolerances are not applicable to irregular sections of paving, or within 3 m of a butt joint with an existing HMA pavement.

310.08 Quality Assurance

Quality Control laboratory testing shall be used for acceptance in place of Quality Assurance laboratory test results. All other Quality Assurance testing shall be performed by the Contract Administrator.

310.09 Measurement for Payment

Measurement for payment of hot mix asphalt shall be by mass in tonnes based on tickets provided upon delivery of the material to the site, unless specified otherwise. Hot mix tickets **must be submitted daily** to ensure payment. Illegible tickets may be considered invalid.

Tack coat shall be included in the unit price unless tack coat is listed as a separate item.

Winter heat shall be included in the unit price bid unless winter heat is listed as a separate item.

Hot Mix Miscellaneous – Driveways and Paved Boulevards

The Contractor shall also take note that Hot Mix Miscellaneous paving is to be performed at designated drives, boulevards and areas behind the curb or to the limits established by the Contract Administrator at the time of construction. This hand laid asphalt will only apply to areas that, in the opinion of the Contract Administrator, do not permit the operation of a paving machine. The supply of the HL-3 for these areas shall be included under the item for Hot Mix Miscellaneous. Hot Mix Price Adjustment shall not be calculated for Hot Mix Miscellaneous.

Rural entrances shall be graded as per OPSD 301.010 or OPSD 301.020.

Hot Mix Miscellaneous shall be measured in square metres. In areas where Hot Mix Miscellaneous is designated on the plans and more than one 50 mm lift of Hot Mix is required, measurement for payment will be made for two single courses of Hot Mix where required.

Hot Mix Ticket Requirements

- A minimum of 2 copies of the weigh tickets shall be delivered to the site. One copy is to remain with the Contract Administrator's site representative.
- Description/type of hot mix material shall be noted on the ticket
- The Contractor's name, truck number/driver or some other form of identification shall be noted on the ticket
- Gross tonnes, Tare tonnes and Net tonnes shall be noted on the ticket
- Must be legible
- Must be submitted daily

Temporary Curb Ramping (including milling)

The Contractor shall protect the concrete curb edges from paving equipment and rollers with appropriate ramps, as required.

For the unit price bid the Contractor shall supply all labour, equipment and materials for the installation of the temporary curb ramping, as shown on the details drawing. All paving shall be in accordance with OPSS 510.

The temporary curb ramping shall be continuous along the entire length of the new roadway curbs and shall extend around the curb radii to beyond the sidewalk ramps or to the limits established by the Contract Administrator at the time of construction.

The temporary curb ramping must be installed within 48 hours of the placement of base asphalt. The Contractor shall provide a 5 mm deep milled joint 300 mm wide from the concrete curb/edge of pavement. Tack coat shall be applied to the milled asphalt area but NOT the exposed concrete curbing which will be in contact with the asphalt. The concrete curbing and sidewalks shall be protected from tack coat over spray. The Contractor shall then hand lay Hot Mix HL-2 asphalt from the finished curb grade and match the base asphalt grade 300 mm away from the curbing. Refer to the temporary asphalt ramp detail drawing.

The Hot Mix Price Adjustment shall not apply for this item.

Payment for this item will be by the lineal metre of temporary curb ramping along the curb line as measured by the Contract Administrator.

Hot Mix Price Adjustment for HL-3 and HL-4

Payment to the Contractor for hot mix HL-3 and HL-4 to be based on changes to the Ministry of Transportation's performance graded asphalt cement price index as presented herein. The price index will be published monthly in the MTO Contract Bulletin and displayed on the OHMPA

(www.ohmpa.org) and the MTO website (www.raqs.mto.gov.on.ca). The price index will be used to calculate the amount of the payment adjustment per tonne of new asphalt cement accepted into the Work.

The price index will be based on the price, excluding taxes, FOB the depots in the Toronto area, of asphalt cement grade PG 58-28 or equivalent. One index will be used to establish and calculate the payment adjustment for all grades.

A payment adjustment per tonne of new asphalt cement will be established for each month in which paving occurs when the price index for the month differs by more than 5% from the price index **for the month prior to Tender Opening**. When the price index differential is less than 5%, there will be no payment adjustment for that month. Payment adjustments due to changes in the price index are independent of any other payment adjustments made to hot mix tender items.

The payment adjustment for the month will be calculated from the following formulae:

Asphalt Cement Price Adjustment, PA		
I_p	Paving Within Approved Contract Time	Paving Beyond Approved Contract Time
$I_p > 1.05I_{TO}$	$PA = (I_p - 1.05I_{TO}) \times T_{AC}$	$PA = (I_{AT} - 1.05I_{TO}) \times T_{AC}$
$I_p < 0.95I_{TO}$	$PA = (0.95I_{TO} - I_p) \times T_{AC}$	

Note: If $I_p > 1.05 I_{TO}$ the Contractor receives compensation; however, if $I_p < 0.95 I_{TO}$, the Owner receives a rebate.

Where:

- PA = payment adjustment for new asphalt cement, in dollars
 I_{TO} = performance graded asphalt cement price index for the month prior to Tender Opening
 I_p = performance graded asphalt cement price index for the month in which paving occurs
 I_{AT} = performance graded asphalt cement price index for the month of expiry of approved Contract Time
 T_{AC} = quantity of asphalt cement in tonnes

The payment adjustment per tonne applies to the quantity of asphalt cement in the HMA accepted into the Work during the month for which it is established. The quantity of asphalt cement includes all grades of asphalt cement supplied by the Contractor with and without polymer modifiers. **There will be no AC Price Adjustment applied to Hot Mix Miscellaneous items.**

For each month in which a payment adjustment has been established, the quantity is calculated using the HMA quantity accepted into the Work and its corresponding asphalt cement content as required by the job mix formula except for mixes which contain reclaimed asphalt pavement or roof shingle tabs.

For mixes which contain reclaimed asphalt pavement, the increase due the Contractor or the rebate due the owner will be calculated as if virgin hot mix asphalt has been supplied. This fairly reflects the increasing value of the Contractor's RAP pile when AC prices are increasing and the opposite when they are declining.

For mixes containing a liquid anti-stripping additive, the quantity of anti-stripping additive will be deducted from the quantity of new asphalt cement. No other deductions will be made for any other additives.

For progress payment purposes, payment adjustments will be made on the monthly progress payment certificate for the months in which HMA paving occurs.

ITEM NO. 8

FULL DEPTH ASPHALT REMOVAL

The Contractor shall supply all labour, equipment and materials required to remove and dispose of asphalt pavement from those areas shown on the drawings or to the limits established by the Contract Administrator at the time of construction, all in accordance with the following Special Provision, Contract Drawings, applicable Ontario Provincial Standard Specifications and Drawings as well as applicable Owner Standard drawings or BMROSS Standard Drawings.

Construction

General

Suitable mechanical sawing equipment or pavement milling equipment capable of producing a straight, clean, vertical face shall be used for cutting the pavement. **Straight, clean vertical faces shall be provided at the limits of the asphalt removal.** Should the straight, clean vertical face become damaged during construction, the Contractor shall recut the vertical face at no additional costs to the Owner.

As part of the work of any pavement removal, where public traffic is to be maintained throughout the work, temporary asphalt ramping shall be constructed and maintained to convey public traffic through the area. The ramping shall be at 20H:1V.

The sides of all frame & grates that have been exposed due to the removal of asphalt, shall be spray painted fluorescent orange to mark the obstruction as well as having appropriate temporary traffic control devices in place for both day and night visibility.

Care shall be taken to prevent any asphalt from entering any storm or sanitary structures. Upon completion of the asphalt removals, and daily for the duration of the work while there is a risk of asphalt entering storm or sanitary structures, the structures shall be inspected to ensure that there is no accumulation of asphalt (Petroleum Hydrocarbons, PHC). Should there be asphalt (PHC) in the structures, the Contractor shall immediately remove the asphalt (PHC) from the structures, at no additional cost to the Owner, to minimize the risk of environmental impacts at the outlet.

Should debris enter any structure, a combination hydro-jet cleaner shall be used to remove debris from catch basins, maintenance holes as per OPSS.MUNI 411.

Care shall also be taken to prevent any damage to existing water valve boxes or existing frame and grates. Unless otherwise approved by the Contract Administrator, asphalt removal operations shall be carried to within 300mm of all valve boxes. The Contractor will be responsible for hand chipping the remaining 300mm around all valve boxes.

Debris removed from structures shall be managed as per the General SP – Management of Excess Materials.

Any frame and grates and adjustment units, that are not scheduled to be adjusted, that do get damaged during the asphalt removal process shall be restored by the Contractor at no additional cost to the Owner.

Full Depth Asphalt Removal

Full Depth Asphalt Removal shall include road asphalt, driveway asphalt, boulevards and any sundry asphalt pavements areas as indicated on the drawings, typical cross-section and to the limits established by the Contract Administrator at the time of construction. Work shall be in accordance with OPSS.MUNI 510 Construction Specification For Removal.

When the scope of work includes reconstruction of multiple blocks, full depth removal of asphalt shall be limited to the block that the Contractor is working on. As work progresses, subsequent blocks of asphalt may be removed so as to stay ahead of the underground work.

Restoration of the roadway surfaces shall be in accordance with OPSS.MUNI 301 Construction Specification For Restoring Unpaved Roadway Surfaces.

Upon removal of the asphalt, the road shall be graded and maintained in a driveable state.

Management of Excess Materials

Disposal of asphalt shall be as outlined under the General SP- Management of Excess Materials.

Asphalt millings or pulverized material are prohibited from being used as trench backfill.

Measurement for Payment

Measurement of full-depth removal of asphalt pavement shall be by the area in square metres.

Basis of Payment

Payment at the Contract price for this item shall be full compensation for all labour, equipment and materials required to complete the asphalt removal and disposal.

Disturbed or damaged portions not designated for removal or salvage that result from the Contractor's operations shall be corrected or repaired at no additional cost to the Owner.

The cleaning of structures to remove asphalt from structures shall be done at the Contractor's expense.

ITEM NO. 9

ADJUST EXISTING MAINTENANCE HOLES AND CATCH BASINS FRAMES TO FINISHED GRADE

For the unit price bid, the Contractor shall supply all labour, equipment and material required to adjust the designated maintenance holes or catch basins to the grade established by the Contract Administrator at the time of construction. The frames and grates shall be adjusted by removing or placing additional **precast concrete adjustment** as per OPSD 704.010 and OPSS 408. The contractor shall place caulking or an approved alternative between each adjustment unit.

Parging

The precast adjustment units will be grouted into place by means of an approved mortar mix and shall be parged inside and outside at the top of each structure where the adjustment unit is placed and the underside of frame after final adjustment.

The outside of the precast adjustment units shall be completely wrapped with Denso LT Tape/Denso Paste. The Denso material shall completely cover the adjustment units and overlap onto the frame and concrete structure. All Denso products shall be applied as per the Manufacturer's recommendations.

ITEM NO. 10

REMOVAL OF EXISTING MAINTENANCE HOLES AND CATCH BASINS

For the unit price bid, the Contractor shall supply all labour, equipment and material required to excavate, remove and dispose of the maintenance holes and catch basins shown on the drawings or as indicated by the Contract Administrator at the time of construction. The Contractor shall backfill the excavation with Granular B Type I, compact the excavation and dispose of all debris to the satisfaction of the Contract Administrator. It will be the Contractor's responsibility to seal off any existing pipes or reconnect to new outlets.

The Contractor shall note here that catch basins constructed from inverted sewer tile shall not be considered for payment.

Management of excess materials shall be as outlined under the General SP- Management of Excess Materials.

ITEM NO. 11
REMOVAL OF EXISTING CULVERTS

For the unit price bid, the Contractor shall supply all labour, equipment and materials required to remove, including excavation and backfill for culverts across the roadway or entrances as shown on the plans or identified by the Contract Administrator at the time of construction. All work shall be done in accordance with OPSS.MUNI.421.

Excavated material and concrete shall be disposed of as outlined under the General SP - Management of Excess Materials.

All culvert material type including Corrugated Steel Pipe shall become the property of the Contractor and shall be disposed of outside the contract limits.

ITEM NO. 12
REMOVAL OF CONCRETE CURB OR CURB AND GUTTER

For the unit price bid the Contractor shall supply all labour, equipment, and materials required to remove and dispose of existing concrete curb or curb and gutter as indicated on the contract drawings or to the limits established by the Contract Administrator at the time of construction. The unit price bid shall include the cost of saw cutting the existing concrete curb to provide a straight joint between the existing and new curb. The unit price bid shall also include the cost of saw cutting the existing asphalt pavement adjacent to the curb and gutter being removed.

Management of excess materials shall be as outlined under the General SP- Management of Excess Materials.

ITEM NO. 13
PLACE CONCRETE MOUNTABLE CURB AND GUTTER (OPSD-600.100)

For the unit price bid, the Contractor shall supply all labour, equipment and materials required for the complete construction of the specified style of concrete curb & gutter, in accordance with OPSS.MUNI 353 – Construction Specification for Concrete Curb and Gutter Systems.

General

Concrete shall conform with CAN/CSA A23.1 and shall be Exposure Class C-2 with the following specifications:

- 32 MPa
- 0.45 w/c ratio
- 5-8% Air Entrainment

The submitted concrete mix design shall indicate the expected slump and if it is permitted to add water to the concrete mix on-site without exceeding the specified w/c ratio.

When placing concrete curb and gutter by the slip form method, contraction joints shall be saw-cut in the hardened concrete within a sufficient time of placing of the curb and gutter to prevent uncontrolled cracking. The spacing of these joints shall be not more than 5.0 metres.

When the concrete sidewalk is to be poured against the curb and gutter, contraction joints shall be saw-cut in the hardened concrete within a sufficient time of placing of the curb and gutter to prevent uncontrolled cracking. The spacing of these joints shall be not more than 3.0 metres.

When placing concrete curb and gutter systems by the formwork method, the formwork shall be accordance with OPSS 919-Construction Specification for Formwork and Falsework. The Contractor shall notify the Contract Administrator of the intent to use formwork at the pre-construction meeting.

Cold Weather Concreting- The placing and protection of concrete curb and gutter systems in cold weather shall be in accordance to OPSS.MUNI.904 – Construction Specification for Concrete Structures. No additional payment will be made for compliance with OPSS.MUNI.904.

Termination

When required, the Contractor shall provide end termination treatments as per OPSS 608.010.

ITEM NO. 14

REMOVAL OF CONCRETE SIDEWALK AND DRIVES

For the unit price bid, the Contractor shall supply all labour, equipment and material required to remove and dispose of concrete sidewalks and drives as indicated on the contract drawings or to the limits established by the Contract Administrator at the time of construction.

The unit price bid shall include saw cutting existing concrete sidewalk or drives at the limits established by the Contract Administrator. The Contractor shall be responsible for any damage, including damage to existing buildings, during the removal of existing sidewalks and drives, where applicable.

Excavated material and concrete shall be disposed of as outlined under the General SP - Management of Excess Materials.

ITEM NO. 15

PLACE CONCRETE SIDEWALK AND DRIVES

For the unit price bid, the Contractor shall supply all labour, equipment and materials required to place concrete sidewalks and drives where indicated on the drawings or to the limits established by the Contract Administrator at the time of construction in accordance with OPSS 351.

General

Concrete shall conform with CAN/CSA A23.1 and shall be Exposure Class C-2 with the following specifications:

- 32 MPa
- 0.45 w/c ratio
- 5-8% Air Entrainment

The submitted concrete mix design shall indicate the expected slump and if it is permitted to add water to the concrete mix on-site without exceeding the specified w/c ratio.

OPSS 351 is amended to include the following:

- 351.05.01 - Concrete - coarse aggregate shall be crushed limestone
- 351.05.04 - Granular - the granular material shall be Granular A.
- 351.07.02.02 - Granular Base - the placement depth of Granular A shall be 125 mm minimum or to the same depth as the sidewalk or drive.
- 351.07.10 - Sidewalks shall be given a broomed texture after finishing with a float. Driveways' surface texture shall match existing.
- 351.07.11 - Joints, all longitudinal and transverse joints **shall be saw cut contraction joints** in the hardened concrete within a sufficient time of placing the sidewalk. These joints shall align with the control joints in the curb when sidewalk is placed against the curb and gutter.
- 351.07.14 - Cold Weather Concreting- The placing and protection of concrete sidewalks in cold weather shall be in accordance to OPSS.MUNI.904 – Construction Specification for Concrete Structures. No additional payment will be made for compliance with OPSS.MUNI.904.

Exposed Aggregate

The Contractor shall provide a qualified supervisor, who has a minimum of 5 years experience with exposed aggregates and who has successfully completed exposed aggregate installations of high quality and similar in scope. The exposed aggregate finish shall be completed on site by trained and experienced workers.

The pea gravel used will have a strong influence on the final appearance of the slab. The Contractor shall supply a sample of the pea stone to be approved by the Contract Administrator and Owner prior to the start of construction.

When washing the cement off of the surface, the wash water is extremely high in pH, and has suspended solids. The Contractor shall ensure that the wash water does not enter the Municipal sewers.

The Contractor shall provide and use a sealer for all imprinted concrete. The sealer shall be a clear sealer with a non-slip additive being used – SureGrip or equivalent to be used. The concrete shall be washed prior to sealing.

Concrete Colouring

The colouring shall be integrally mixed with the aggregates and cement at the ready mix batch plant.

Care shall be taken to prevent colouring from spreading onto adjacent features. Plastic sheeting to be used to protect adjacent sidewalks, curbs, buildings, etc.

The Contractor shall provide a qualified supervisor, who has at minimum of five years experience with imprinted and textured concrete, and who has successfully completed imprinted concrete installations of high quality and similar in scope to that specified herein.

The concrete shall be coloured to match the existing driveway using an approved colour pigment supplied by Bomanite or approved equal. The Contractor is to verify and get approval from the Contract Administrator and Owner of colour prior to any installations. Samples shall be provided for acceptance.

Pattern Concrete

The Contractor shall also include in the unit price bid the supply and application of release agents and sealer. The cast-in-place concrete shall be imprinted on the site by trained and experienced workers.

The pattern to be used shall match the existing driveway slab.

The Contractor shall provide a curing compound to be applied to the surface of all imprinted concrete. The curing compound shall be applied as per the manufacturer's specifications.

The Contractor shall provide and use a release agent to facilitate the release of the imprinting tools from the concrete surface and to provide moderate colour variations to the textured surface. The release agent shall be applied evenly to the troweled surface prior to imprinting and applied as per the manufacturer's specifications.

The Contractor shall provide and use a sealer for all imprinted concrete. The sealer shall be a clear sealer with a non-slip additive being used – SureGrip or equivalent to be used. The concrete shall be washed prior to sealing.

ITEM NO. 16**SUPPLY AND INSTALL DETECTABLE WARNING SURFACES FOR PEDESTRIAN CROSSING**

For the unit price bid, the Contractor shall supply all labour, equipment and materials required to install the detectable warning surfaces. The warning surface shall be uncoated cast iron material with natural rust finish.

References**Canadian Standards Association**

CSA B651-2012 Accessible Design for the Built Environment

American Society of Testing and Materials

ASTM A 48 Standard Specification for Grey Iron Castings
 ASTM C 1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
 ASTM C 501-84 Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by the Taber Abraser

Ontario Provincial Legislation

O. Reg. 191/11 Accessibility for Ontarians with Disabilities Act, 2005

Materials

Tactile Walking Surface Indicators shall comply with O. Reg. 191/11 Accessibility for Ontarians with Disabilities Act, 2005, OPSD 310.039 and meet the following requirements.

Standard	Property	Minimum Result
ASTM A 48	Tensile Strength	Class 30B
ASTM C 1028	Slip Resistance	Dry 0.8 min, wet 0.65 min
ASTM C 501-84	Wear Resistance	Wear Index: >15

The truncated domes shall be of uniform size and shape. Units shall be uniform in texture, be free from pouring faults, sponginess, cracks, blowholes, and other defects, and have clean-cut and well-defined edges. All surfaces shall be uniform and free of flaking rust or mounts of rust or debris. Tactile walking surface indicators shall have ribs cast to the underside of the unit, have vent holes, and have a minimum plate thickness of 5 mm.

Installation

Tactile walking surface indicators shall be set and pressed into wet concrete to final elevation according to OPSD 310.033 and as per the manufacturer's recommendations. Remove any wet concrete that may spill onto tactile walking surface indicator surface.

ITEM NO. 17
TOPSOIL (IMPORTED)

For the unit price bid, the Contractor shall supply all labour, equipment and materials required to place approved screened topsoil where indicated on the drawings or to the limits established by the Contract Administrator at the time of construction.

For the unit price bid, the Contractor shall also fine grade to a uniform surface, the areas to be topsoiled as indicated on the contract drawings or to the limits established by the Contract Administrator at the time of construction. OPSS 802 shall apply for this item except that 802.09.01.02 shall be amended to make payment as noted in the Form of Tender. The topsoil shall be of good quality, subject to the Contract Administrator's approval. The Contractor shall uniformly spread the topsoil to a depth of not less than 100 mm. The cost of fine grading, supplying, placing and raking the topsoil shall be included in the unit price bid.

ITEM NO. 18
SODDING (NURSERY, UNSTAKED)

For the unit price bid, the Contractor shall supply all labour, equipment and materials required to place nursery sod where indicated on the drawings or to the limits established by the Contract Administrator at the time of construction. Included in the unit price bid shall be the supply and application of water.

All sod shall meet the requirements current at the date of contract, of the Ontario Sod Growers Association for No. 1 Bluegrass Fescue Sod and shall be cut to a minimum thickness of 19 mm.

All sod shall be delivered to the site in good condition and placed in a manner satisfactory to the Contract Administrator. Where the new sod is placed adjacent to the existing grass/lawn, the joint shall be prepared as per BMROSS Standard Drawing 9001 – Sod Placement Detail.

The sod shall be watered by the Contractor at its expense using approved equipment and in a manner that shall not erode, wash away, or damage the sod or topsoil.

The maintenance period for OPSS 803 has been amended. The sod will be evaluated prior to the expiration of the warranty period.

The Contract Administrator may request the delay of sod placement during hot dry weather conditions. No additional payment or penalty will result from this delay.

Measurement for Payment

Measurement for payment of sod shall be by the square meter based on areas measured in the field. Payment based on the amount of sod delivered will not be used.

ITEM NO. 19

SAW CUTTING AND MILLING LAP JOINTS

For the unit price bid, the Contractor shall supply all labour and equipment required to saw cut existing asphalt or concrete at locations and limits established by the Contract Administrator at the time of construction including milling existing asphalt 50mm deep x 450mm wide to create stepped lap joints at asphalt pavement tie-in points.

The Contractor will be responsible for supplying of water while saw cutting to eliminate dust.

ITEM NO. 20

PAVEMENT MARKINGS

The Contractor shall supply all labour, equipment and materials for mixing and applying pavement markings, as shown on the drawings or as noted in the Pavement Marking Chart. The application of pavement markings shall be in accordance with the following Special Provision, Contract Drawings, applicable Ontario Provincial Standard Specifications and Drawings as well as applicable Ontario Traffic Manuals and MTOD drawings, or BMROSS Standard Drawings.

Materials

Temporary Pavement Marking

Contractor's choice of material is restricted to temporary preformed or removable pavement marking tape.

Selection of pavement marking material for use on a particular type of pavement surface shall be according to the manufacturer's recommendations.

Permanent Pavement Marking

- Organic solvent-based traffic paint shall conform to OPSS.MUNI 1712
- Water-borne traffic paint shall conform to OPSS.MUNI 1716

Durable Pavement Marking

- Thermoplastic as per OPSS.MUNI 1713
- Field reacted polymer as per OPSS.MUNI 1714
- Preformed plastic tape of durable type as per OPSS.MUNI 1715

Colour

- White: CGSB 1-GP-12C White 513-301
- Yellow: Shall match either the yellow colour chip of the Ministry of Transportation, Ontario or U.S. Federal 595B, Yellow 33538
- Black: CGSB 1-GP-12C black5 12-301

Equipment

Paint applicator to be an approved pressure type distributor capable of applying paint in single or double and dashed lines and that will ensure uniform application and having a positive shut-off.

Timing for Pavement Markings

Pavement markings shall be applied no later than 20 days after paving.

Conditions of Surface

Pavement surface to be free from surface water, frost, ice, dust, oil, grease and other foreign materials. The Contractor will be required to sweep the roadway with a street sweeper vehicle immediately prior to application of the pavement markings.

Measurement for Payment

Measurement of pavement marking shall be by the horizontal length in metres of line excluding gaps.

Basis of Payment

Payment at the Contract price for the above tender items shall be full compensation for all labour, equipment, and material required to do the work.

ITEM NO. 21**SUPPLY, EXCAVATE FOR, PLACE AND BACKFILL STORM PIPE SEWERS**

For the unit price bid, the Contractor shall supply all labour, equipment and materials for the complete installation and testing of the storm sewers in accordance with OPSS.MUNI 401 – Construction Specification for Trenching, Backfilling, and Compacting; OPSS.MUNI.410 Construction Specification for Pipe Sewer Installation in Open Cut; and as indicated on the contract drawings. The sizes of the sewers as well as the backfill material are as noted on the Form of Tender and on the contract drawing.

Pipe Material

OPSS 410.05 materials is amended to accept the following pipe material for storm sewers:

- (a) Concrete Sewer Pipe (Rigid)
 - 150 mm to njhh250 mm non-reinforced Class 3 – CSA certified to A257.1
 - 300 mm or greater reinforced Pipe Class 65D (min) or as specified in the tender form – CSA certified to A257.2
- (b) Polyvinyl Chloride (PVC) Pipe (Flexible)
 - Class SDR 35 or Class V (320 kPa)
 - Annular ribbed profile for ribbed pipe
 - 200mm to 375mm Inclusive Class SDR35 or Class V (320kPa)
- (c) Catch Basins Laterals Polyvinyl Chloride (PVC) Pipe (Flexible)
 - 150mm to 250mm as specified in the Form of Tender – CSA Certified SDR35

If pipe material selected differs from that specified in the Form of Tender, the Contractor shall, upon request, supply the Contract Administrator with proof of CSA certification for both the pipe and the elastomeric gaskets, all at the expense of the Contractor.

Watertight Lateral Connection

HDPE, PVC Mains 450mm dia or less

- Factory manufactured tees.

HDPE and PVC Mains 525mm dia or greater

- Inserta Tee® Fittings in general conformance with to ASTM D3034, F1336 and F477.

Concrete Main, lateral connections up to 250mm dia

- Core Bell Adapter Couplings for sewer laterals from 100mm to 250mm in size.

Table 1: Watertight Lateral Connections

Main Line Sewer	Lateral Diameter	Main Line Pipe Material		
		HDPE	PVC	Concrete
Up to 450mm dia	100mm to 250mm dia	Manufactured Tee	Manufactured Tee	Core Bell Adapter
Greater than 525mm dia	100mm to 250mm dia	Inserta-Tee	Inserta-Tee	Core Bell Adapter

Storm Sewer Watertight Lateral Connection – General

The storm sewer tee, fitting or adapter shall include all required pipe coring, bends, fittings, and couplers required to connect the lateral sewer pipe required. The manufactured tee, fitting or adapter shall be installed as per manufacturer's recommendations. Care shall be taken to avoid installation of the PVC hub into the rubber gasket, beyond the painted alignment markings, which may restrict the passage of a mandrel through the pipe.

Storm Sewer Outlet Grate

- Steel CSA G40.21-M-300W, Hot Dipped galvanized G-164M after fabrication
- Welding shall conform to CSA W47.1 & CSA W59 Latest Edition
- Welding surfaces remain as welded 6mm Fill all around

Repair Coupling Dissimilar Materials (100mm to 375mm - Concrete, Clay, Steel, HDPE, PVC excl Ribbed PVC)

- Fernco Flexible Coupling

Repair Coupling – Dissimilar Materials (450mm dia and greater and all Ribbed PVC sizes)

- MarMac Dissimilar Pipe Couplers (DP Couplers)

Repair Coupling – HDPE to HDPE, HDPE to CSP (450mm to 900mm)

- Water-Tight, Gasketed, Bell-Bell Coupler

- **Filter Fabric**
- Filter wrap (non-woven type) such as Terrafix 270R or approved equivalent

Construction

For pipes with a nominal pipe diameter of 900mm or less, the trench shall allow for a minimum side clearance of 300mm.

For pipes with a nominal pipe diameter greater than 900mm, the trench shall allow for a minimum side clearance of 500mm.

Rigid Pipe – Bedding

Bedding shall be Class B as per OPSD 802.030, 802.031, 802.032, 802.033 or 802.034 for rigid pipe and whichever soil type is applicable.

The minimum bedding depth, below the pipe, shall be $0.15 \times \text{diameter of the pipe}$. In no case shall the bedding depth be less than 150mm or greater than 300mm.

Bedding material shall be Granular A.

Bedding shall be placed in uniform layers not exceeding 200 mm in thickness, loose measurement, and compacted to a minimum of 95% of the S.P.M.D.D. before a subsequent layer is placed.

Rigid Pipe - Cover

Cover material shall be Granular A material to a minimum of 300 mm above the top of pipe.

Cover shall be placed in uniform layers not exceeding 200 mm in thickness, loose measurement, and compacted to a minimum of 95% of the S.P.M.D.D. before a subsequent layer is placed.

Flexible Pipe - Embedment

Embedment shall be as per OPSD 802.010, 802.013, or 802.014 for **flexible pipe** and whichever soil type is applicable.

The minimum bedding depth, below the pipe, shall be 150mm.

Bedding material shall be Granular A.

Embedment shall be placed in uniform layers not exceeding 200 mm in thickness, loose measurement, and compacted to a minimum of 95% of the S.P.M.D.D. before a subsequent layer is placed.

Rigid Pipe and Flexible Pipe - Backfill

Backfill shall be as specified in the Form of Tender.

- If select native material is specified, backfill shall be compacted to a minimum of 95% of the S.P.M.D.D.. Backfill beneath areas to be developed as pavements shall be compacted to 98% S.P.M.D.D. for 1.0m below the granular roadbed.

OPSS 401.07.10.05 Backfill, has been amended as follows:

Backfill material shall be placed in uniform layers not exceeding 300mm in thickness, loose measurement, for the full width of the trench and each layer shall be compacted to the specified density before a subsequent layer is placed.

Power operated tractors or rolling equipment shall not be used for compacting until backfill material has been placed to a minimum of 900mm above the crown of the pipe.

The unit price bid shall include the cost of all granular bedding, embedment cover material and the backfilling noted herein.

All excavated material not required for backfill shall be disposed as outlined under the General SP – Management of Excess Materials. The cost of this work shall be included in the unit price bid of sewer.

Should the Contractor decide to use stone bedding to assist with trench stabilization it shall be at the Contractor's expense and the stone bedding material must be completely wrapped with a filter wrap (non-woven type). Edges of the filter wrap must be overlapped 300mm minimum with no gaps for fines to migrate. It is also to be noted that the use of stone may result in settlements; as such, the Contractor shall assume all risk in its use. Clear stone material which is not completely wrapped in approved filter wrap material will not be permitted for this project.

OPSS.MUNI 410.07.12 – Pipe Installation has been amended with the addition of the following:

410.07.12.01-General

Pipe shall be laid within the following horizontal alignment and vertical grade tolerances:

1. All pipe sections, within a sewer run, shall have positive slope towards the outlet.
2. Maximum vertical and horizontal alignments shall not exceed manufacturer's allowable deflections.
3. Maximum vertical and horizontal joint deflections shall not exceed manufacturers allowable deflections.
4. Should the installed grade deviate by more than 10% of the indicated installation grade, the sewer shall be re-laid.
5. Passing of a mandrel test does not supersede the need to be in compliance with the grade tolerances.

Installation of Repair Coupling

The selection of a pipe coupler is dependent upon the pipe materials and the diameters of the pipe to be coupled together. The Contractor shall refer to the Materials list in this Special Provision for the approved pipe couplers for this project.

In all cases, the ends of each pipe to be coupled, shall be clean and free of debris. The coupler shall be installed as per the manufacturer's recommendations.

Care shall also be taken to vertically align the pipes so that the invert of the upstream pipe section matches or is slightly above the invert of the downstream pipe section.

For pipe diameters 375mm or less, the Contractor shall carefully compact the granular around the pipe to provide vertical and lateral support of the joint.

For pipe diameters greater than 375mm dia., a concrete collar shall be poured around the entire pipe joint to provide vertical and lateral support to the joint. The collar shall be a minimum of 150mm thick under the pipe joint

Compaction – General

Compaction shall be as per OPSS.MUNI 501 – Construction Specification for Compacting. The type of compaction equipment used shall be suited to the material to be compacted, degree of compaction required, and space available. Selection of compaction equipment shall be determined by the Contractor with a list of the proposed equipment being submitted at the pre-construction meeting.

Trench widths shall be sufficiently wide enough, but no greater than necessary, to ensure working room to properly and safely place and compact haunching and other embedment materials. The space between the pipe and trench wall must be wider than the compaction equipment used in the pipe zone.

In pipe trenches, to 900mm above the crown of the pipe, small, hand-held or walk-behind compactors are required, not only to preclude damage to the pipe, but to ensure thorough compaction in the confined areas around the pipe and along the trench wall.

Power operated tractors or rolling equipment shall not be used for compacting until backfill material has been placed to a minimum of 900mm above the crown of the pipe.

All costs of compaction and water used for compaction shall be included in the unit price for sewer.

Removing Existing Sewers, Watermains and Minor Structures

The unit price bid shall include the cost of removing existing sewers, watermains, or minor structures encountered in the trench excavation where applicable.

Disposal of existing sewers, watermains and/or minor structures shall be as outlined under the General SP- Management of Excess Materials.

Abandoning Sewers

The unit price bid shall include the cost of plugging up, by means of brick and mortar and to the satisfaction of the Contract Administrator, certain existing sewers or drains that are to be abandoned due to being intercepted by the installation of new sewer(s).

Connect To Existing

The Contractor shall make all connections to new and existing catch basins, maintenance holes, culverts or sewers (regardless of pipe material) in a manner set out in the contract drawings or as determined by the Contract Administrator at the time of construction.

The Contractor shall fill the void between the sewer pipe and the concrete structure with grout. The grout shall be trowelled smooth on both the inside and the outside of the structure.

Connections between new sewers and existing sewers to be made using a manufactured repair coupling.

Upon completion of the connection to the structure, the floor of the structures shall be cleaned out by the Contractor.

Break Into and Connect To Existing Structures

The Contractor shall saw cut or core an opening in the existing catch basins, maintenance hole, large enough to insert the sewer pipe, in a manner set out in the contract drawings or as determined by the Contract Administrator at the time of construction.

The Contractor shall fill the void between the sewer pipe and the concrete structure with grout. The grout shall be trowelled smooth on both the inside and the outside of the structure.

Upon completion of the connection, the floor of the structures shall be cleaned out by the Contractor.

Maintenance of Flow

The Contractor shall provide for the maintenance of flow in all sewers and maintenance holes at all times.

Management of Excess Materials

Management of excess materials shall be as outlined under the General Special Provision - Management of Excess Materials.

Restoration

Restoration shall be as outlined under General SP - Restoration.

Inspection and Testing

OPSS.MUNI 410.07.16 – Field Testing has been amended with the addition/clarification as follows:

410.07.16.02 - Prequalification Leakage Tests are not a requirement when sewers are active.

410.07.16.03 - Infiltration Tests are not a requirement when sewers are active.

410.07.16.04 - Exfiltration Tests are not a requirement when sewers are active.

410.07.16.05 – Deflection testing **shall** be performed on all pipe sewers constructed using flexible pipe.

Included in the unit price bid for the sewer, the Contractor shall supply all labour, equipment and materials to flush, clean and perform mandrel deflection testing on the sewers as per OPSS 438.MUNI - Construction Specification for Mandrel Deflection Inspections as well as OPSS 411.MUNI-Construction Specification for the Cleaning and Flushing of Culverts, Wall Drains, Pipe Sewers, Catch Basins, Maintenance Holes, Ditch Inlets, and Oil/Grit Separators.

The deflection testing device shall be pulled manually through the pipe **not sooner than 30 Days after the completion of backfilling (unless authorized by the Contract Administrator) and installation of service connections and shall be before placement of asphalt or concrete.**

410.07.16.06 Closed-Circuit Television (CCTV) Inspection Pipe sewers **shall** be performed on all sewers and services.

Included in the unit price bid for the sewer, the Contractor shall supply all labour, equipment and materials to flush, clean and perform a high quality, CCTV inspection of the sewers complete with a digital submission of the video and report as per OPSS 409.MUNI – Construction Specification for Closed-Circuit Television (CCTV) Inspection of Pipelines as well as OPSS 411.MUNI Construction Specification for the Cleaning and Flushing of Culverts, Wall Drains, Pipe Sewers, Catch Basins, Maintenance Holes, Ditch Inlets, and Oil/Grit Separators.

The CCTV inspection shall be performed **not sooner than 30 Days after the completion of backfilling (unless authorized by the Contract Administrator) and installation of service connections and shall be before placement of asphalt or concrete.**

Should deficiencies be identified upon review of the camera inspection video or a failed deflection test, the deficiencies shall be promptly corrected and re-inspected with CCTV inspection. All costs associated with the correction of the deficiencies, restoration and additional CCTV inspections shall be borne by the Contractor.

Measurement for Payment

410.09 Measurement for Payment has been amended as follows:

410.09.01.01 Pipe Sewers

Measurement of pipe sewers shall be by length in metres along the horizontal centreline length of the pipe from the centre of one drainage structure to the centre of another drainage structure or outlet end of the pipe sewer. Included in the lineal metres of sewer, are any service tees.

When bends are used on concrete sewers, the measurement for the pipe sewer shall include the length of the bend.

If there is a pay item for a pipe bend, a count shall be made of the number of bends used.

There will be no measurement for the dewatering.

Basis of Payment

410.10 Basis of Payment

Payment at the Contract price for sewer pipe shall be full compensation for all labour, equipment, and material required to supply and install the gravity sewers, bends, tees, grates etc.

Payment at the Contract price for Connect to Existing Sewers shall be full compensation for all labour, equipment, and material required to make the connection.

Payment at the Contract price for the Breaking Into Existing Structures shall be full compensation for all labour, equipment, and material required to do the work.

No additional payment will be made for dewatering. Should dewatering be required, the Contract price for the installation of pipe sewers, shall include full compensation for all labour, equipment, and material to do the dewatering.

The unit price bid for the storm sewers, shall include all costs for labour, equipment and materials to perform the dewatering.

The unit price bid shall include all labour, equipment, and material to do the deflection testing and the CCTV investigation.

ITEM NO. 22

SUPPLY, EXCAVATE FOR, PLACE AND BACKFILL CATCH BASINS

For the unit price bid, the Contractor shall supply all labour, equipment and materials for the complete installation of the structures as indicated on the contract drawings and in accordance with OPSS.MUNI 407. The sizes of the structures are as noted on the Form of Tender and on the contract drawing.

The Contractor shall excavate to the required grade, supply the necessary granular bedding and backfill and compact the material in accordance with OPSS.MUNI 402.

The Contractor shall supply and install frame and grates as listed on the contract drawings to the grade established at the time of construction. Adjustment of the frame and grate to grade shall be achieved using precast concrete adjustment. The contractor shall place caulking or approved

alternative between each adjustment unit. The contractor shall include the cost of connecting new basins to existing sewers as determined at the time of construction.

Design and Submissions Required

407.04.01 Submission Requirements shall be amended with the following addition:

c) Working Drawings for all precast structures shall be submitted no later than 10 Business Days prior to construction. Contractors shall note that the review of the working drawings may take some time depending on the volume of drawings submitted. Contractors are advised to prioritize the working drawing submissions, with the highest priority being submitted first. Contractor claims for loss time due to working drawing review will not be considered.

d) The Contractor shall confirm in writing to the Contract Administrator that the means of connecting sewers to the maintenance holes is appropriate for the materials being used and for the site conditions.

As noted in **GC 3.02. Working Drawings**

04. The Contract Administrator's review shall be to check for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the Working Drawings or of responsibility for meeting all requirements of the Contract Documents, unless a deviation on the Working Drawings has been approved in writing by the Contract Administrator.

Parging

The adjustment units will be grouted into place by means of an approved mortar mix and shall be parged inside and outside at the top of each structure where the adjustment unit is placed and the underside of frame after final adjustment.

The outside of the adjustment units shall be completely wrapped with Denso LT Tape/Denso Paste. The Denso material shall completely cover the adjustment units and overlap onto the frame and concrete structure. All Denso products shall be applied as per the Manufacturer's recommendations.

Compaction shall be as per OPSS.MUNI 501 – Construction Specification for Compacting. The type of compaction equipment used shall be suited to the material to be compacted, degree of compaction required, and space available. Selection of compaction equipment shall be determined by the Contractor with a list of the proposed equipment being submitted at the pre-construction meeting.

Payment for the structure shall be 80% of the unit price for the installation and the remaining 20% of the unit price upon completion of parging and removal of debris from the bottom of the structure.

ITEM NO. 23**SUPPLY, EXCAVATE FOR, PLACE AND BACKFILL PRECAST MAINTENANCE HOLES AND MAINTENANCE HOLE-CATCH BASINS, INCLUDING FRAMES AND GRATES**

For the unit price bid, the Contractor shall supply all labour, equipment and materials for the complete installation of the structures and in accordance with OPSS.MUNI 407. The sizes of the structures are as noted on the Form of Tender and on the contract drawing.

Design and Submissions Required

407.04.01 Submission Requirements shall be amended with the following addition:

c) Working Drawings for all precast structures shall be submitted no later than 10 Business Days prior to construction. Contractors shall note that the review of the working drawings may take some time depending on the volume of drawings submitted. Contractors are advised to prioritize the working drawing submissions, with the highest priority being submitted first. Contractor claims for loss time due to working drawing review will not be considered.

d) The Contractor shall confirm in writing to the Contract Administrator that the means of connecting sewers to the maintenance holes is appropriate for the materials being used and for the site conditions.

As noted in **GC 3.02. Working Drawings**

04. The Contract Administrator's review shall be to check for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the Working Drawings or of responsibility for meeting all requirements of the Contract Documents, unless a deviation on the Working Drawings has been approved in writing by the Contract Administrator.

The Contractor shall excavate to the required grade, supply the necessary granular bedding and backfill and compact the material in accordance with OPSS.MUNI 402.

Steel reinforcement shall be according to OPSS.MUNI.1440. Steel reinforcement for precast concrete components shall be:

- a) Steel bars, 400MPa minimum yield strength
- b) Welded steel wire, 500 MPa minimum yield strength
- c) Welded deformed steel wire, 500 MPA minimum yield strength

The Contractor shall supply and install frames and grates as listed on the drawings to the grade established at the time of construction. Adjustment of the frame and grate to grade shall be achieved using precast concrete adjustment. The contractor shall place caulking or approved alternative between each adjustment unit. The Contractor shall supply ladder rungs and all materials to make all connections to existing sewers.

Also, when required, included in the unit price bid, the Contractor shall include the benching of all storm maintenance holes designated, as per OPSD 701.021.

Where new maintenance holes are to be constructed on existing sewers, the Contractor will be required to maintain the sewage flow by either piping through the maintenance hole location or providing by-pass pumping around the maintenance hole site. Prior to the commencement of work, the Contract Administrator shall approve the method proposed by the Contractor for maintaining flow.

The Contractor shall confirm in writing to the Contract Administrator that the means of connecting storm sewers to the storm manholes is appropriate for the materials being used and for the site conditions.

Waterproofing – Adjustment Units

The outside of the precast adjustment units shall be completely wrapped with a waterproofing membrane. The waterproofing membrane shall completely cover the adjustment units and overlap onto the frame and concrete structure. The waterproof membrane shall be Mel-Rol or approved equivalent for the maintenance hole joints and shall be a minimum of 300mm wide, extending a minimum of 150mm above and below each joint. The Contractor shall ensure that the concrete surface is cleaned and the manufacturer recommended primer is applied prior to installing the waterproofing membrane.

Installation shall be as per BMROSS Standard Drawing 720 – Waterproofing Membrane - Storm and Sanitary Structures and the membrane manufacturers recommendations.

Parging

The precast adjustment units will be grouted into place by means of an approved mortar mix and shall be parged inside and outside at the top of each structure where the adjustment unit is placed and the underside of frame after final adjustment.

The outside of the precast adjustment units shall be completely wrapped with Denso LT Tape/Denso Paste. The Denso material shall completely cover the adjustment units and overlap onto the frame and concrete structure. All Denso products shall be applied as per the Manufacturer's recommendations.

Compaction shall be as per OPSS.MUNI 501 – Construction Specification for Compacting.

The type of compaction equipment used shall be suited to the material to be compacted, degree of compaction required, and space available. Selection of compaction equipment shall be determined by the Contractor with a list of the proposed equipment being submitted at the pre-construction meeting.

Payment for the structure shall be 80% of the unit price for the installation and 20% of unit price upon completion of parging, removal of debris from the bottom of the structure and benching when applicable.

ITEM NO. 24**RECONNECT EXISTING DRAINS AND SERVICES (up to 250 mm dia.)**

For the unit price bid, the Contractor shall supply all labour, equipment and material to excavate for, supply and install, reconnect and backfill all existing drains and/or services encountered at the time of construction. All connections shall be made with approved couplings (Fernco or equivalent).

Payment under this item will only be paid when it is determined by the Contract Administrator that the work is required to:

- Relocate drains and services that conflict with the sewer and/or watermain in horizontal or vertical alignment.
- Repair any drains and services encountered that have not been shown on the drawings.

The Contractor is responsible for replacing all other broken or damaged drains and services encountered in the excavation.

Pipe Material

Pipe material for repairs shall be PVC SDR-28 for 100 mm – 150 mm diameter and PVC SDR-35 for 200 mm – 250 mm diameter.

Bedding, Embedment and Backfill

Embedment shall be as per OPSD 802.010, OPSD 802.013 or 802.014 for flexible pipe and whichever soil type is applicable.

Embedment material shall be Granular A to 300 mm (min) above the top of the pipe.

ITEM NO. 25**SUPPLY AND PLACE 150 mm FILTER WRAPPED PERFORATED SUBDRAIN INCLUDING EXCAVATION**

For the unit price bid, the Contractor shall excavate for, supply and install the subdrain, including filter wrap (non-woven type) Class 1 with a Filter Opening Size (FOS) of 130-100 µm as indicated on the contract drawings or to the limits established by the Contract Administrator at the time of construction.

The supply and backfilling of granular backfill shall be paid for with the granular item for the roadbed.

Pipe Material

OPSS 405.05 Materials is amended to accept the following material for pipe subdrains.

- (a) Perforated, corrugated high density polyethylene subdrain with 210kPa pipe stiffness for continuous subdrains behind the curb.
- (b) Polyethylene Big "O" Boss 2000 or equivalent for maintenance holes subdrains. Installation as per OPSD.809.010 (6m length).

The filter wrap geotextile shall be in accordance with OPSS 1860.

The maximum stone size for the granular backfill shall be 50 mm dia.

ITEM NO. 26

REMOVE EXISTING STORM SEWER

For the unit price bid the Contractor shall supply all labour, equipment and materials to remove and backfill existing storm sewers as indicated on the contract drawings and as determined by the Contract Administrator at the time of construction.

The unit price bid shall also include the granular backfill material. Backfill to be compacted to a minimum dry density of 100%. Payment of this item will only be made where the existing sewer being removed is outside of the excavated trench for the other proposed works in the opinion of the Contract Administrator.

Excavated material and storm sewer pipe shall be managed by the Contractor with the cost of this work being included in the unit price bid.

ITEM NO. 27

INSTALLATION OF STORM SERVICES

For the unit price bid, the Contractor shall supply all labour, equipment and materials for the complete installation of the storm services as indicated on the contract drawings. The sizes of the services are as noted on the Form of Tender. The unit price bid shall also include the cost of the main line service tee and end cap required for each service.

Service tees for use with flexible mainline sewer pipe shall be factory manufactured tees. Service tees for use with rigid mainline sewer to be factory installed "Inserta" tees or approved equal. Inserta tees to be the same diameter or larger than the servicing piping. All required reducers shall be included in the unit price bid for this item.

The service connections shall be as per OPSD 1006.010 for sewer service connections for main pipe sewer.

Pipe Material

Pipe material for storm sewer services shall be polyvinyl chloride (PVC) SDR-28.

Bedding and Backfill

Bedding and cover shall be as per OPSPD 1006.010 for service connections. Backfill shall be as noted on the Form of Tender.

Bedding and embedment material shall be Granular A. Cover material shall be approved granular material or select native granular material to 300 mm above the top of pipe. Bedding, embedment and cover shall be placed in uniform layers not exceeding 200 mm in thickness, loose measurement, and compacted to 95% of the maximum dry density before a subsequent layer is placed.

Backfill of storm service under the road platform shall match mainline storm sewer backfill material. Backfill beyond the road platform shall be as specified in the Form of Tender. If select native material is specified, it shall be compacted to a minimum dry density of 95%. If granular material is specified, it shall be compacted to a minimum dry density of 100%. Backfill shall be placed in uniform layers not exceeding 300 mm in thickness for the full width of the trench and compacted to the specified density before a subsequent layer is placed.

All excavated material not required for backfill shall be disposed as outlined under the General SP – Management of Excess Materials. The cost of this work shall be included in the unit price bid.

Should the Contractor decide to use stone bedding to assist with trench stabilization it shall be at the Contractor's expense. It is also to be noted that the use of stone may result in settlement of the installed piping; as such, the Contractor shall assume all risk in its use.

Compaction shall be as per OPSS.MUNI 501 – Construction Specification for Compacting. The type of compaction equipment used shall be suited to the material to be compacted, degree of compaction required, and space available. Selection of compaction equipment shall be determined by the Contractor with a list of the proposed equipment being submitted at the pre-construction meeting.

All bedding, embedment, cover and backfill materials shall be placed in layers prior to compacting in accordance with OPSS.MUNI 401.07.10.

Installation of Services

For the unit price bid, the Contractor shall include the cost of connecting to existing storm services with the approved fittings and material to make the connection (Fernco or equivalent). The unit price bid shall include all restoration outside the limits of the grading operations of the road reconstruction part of the project, when applicable.

All services to vacant lots or previously unserviced lots, shall include an end cap and the ends of all services shall be marked by a 50 mm x 100 mm wood post extending from the service to 300 mm above the surface of the ground with the top section painted fluorescent green. The post shall be supplied and placed by the Contractor.

Closed Circuit Television Inspection of Pipelines

All work shall be in accordance with OPSS 409-Construction Specification for Closed-Circuit Television Inspection of Pipelines. The unit price bid for the service installation shall include the cost of the CCTV inspection.

The Contractor will engage a Closed Circuit Television Inspection Contractor and co-ordinate the work to have it completed prior to **achieving substantial performance** for the contract.

The General Contractor will be responsible for hiring the Closed Circuit Television Inspection Contractor directly; however, the Closed Circuit Television inspection work will be carried out to the satisfaction of, the Contract Administrator.

Should deficiencies be identified upon review of the camera inspection video, the deficiencies shall be promptly corrected and a re-inspected with CCTV inspection. All costs associated with the CCTV inspections shall be borne by the Contractor.

Restoration

Restoration shall be as outlined under General SP - Restoration.

ITEM NO. 28

STORM SEWER SERVICE CLEANOUT

For the unit price bid, the Contractor shall supply all labour and materials for the complete installation of service cleanouts as shown on the BMROSS Standard Drawing 1000C.

Cleanouts located within a lawn area, shall have a 100 mm diameter, cast iron, MCO #DF44 c/w solvent weld bushing or approved equivalent. Adaptors to be provided as required.

Cleanouts located within driveways or sidewalks, shall have a cast iron, 100 mm diameter, Sigma Corporation Model No. VB-SCO4L cover or approved equivalent that meets H20 Loading Standards. Adaptors to be provided as required.

Each cleanout, for a vacant lot or previously unserviced lot, shall be clearly marked with a minimum of 2.0 m of 50 x 100 wooden post. Each cleanout for an occupied property shall be terminated with the cover flush to the surrounding surface.

Basis of Payment

Payment shall be as follows:

- 80% for all piping
- 20% for the installation of the cleanout cap to finish grade

ITEM NOS. 29-33**WATERMAIN INSTALLATION****DESIGN AND SUBMISSION REQUIREMENTS**

The Contractor shall comply with the Safe Drinking Water Act (SDWA) and all applicable regulations made in accordance with that act, including but not limited to the Drinking Water Works Permit (DWWP), the Municipal Drinking Water Licence (MDWL) and the most current version of ANSI/AWWA C651-Disinfecting Watermains. Both the DWWP and the MDWL can be made available to the Contractor by the Contract Administrator upon request. For the purpose of the DWWP Condition 2.3, the most recent version of the Ministry of the Environment, Conservation and Parks "Watermain Disinfection Procedure", supersedes ANSI/AWWA C651-Disinfecting Watermains.

All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.

Watermains that form part of a Drinking Water System can only be isolated and placed into service by Certified Operators. Activities performed on isolated watermains are not required to be performed by Certified Operators.

Any water used for the purposes of, but not limited to, flushing, swabbing, disinfection, hydrostatic testing, and displacing water to obtain samples for testing, shall be drinking water. Any temporary water supply to a new watermain shall be flushed prior to its use as a water source.

The Contractor shall obtain the approval of the Overall Responsible Operator (ORO) of the Operating Authority of the proposed disruption of service to make all connections to the existing distribution system.

The watermain construction shall be staged to minimize water service disruption to residences. Property owners shall be informed by the Contractor a minimum of 24 hours in advance, as to when these disruptions will occur. All costs associated with providing notice to the property owners shall be borne by the Contractor.

Only authorized Operating Authority personnel shall operate valves on existing watermains for the purpose of controlling water. No person other than the authorized Operating Authority personnel shall shut down or charge any section of existing watermain or operate any valve for the purpose of controlling water from existing watermains.

The Contractor shall provide the Overall Responsible Operator (ORO) of the Operating Authority at least 48 hours advance notice when a change in control of the water is required. All

necessary water supply interruptions shall be scheduled in co-operation with the local Operating Authority.

Prior to site activities, the Contractor shall submit a Work Plan for review by the Contract Administrator. The Work Plan shall provide the following construction details:

- Manufacturer's confirmation of pipe class and restraining system design
- Connection point(s) between existing and new watermains
- Source water connection(s)
- Cross-connection prevention procedures and equipment
- Temporary watermains if any
- Swabbing details, including swab velocities
- Hydrostatic pressure test details, including calculations of allowable leakage
- Disinfection details, including calculations of required chlorine
- Dechlorination details
- Flushing water disposal details
- Details of final connection to existing watermain, including valve operation
- Details of final connection to existing services, including curb stop operation
- Watermain break disinfection procedure
- Tracer Wire conductivity testing procedures, including wire specification
- Proof of Ontario Water Works Association (OWWA) Certified Cross Connection Control Specialist Certificate or a Ministry-approved equivalent
- Draft copy of Notice of Water Service Disruptions

The Contractor shall allow two weeks for the review and approval of the Work Plan. **No site work shall proceed until the Work Plan has been approved by the Contract Administrator.** The Work Plan shall be submitted no later than at the pre-construction meeting.

Thrust Restraints

OPSS 441.07.23 is amended to the following insert:

General

Restrain lengths for watermain up to and including 300 mm shall be in accordance with the Restraint Requirements outlined below. Restrained length calculations for watermains greater than 300mm in diameter shall be supplied by the pipe manufacturer using the design criteria set out below.

For DI pipe refer to AWWA C600 – Section 3.8. For PVC pipe refer to UNI-BELL and AWWA M-23.

Restraint Requirements for Watermains up to and including 300mm in Diameter

All inline valves up to and including 300 mm in size shall be mechanically restrained as well as one (1) full pipe length (6 m) on each side of the restrained valve must be mechanically restrained with a minimum of two (2) steel rods being used on each restraint.

All bends up to and including 200 mm in size must be mechanically restrained as well as one (1) full pipe length (6 m) on each side of the restrained bend must be mechanically restrained with a minimum of two (2) steel rods being used on each restraint.

All bends from 250 mm up to and including 300 mm in size shall be mechanically restrained as well as two (2) full pipe lengths (12 m) on each side of the restrained bend must be mechanically restrained with a minimum of four (4) steel rods being used on each restraint.

All dead ended watermains up to and including 200 mm in size, including caps and/or plugs, shall be mechanically restrained as well as three (3) full pipe lengths (18 m) must be restrained prior to the end of that watermain with a minimum of two (2) steel rods being used on each restraint.

All dead ended watermains from 250 and up to and including 300 mm in size, including caps and/or plugs, shall be mechanically restrained, as well five (5) full pipe lengths (30 m) must be restrained prior to the end of that watermain with a minimum of four (4) steel rods being used on each restraint.

All fittings which would include tees, fire hydrants, reducers and crosses up to and including 300 mm in size shall be restrained and as well two (2) full pipe length (12 m) on each side of the fitting and all must be mechanically restrained with a minimum of two (2) steel rods being used on each restraint.

All branch valves shall be treated as dead end watermains and shall be restrained according to the above mentioned dead end watermain criteria.

NOTE: If any joint is encountered in the above restrained lengths, it must also be restrained.

Restraint Requirements on Watermains Greater Than 300mm in Diameter

It is the responsibility of the Contractor to ensure the performance of the pipe and the restraining systems.

Design of the pipe joint restraining systems shall consider the pressures that the system will be subjected to as well as any expansion and contraction due to temperature changes during and following construction of the works.

Town of Plympton-Wyoming Material:

1. Watermain Pipe

Supply and Place Watermain pipe and appurtenances meeting the specifications outlined below, (unless the pipe material is stated on the contract drawings or otherwise specified):

- For sizes of 100mm to 300mm, pipe must conform to, A.W.W.A. C-900, Pressure Class 150 psi, (DR 18) OPSS 441 and certified Third Party in accordance to OPSS and Standards Council of Canada; CSA B137.3 PVC watermain pipe and appurtenances.

Or

"Molecularly oriented PVC pipe in sizes 100mm (4") through 300mm (12") shall be Biaxially Oriented (molecular orientation in two directions), CSA certified to CSA Standard B137.3.1-09, third party certified to AWWA C909 and NSF 61 for potable water use. The pipe shall have Cast Iron Outside Diameters (CIOD), be color coded blue and have a Pressure Class of 235 psi." Where required, Bionax PVCO Approved Restraints Pipe-to-Pipe and Pipe-to-Fittings Restrainers shall be used as per manufacturer's recommendations". Pipe to be IPEX Bionax PVCO, CIOD watermain pressure pipe 100mm (4") through 300mm (12").

Or

Fusible PVC pipe shall be certified to CSA B137.3 and NSF61, and conform to AWWA C900 or AWWA C905. Testing shall be in accordance with CSA B137.3 and AWWA standards for all pipe types.

- All joints to be bell and spigot with NSF approved rubber gaskets conforming to ASTM D3139; CSA logo must be clearly and permanently marked on all product; All watermain to be blue in colour

- All Pipes and fittings shall be manufactured by IPEX Inc; Northern Pipes; Rehau Industries Inc; Royal Pipe Co; Harrington Corporation; Diamond Plastic Corporation or National Pipe and Plastic Inc; or approved equal.

- Injection molded fittings (AWWA C907) shall be used up to 12" (300mm) diameter size. Fabricated fittings shall not be used.

- Tracer wire shall be installed on all non-metallic watermains, hydrants lateral and water services.

2. Water Services and Meters

i) Residential

The water services shall be 25mm CTS SDR9 PEX or PE-RT SDR9 CSA-B137.18 service tubing extending from the watermain to the curb stop box. No couplings are allowed within the municipal right of way.

Where the water meter is not installed inside a new or existing dwelling, at the discretion of the Contract Administrator the meter may be installed in a meter pit at the property line.

Water services can be dry tap or hot tap. If the hot tap option is selected then it should be completed while watermain is at line pressure.

3. Gate Valves

Gate valves for watermain use shall conform to A.W.W.A. C509- 87 Standard for Resilient Seated Gate Valves for Water and Sewage Systems and shall conform to OPSS 441 and shall:

- For pipe sizes 100 mm (4") diameter to 200 mm (8") diameter, Joint ends must be Push on, complete with valve box, cover, riser and fittings.
- For pipe sizes 250 mm (10") and greater diameter, Joint ends must be mechanical joint with restrained gland packs, complete with valve box, cover, riser and fittings.
- Have resilient seated fully encapsulated gates
- Have a working design water pressure of 14.1 kg/cm (200 PSI) for all pipe sizes from 75 mm to 300 mm nominal pipe sizes
- All watermain gate valves turn to the left hand (counter clockwise) to open and shall have black painted operating nuts
- Have all exposed nuts and bolts made of type 304 stainless steel
- Have push-on joints (see AWWA 509 Sec 4.5.3 as per ANSI/A.W.W.A. C110/A21.11)
- Have epoxy coating to all interior and exterior ferrous surfaces as per A.W.W.A. C550-81
- Have a valve stem made of manganese bronze which has a yield strength greater than 207 MPa (30,000 PSI) or made of stainless steel BS420S37
- Be manufactured by Mueller (Model #A-2360-40) or American AVK Co series #25, #65 or Clow (model F6112)
- For pipe sizes 100mm (4") diameter to 200mm (8") diameter Push on joints, injection molded complete with valve box, cover, riser and fittings
- For pipe sizes 250mm (10") diameter and greater shall be mechanical joint with restrained gland packs, complete with valve box, cover, riser and fittings.

4. Valve Boxes

Valve boxes shall be the 130 mm screw type as supplied by Bibby Waterworks Inc. or Domestic Foundry Limited. Valve boxes to come with a hole to accommodate the tracer wire. They shall not transmit shock or stress to the valve and shall be centered and plumbed over the wrench nut

of the valve with the box cover flush with the ground surface. Extensions to be installed on the operating nuts of valves and be sized to extend up to within 150 mm and 450 mm below the valve box cover.

5. Fire Hydrants

Fire hydrants shall be Mueller Canada Valve “Century Hydrant”, conforming to A.W.W.A Standard C502 with an easy maintenance hydrant operating system. Hydrants shall be a minimum of 1.98 meters long from the springline of the hydrant lead to the fracture head flange (6’-6” buried) unless otherwise required, opening counter clockwise, plugged wet barrel (nondraining). Base connections are to be push-on style, ground and barrel flanges, base and barrel flanges to have stainless steel nuts and bolts. In commercial, institutional, rural, industrial and high density residential locations they will be required to have two C.S.A. 65 mm hose nozzles and a standard 100 mm Storz pumper connection (painted black).

6. Hydrant Extensions

Hydrant extensions shall be complete with one piece rod and all necessary appurtenances to a maximum height of 300mm (12”). Multiple hydrant extensions are not permitted.

7. Brass Valves & Fittings to Service Lines

Brass valves and fittings to service lines shall conform to ANSI/A.W.W.A. C800 latest revisions. All connections shall be compression connections unless individual approval is given by the Contract Administrator for an alternate connection. All connections must provide a leak-proof seal and retaining service tubing or copper without slippage at a working pressure of 1050 KPa (150 PSI).

i) Corporation Stops

Corporation stops shall be no-lead brass, have inlet of AWWA taper thread (CC) and outlet shall be compression type (Mueller 110 style). All brass cast parts shall be certified to NSF-61 standard. Corporation stops shall be Mueller 300, Ford FB100NL or Cambridge Brass Series 301NL.

ii) Curb Stops and Boxes

Curb stops shall be ball style for all sizes and be no-lead brass certified to NSF-61 standard. Valves will have a minimum working pressure of 150 PSI and have a full bore ball. Approved manufacturers are Mueller 300, Cambridge 202NL & Ford B44NL. Curb stop boxes shall be Mueller type H-10306 – H-10334 or Clow Model No. VSP1 and VSP2. Service boxes shall have type 304 stainless steel rods and stainless steel cotter pins.

iii) Couplings and Adapters

Couplings and adapters shall be three piece couplings with compression joints at each end to fit the applicable connecting pipe sizes. Couplings shall be Mueller H15403 or Cambridge Brass 119NL or Ford C44 series with “Grip” or “Pack” or “Quick” joints.

8. Pipe for Services

All water services shall be PEX pipe manufactured to AWWA C904 and to SDR9 Copper tube size. All PEX shall be Blue in colour for potable water and certified to CSA B137.5 - cross linked polyethylene tubing for pressure application. All tubing will be certified to ASTM F876 and F877 and certified to NSF 14 and NSF 61. Approved PEX tubing may be Rehau Municipex and Ipex Blue904. All PEX tubing to be installed with tracer wire as per standard specification.

9. Restraint Clamps, Tie-Backs, Anchor Rods

- For permanent installations, all clamps shall be smoothed over by using mastic and then the surface wrapped with Denso Tape.
- All restraining clamps shall be torqued to the Manufactures Specifications.
- Tie-backs and anchor rods used for restraining, anchoring or for thrusting of the watermain will be of 19 mm diameter solid threaded bar and bolts and treated with Petrolatum and Petroleum coating system.
- Concrete thrust blocks should be used wherever possible as per O.P.S.D. 1103.01
- Restraint clamps shall be manufactured by Uniflange, model 1300 series, Sigma or Clow or equivalent as approved by the Manufacturer.
- Restraint clamps for mechanical joint fittings shall be Mega-Lug, One-Lok or approved equal for all sizes 300mm (12") in diameter or larger.
- Restraint design calculations may be required by the Manufacturer for Pipe over 300mm diameter.

10. Repair Clamps and Couplings

Stainless Steel repair clamps will be a minimum thickness of 20 gauge for sizes up to 200mm (8") 18 gauge for sizes over 300mm (12") Stainless steel will be fully passivated and gasket material shall be certified to NSF-61. All clamps will be a minimum of 300mm (12") long, nuts and or bolts shall be Teflon coated to prevent galling. Clamps will be Cambridge Brass model 425 or Smith Blair model 261.

All repair clamps and couplings shall be installed to manufacturer's recommendations for pipe prep and torque. All couplings shall be fusion bonded epoxy coated and supplied with 304 stainless steel bolts. Gaskets and Epoxy in contact with potable water will be certified to NSF-61. Approved bolted couplings shall be Smith-Blair Model 441, Robar Model 1506. Two bolt wide range couplings shall be Epoxy Coated with 304 Stainless Steel Bolts NSF-61 certified. Approved manufacturers Smith-Blair model 421 and Hymax model 2000.

11. Service Saddles

i) Ductile Iron, Cast Iron and Asbestos Cement Saddles for Ductile Iron, Cast Iron, and Asbestos Cement pipe shall have Ductile Iron epoxy body, galvanized steel straps and bolts. Saddles shall be manufactured by Smith Blair model 313, Robar 2506/2508, Mueller 521-529 or approved equal.

ii) PVC

Saddles for PVC pipe shall be full circumference wide band with stainless steel band, nuts, bolts and outlet. Band shall be type 304 Stainless Steel of minimum 18 gauge thickness. Saddles shall be manufactured by Smith Blair No. 375; Robar 2600 series; Cambridge Brass 8403 (double bolt)

12. Tracer Wire

Tracer wire shall be installed on all non-metallic watermain, hydrant laterals and water services except where such water service pipe is of copper material. The wire shall be installed in such a manner as to be able to properly trace all watermain, hydrant laterals and water services without loss or deterioration of signal or without the transmitted signal migrating off the tracer wire. Tracer wire is to be brought up the outside of the hydrant valves only and inserted in the upper section of the valve box.

Tracer wire shall be RWU90, 12 gauge copper clad steel wire single stand colour coded blue for water, insulated jacket will be 30 mil HDPE suitable for direct bury application and break load of 452 lbs.

All spliced or repaired wire connections to be made using SnakeBite Locking Connectors Part #LSC1230B, DRYCONN Waterproof Connectors or approved equivalent specifically designed for direct burial applications complete with water proof closure.

The Inspector may test the tracing wire for conductivity. If it is not continuous the Contractor shall, at its own expense, replace or repair the wire.

13. Tapping Valves and Sleeves

Tapping valves to be Mechanical Joint by Flange. Tapping valves shall conform to A.W.W.A. C509-87 and must open right (clockwise). All tapping sleeves shall be stainless steel complete with 20mm diameter NPT test plug. The Pressure test to never exceed the static pressure of the watermain.

Approved resilient seat tapping valves shall be McAvity No. 20675R, Mueller T20360, Clow R/W F-6114, AVK Series 65. Approved Tapping Sleeves to be Romac SST Series, Robar 6606 Series, Ford Fast-xxx-MM Style and Smith Blair 663, or alternative approved by the Contract Administrator.

An OPSS designed thrust block as per OPSD 1103.010 to be installed behind all tapping sleeves and valves.

14. Insulation for Watermains

Insulation for shallow watermains shall be Styrofoam SM(HI)-40 rigid board insulation installed at locations and thicknesses as shown on the drawings or to the limits as established by the Contract Administrator.

Installation

- The rigid board insulation shall be installed over 150mm of level, granular material.
- A minimum of 200mm of granular material shall be placed over the insulation before compaction equipment is used.
- Rigid boards shall butt tightly together without gaps. Ends shall be staggered if more than one layer is used.
- The insulation shall project a minimum of 1 pipe diameter beyond the outside edges of the pipe being protected
- The minimum width of rigid board shall not be less than 1200mm in width.

15. Petrolatum and Petroleum Coating Systems

Reference to petrolatum coating systems means an approved petrolatum and petroleum coating system that conforms to A.W.W.A. C217-90 standard and is approved for use by the Contract Administrator.

While each product must be applied according to the manufacturer's instructions, the application will generally be done in the following fashion:

The item to be coated shall be cleaned of all dirt, oil, grease, flakes of paint and metal and any other item that might prevent adhesion of the petrolatum system. If the item requires blast cleaning or heavy wire brushing to prepare it, it will be rejected.

After cleaning, a uniform and continuous coat having a film thickness of at least 3 mil (76 µm). Any rough or uneven surfaces shall be filled in or smoothed over by using the mastic supplied by the manufacturer.

The whole surface shall then be wrapped with the top coating at 55% overlap and a minimum thickness of 40 mil (1016 µm). Petrolatum and petroleum coating systems approved by the Contract Administrator are Denso Petrolatum Products as supplied through Denso of Canada Limited and Petro Petrolatum Coating Systems as supplied by Petrolatum Coating Systems Pty. Ltd. All watermain appurtenances including caps, valves, hydrants, restrainer clamps, nuts, bolts, tees, elbows, fittings, clamps, couplings, blow offs, and transition joints are required to be treated with full petrolatum Coating System complying with manufacturer instructions.

CONSTRUCTION

Excavation

All excavated material not required for backfill shall be disposed of as outlined under the General SP – Management of Excess Materials. The cost of this work shall be included in the bid per metre of watermain.

Removal of Existing Mains, Services, Hydrants and Fittings

For the unit prices bid for watermain construction, the Contractor shall include the removal of existing mains and services when required, and/or as determined by the Contract Administrator at the time of construction.

These mains shall become the property of the Contractor and shall be removed from the site of the work.

Any fittings deemed salvageable shall be delivered to the Operating Authority's workshop.

Remove and Salvage Existing Hydrants

For the unit price bid, the Contractor shall remove the existing hydrant as directed by the Contract Administrator and the hydrant shall be delivered to the Operating Authority's workshop in good order.

Bedding, Embedment and Backfill

Bedding shall be Class B as per OPSD 802.030, 802.031, 802.032, 802.033 or 802.034 for **rigid pipe** and whichever soil type is applicable.

Bedding and embedment shall be as per OPSD 802.010, 802.013, or 802.014 for **flexible pipe** for whichever soil type is applicable.

Bedding and embedment material shall be Granular "A". Cover material shall be approved granular material or select native granular material to 300 mm above the top of pipe. Bedding and cover shall be placed in uniform layers not exceeding 200 mm in thickness, loose measurement, and compacted to 95% of the maximum dry density before a subsequent layer is placed.

Backfill shall be as specified in the Form of Tender. If select native material is specified, it shall be compacted to a minimum dry density of 95%. If granular material is specified, it shall be compacted to a minimum dry density of 100%. Backfill shall be placed in uniform layers not exceeding 300 mm in thickness for the full width of the trench and compacted to the specified density before a subsequent layer is placed.

All excavated material not required for backfill shall be disposed as outlined under the General SP – Management of Excess Materials. The cost of this work shall be included in the unit price bid.

Should the Contractor decide to use stone bedding to assist with trench stabilization it shall be at the Contractor's expense. It is also to be noted that the use of stone may result in settlement of the installed piping; as such, the Contractor shall assume all risk in its use.

Compaction shall be as per OPSS.MUNI.501 – Construction Specification for Compacting. The type of compaction equipment used shall be suited to the material to be compacted, degree of compaction required, and space available. Selection of compaction equipment shall be determined by the Contractor with a list of the proposed equipment being submitted at the pre-construction meeting.

Backfill shall be placed to a minimum depth of 900 mm above the crown of the pipe before power operated rolling equipment shall be used for compacting.

BACKFLOW PREVENTION REQUIREMENTS FOR NEW WATERMAINS (MECP Watermain Disinfection Procedure Section 1.1)

The backflow prevention provisions within Section 4.8.9 of ANSI/AWWA Standard C651- Disinfecting Watermains shall be mandatory for the installation of new watermains except for connecting new watermains to the existing system. (MECP Watermain Disinfection Procedure Section 1.1.4)

Backflow Prevention for new watermains shall be accomplished by:

- an air gap as defined in CSA Standard B64.10 “Selection and Installation of Backflow Preventers”; or
- A CSA-certified reduced pressure principle (RP) backflow preventer that has been selected and field tested (within 1 day of installation) in accordance with CSA Standards B64.10 and B64.10.1. Contractors shall supply and install reduced pressure principle (RP) backflow preventer as per BMROSS Standard Drawing 1115 or BMROSS Standard Drawing 1116.

Exception: If a backflow preventer is relocated within the same day, testing is only required for the first installation of the day provided that the backflow preventer is relocated by a Certified Operator who will guard against damage during transit and re-installation.

For the purposes of CSA Standard B64.10, a backflow prevention tester's licence shall be an Ontario Water Works Association (OWWA) Certified Cross Connection Control Specialist Certificate or a Ministry-approved equivalent. In addition to the list of professionals in Table 1 of Figure E.1. of CSA Standard B64.10, a Certified Operator or a Water Quality Analyst with a backflow prevention tester's licence shall also be authorized to test, install, relocate, repair or replace backflow preventers used in the installation and commissioning of new watermains.

Connection to Existing Mains

For the unit price bid, the Contractor shall supply all labour, equipment and materials to reconnect the existing main to the new main with restrained couplers (hymax grip, or approved equivalent). The length of the reconnection shall not exceed one standard pipe length (i.e. 6 metres).

After the pressure, leakage, chlorine residual and bacteriological tests have passed, the Contractor shall obtain written approval from the Contract Administrator to make the final watermain connection to the existing water distribution system.

The Contractor shall contact the Operating Authority a minimum of 48 hours prior to any service or watermain connection the existing system to determine if any special measures must be taken and to schedule an appropriately licensed Operating Authority employee to oversee the connections. All connections to existing watermains, including service connections shall be completed between the hours of 7 a.m. to 4 p.m., Monday to Friday. The Contractor will be liable for all costs for the Operating Authority staff outside the approved connection timing window noted above and if the Contractor fails to notify the Operating Authority that the connection will not take place.

The Contractor shall co-ordinate the final connection of the new watermain to the existing water distribution system to enable the Contract Administrator to witness the entire process.

Watermains shall be cut back to remove all temporary taps. The Contractor shall disinfect the connection watermain as outlined below and shall, using all means possible, dewater the watermains and trench in a controlled manner to not allow backflow into any existing watermains.

The Contract Administrator at their discretion may require the Contractor to flush water through a nearby fire hydrant to remove water with elevated chlorine residual.

If trench water, dirt or debris has entered the watermain during the final connection, the watermain shall be aggressively flushed and additional bacteriological samples shall be taken as determined by the Contract Administrator or the Operating Authority. The Contract Administrator reserves the right to request the above steps be taken regardless.

The new piping, fittings and valves required for the connection shall be spray-disinfected and swabbed with a sodium hypochlorite solution of minimum 1% and maximum 5% chlorine just prior to being installed.

During the final connection, the Contractor shall connect new tracer wire to the existing tracer wire using manufactured, approved waterproof connectors specifically designed for underground tracer wire use, or CADWELD the tracer wire to the existing main to provide conductivity.

Connecting New Watermains to the Existing System (MECP Watermain Disinfection Procedure Section 1.1.4)

The provisions outlined in Section 4.10 of ANSI/AWWA Standard C651-Disinfecting Watermains are mandatory, along with the additional requirements prescribed below. The backflow prevention provisions within Section 4.8.9 of ANSI/AWWA Standard C651-Disinfecting Watermains are not mandatory for connections.

When microbiological samples are taken from connections, Operating Authorities shall ensure that additional samples are taken at the same time from the same location and are tested immediately for,

- (a) free chlorine residual, if the system provides chlorination and does not provide chloramination; or
- (b) combined chlorine residual, if the system provides chloramination.

Connections Equal to or Less than One Pipe Length (Generally ≤ 6 m) (MECP Watermain Disinfection Procedure Section 1.1.4.1)

The Contractor shall ensure that connections equal to or less than one pipe length (generally ≤ 6 m) are undertaken in accordance with Section 4.10.1 of ANSI/AWWA Standard C651-Disinfecting Watermains and that the connection remain isolated from the existing drinking water system, except while being flushed or sampled, until satisfactory results are received from one microbiological sample, taken by a Certified Operator or Water Quality Analyst, from water that has been directed through the connection.

Tapping of Watermains (MECP Watermain Disinfection Procedure Section 1.5)

Where existing watermains are tapped, the pipe surface at the location of the tap shall be cleaned and disinfected using a minimum 1% sodium hypochlorite solution. Where applicable, the drill/cutting/tapping bits and all surfaces of mainstops, service saddles, tapping sleeves and valves which will come into contact with Drinking Water shall likewise be cleaned and disinfected using a minimum 1% sodium hypochlorite solution immediately prior to installation. If any of the disinfected surfaces come into contact with the soil and/or water in the excavation prior to use, the cleaning and disinfection procedure shall be repeated.

The live tapping (i.e., “wet” tapping) of a watermain that is part of the Drinking Water System must be performed by a Certified Operator; however, a person or Contractor who is not a Certified Operator may perform wet taps provided they are being directly supervised by a Certified Operator. The Operating Authority shall maintain records of the name of the Certified Operator present for the wet taps.

Installation of Services (MECP Watermain Disinfection Procedure Section 1.6)

Service pipes of 100 mm diameter and greater shall be considered as watermains for the purposes of this procedure and shall be disinfected and tested in accordance with the

requirements of ANSI/AWWA Standard C651-Disinfecting Watermains as modified by this procedure. For service pipes of diameter less than 100 mm, Operating Authorities shall ensure that sanitary conditions are maintained during installation/repair, and that Flushing is conducted before they are placed into service.

For the unit price bid per each, the Contractor shall include the cost of tapping the main, installing saddles where applicable, corporation stops and curb stops c/w service box, including all connections to new and existing mains and services.

For the unit price bid per lineal metre, the Contractor shall include the cost of installing water service tubing by means of trenching and/or boring. All services shall be installed to a depth as noted on the Watermain Materials Specification.

For connections to existing service tubing, the excavation for the curb stop shall not be backfilled until the new service has been connected to the existing. The Contract Administrator may request the Contractor backfill certain services before the connection is made. Payment for re-excavating the service for the connection will be in accordance with the unit price bid for Provisional Work.

All servicing tubing shall be disinfected in the presence of the Contract Administrator before installation. The Contractor shall provide 48 hours' notice before making these connections.

At each service location, the Contractor shall provide service tubing extensions extending above the ground surface to accommodate flushing of the services following the disinfection operations. **All service tubing extensions shall be capped after the flushing and disinfection.** Service tubing extension shall not be used to reconnect water services. Service tubing extensions shall be removed, and new service tubing shall be used to make the connection.

At vacant lot locations, these extensions shall be cut off and crimped below ground as directed. The cost of providing for such extensions is to be included in the unit price bid for testing, flushing, swabbing and disinfection of watermains.

At vacant lots, the ends of all services shall be marked by a 38 mm x 89 mm wood post extending from the service to 300 mm above the surface of the ground and top section painted fluorescent blue. The post shall be supplied and placed by the Contractor.

The unit price bid shall include all restoration beyond the general grading limits. Restoration shall be as outlined under the General SP - Restoration.

Cathodic Protection

Polyvinyl Chloride (PVC) or Polyethylene (PE) Mainline Piping as per OPSD 1109.011.

<u>Appurtenance</u>	<u>Method of Protection</u>
Piping	Not required

Hydrants	One anode per each
Services Each non-metallic service	Not required
Valves	Sacrificial zinc nuts
Fittings	One anode per each and sacrificial zinc nuts
Mechanical Restraints	Sacrificial zinc nuts

- Anode sizes shall be 5.5 kg for watermain appurtenances up to and including 300 mm diameter and 11.0 kg for watermain appurtenances greater than 300 mm.
- Anodes for steel pipe encasement shall be 11.0 kg for all sizes.
- Sacrificial zinc nuts shall be of the Protecto-Cap type and installed on each bolt.

Cathodic Protection Installation

For all mechanical joint fittings and couplings used with either ductile iron or PVC pipe, a sacrificial zinc nut shall be installed on each bolt.

For buried anodes, connect anode copper lead wire to pipe, valve, fitting, hydrant, etc., with “double nut” type connection. Connect to main stops or curb stops with the electrical ground connections supplied. Place anode in trench a minimum of 500 mm from pipe, valve, fitting, etc. Complete installation shall conform to anode manufacturer’s recommendations.

Tracer Wire Installation

Tracer wire shall be installed along each main line, valve box or chamber. The tracer wire shall be laid along the top of the pipe, strapped every 5.0 metres. The tracer wire shall be looped at every valve, hydrant, and fitting. The tracer wire shall be secured within the valve boxes and chambers to 300 mm of final grade with a minimum 600 mm of loose wire.

All spliced or repaired wire connections, in the tracer wire system, shall be made with manufactured, approved waterproof connectors specifically designed for underground tracer wire use.

Ground rods are required on all dead-ends of tracer wires. Where system access is needed, the red ground rod wire is to be connected to the at grade access point. Where system access is not needed, the round rod wire can connect directly to the tracer wire with a manufactured, approved waterproof connector.

Refer to BMROSS Standard Drawing 1114 for the installation schematic.

Conductivity Test

Before the final connection to the existing main, the Contractor shall demonstrate the integrity of the new underground tracer wire by applying a conductivity signal and confirming the signal

correlation on all watermains and services. The Owner and the Contract Administrator must witness the conductivity test(s).

WATERMAIN DISINFECTION PROCEDURES FOR EMERGENCY REPAIRS

Categorization and Public Agency Notification of Watermain Breaks (MECP Watermain Disinfection Procedure Section 2.1)

All watermain breaks shall be classified as Category 2 as per Section 2.1.2 of the most recent Watermain Disinfection Procedure issued by the MECP, unless an Operator-In-Charge (OIC) conducts a visual inspection upon completion of the excavation to determine the nature of the watermain break and classifies it as a Category 1 as per Section 2.1.1 of the most recent Watermain Disinfection Procedure by the MECP.

The OIC shall assess the evidence of the contamination or suspected contamination of the watermain throughout the repair procedure and shall reclassify if required.

Watermain Break Disinfection Procedure Common to Categories 1 and 2 (MECP Watermain Disinfection Procedure Section 2.2)

The following steps must be performed for all emergency watermain repairs (Category 1 and Category 2).

Maintenance of Flow (MECP Watermain Disinfection Procedure Section 2.2.1)

The Operating Authority shall determine if flow can be maintained to the watermain break site until the watermain is excavated. This determination shall be based on risks to worker and public safety, the possibility of property damage, and/or adverse impact to the natural environment.

The Contractor will attempt to maintain flow from the watermain break, where possible, until an Air Gap is established. Flow may be reduced by throttling valves while maintaining sufficient flow from the watermain break to minimize the potential for Contamination. Flow may be discontinued after an air gap has been created.

If flow from the watermain break is not maintained before an air gap is established, the watermain break shall remain Category 2.

Excavation Dewatering (MECP Watermain Disinfection Procedure Section 2.2.2)

Excavation dewatering shall be continued for the duration of the repairs such that the air gap between the location of the watermain break and the water in the excavation is maintained. If the water level in the excavation rises such that the air gap is not maintained after flow from the watermain break has been discontinued, then the watermain break shall be classified as Category 2.

Disinfection of Pipe and Repair Parts (MECP Watermain Disinfection Procedure Section 2.2.3)

All surfaces of pipe and repair parts which will come into contact with drinking water shall be disinfected using a minimum 1% sodium hypochlorite solution immediately prior to installation. If any of the disinfected surfaces come into contact with the water and/or soil in the excavation prior to installation, the surfaces shall be cleaned and the disinfection procedure shall be repeated.

If cutting out a section of pipe, the interior surfaces of the cut ends of the existing watermain shall be disinfected using a minimum 1% sodium hypochlorite solution, swabbed or sprayed as far as can be practically reached.

Installation of Repair Parts (MECP Watermain Disinfection Procedure Section 2.2.4)

The repair parts shall be installed while ensuring that contaminants do not enter the watermain.

Post-Repair Flushing and Return to Normal Service (MECP Watermain Disinfection Procedure Section 2.2.5)

Flushing shall be conducted following repairs by creating a temporary dead end downstream of the watermain break through valve operation and flushing through the location of the repair to a discharge point. Flushed water may be discharged from a hydrant, plumbing or appurtenances. Where there is no discharge point to allow for flushing, the Operating Authority shall tap the watermain on the downstream side of the watermain break and discharge from that point.

Flushing shall continue until the discharged water is visibly free from discoloration and particulates, and an acceptable disinfectant concentration has been restored; whereupon the system can be returned to normal service, defined as having all valves returned to normal operating position.

Exception: Where the repair was performed using a repair sleeve and flow was maintained from the watermain break until an air gap was established, flushing is not required. Dechlorination is required for any water that is directly discharged into surface water or if the discharge into the natural environment is likely to cause an adverse effect, as per Condition 10.0 of Schedule B of the Municipal Drinking Water Licence. The discharged water is deemed to be a Class II spill for the purposes of O. Reg. 675/98 (Classification and Exemption of Spills and Reporting of Discharges) made under the Environmental Protection Act. Discharges of flushed water are also regulated under Condition 5.5 of Schedule C of the Municipal Drinking Water Licence.

Following a Category 1 watermain break, the Contractor shall assist the Operating Authority in collecting samples should the Operating Authority choose to perform microbiological sampling.

Additional Requirements for Category 2 Watermain Break Repairs (MECP Watermain Disinfection Procedure Section 2.4)

In addition to the requirements described in Section 2.2 of the MECP Watermain Disinfection Procedure, the following steps are required for Category 2 watermain break repairs.

Removal of Contaminants from Watermain (MECP Watermain Disinfection Procedure Section 2.4.1)

Appropriate additional steps shall be undertaken to remove contaminants from the watermain, such as:

- Physical removal of contaminants;
- Flushing into the excavation;
- Higher velocity flushing after repairs where practical and feasible.

Additional Disinfection Procedures (MECP Watermain Disinfection Procedure Section 2.4.2)

In addition to the steps in MECP watermain Disinfection Procedure Section 2.2.3, site-specific disinfection procedures may also be used depending on the severity or nature of the contamination. The steps may include the disinfection procedures for new watermains as per ANSI/AWWA Standard C651-Disinfecting Water Mains.

Microbiological Samples (Mandatory) (MECP Watermain Disinfection Procedure Section 2.4.3)

After the completion of flushing, at least one microbiological sample shall be taken and submitted as soon as reasonably possible, taking into consideration laboratory working hours and transportation timeframes.

The flow shall be directed to ensure that the sample represents water that has passed through the location of the repair. The sampling will typically occur at the point of flushing, and may take place from sampling ports, hydrants, blow-offs, or premise plumbing. All samples shall be considered drinking water samples, taken and tested in accordance with O. Reg. 170/03 requirements. The reporting and corrective actions of Schedule 16 and the applicable Schedule 17 or 18 of O. Reg. 170/03 shall apply.

The watermain may be returned to normal service, defined as having all valves returned to normal operating position, prior to receipt of microbiological sample results.

Special Case - Sewage Contamination (MECP Watermain Disinfection Procedure Section 2.4.4)

If there is evidence or suspected sewage contamination of a watermain, in addition to the steps in MECP Watermain Disinfection Procedure Sections 2.2 and 2.4, the Contractor shall develop and implement a plan with site-specific procedures for disinfection and sampling.

The sampling plan shall include as a minimum taking two sets of microbiological samples at least 24 hours apart.

Return to normal service is contingent upon the corrective actions and sampling plan being completed to the satisfaction of the local Ministry office (in consultation with local Medical Officer of Health). The affected watermain(s) may not be placed into service before the corrective actions and sampling plan are completed unless a water advisory is declared.

The disinfection requirements for new watermain(s) as per MECP Watermain Disinfection Procedure Section 1.1.2, may be used based on agreement between the Operating Authority and the local Ministry office, in consultation with the local Medical Officer of Health.

Special Case – Chemical Contamination (MECP Watermain Disinfection Procedure Section 2.4.5)

If there is evidence or suspected chemical Contamination of a watermain, in addition to the steps in MECP Watermain Disinfection Procedure Sections 2.2 and 2.4, the Contractor shall develop and implement a plan with site-specific procedures for disinfection and/or decontamination and sampling. The Contractor shall finalize the plan in agreement with the Operating Authority and the local Ministry office, in consultation with the local Medical Officer of Health.

Return to normal service is contingent upon the corrective actions and sampling plan being completed to the satisfaction of the local Ministry office, in consultation with the local Medical Officer of Health. The affected watermain(s) may not be put back in service before the corrective actions and sampling plan are completed unless a water advisory is declared.

MEASUREMENT FOR PAYMENT

Measurement of watermain shall be by length in metres along the horizontal centreline of the pipe from the point of connection to a chamber, water treatment plant, or existing watermain to a point vertically above the end of the new watermain.

In addition to the items listed under OPSS 441.09.01 Actual Measurement, the following applies:

- For measurement purposes, a count shall be made of all bends, tees, crosses, reducers, hydrant extensions, end caps, etc. regardless of the type and size

BASIS OF PAYMENT

The unit price bid for each item shall include all costs incurred in excavating for, placing, restraining, connecting and testing all watermain and fittings, as outlined in OPSS.MUNI 441, and restoration outside general grading operations.

The unit price bid per lineal metre shall include the cost of all granular bedding and backfill up to subgrade and/or original ground. All costs of compaction and water shall be borne by the Contractor.

Petroleum Tape System

Anti-corrosion wrap shall be as supplied by Denso North America Inc. or Premier Coatings Limited.

Denso coating material shall consist of Denso paste or Denso priming solution (for cold temperature application), Denso Profiling Mastic or Denso Blankets, and Denso LT Tape.

Premier coating material shall consist of Premapaste Primer or Primer Solution (for cold weather applications), Prematape Mastic and Prematape LT Tape.

All watermain appurtenances including caps, valves (bolts and bonnet only), hydrants, restrainer clamps, nuts, bolts, tees, elbows, fittings, clamps, couplings, blow offs, and transition joints are required to be treated with full petrolatum Coating System complying with manufacturer instructions.

TEMPORARY POTABLE WATER DISTRIBUTION

If the Contractor proposes to supply, install, maintain and remove a temporary water distribution system, or if a temporary system has been identified in the Schedule of Items and Prices, the Contractor shall follow the requirements of OPSS.MUNI.493-Construction Specification for Temporary Potable Water Supply Services and the following:

Submission Requirements

OPSS.MUNI 493.04.01 Submission Requirements has been amended with the following:

The following information shall be submitted to the Contract Administrator 14 Days prior to the commencement of any work requiring temporary potable water supply services:

Prior to installing the temporary water distribution system, a detailed plan of the system shall be provided by the Contractor and approved by the Contract Administrator. The plan shall detail the following:

- a) Pictorial representation of temporary potable water supply and services (1 - 1"xl7" minimum). Plan to identify the following:
 - a. Source water connection(s)
 - b. Cross-connection prevention procedures and equipment
 - c. Sampling locations
 - d. Temporary hydrant locations (if required)
- b) Written description of how source water connections are to be made
- c) Written description of proposed temporary water services connections to all water users
- d) Written description of proposed impacts to fire hydrants within Work Zone
- e) Written description of proposed material, including mainline and service sizes
- f) Written description of proposed swabbing details, including swab velocities

- g) Written description of hydrostatic pressure test details, including calculations of allowable leakage
- h) Written description of disinfection details, including calculations of required chlorine
- i) Written description of dechlorination details
- j) Written description of flushing water disposal details.
- k) Written description of watermain break disinfection procedure
- l) Written description of proposed emergency procedures
- m) Proof of Ontario Water Works Association (OWWA) Certified Cross Connection Control Specialist Certificate or a Ministry-approved equivalent
- n) Draft copy of Notice of Water Service Disruptions
- o) Written description of proposed details of how records will be maintained concerning the operation of curb stops
- p) and other related information about the temporary water system

The Contractor shall demonstrate that the level of service to the water users will not be impacted and that the temporary system will supply water demands at pressures normal to the existing system.

MATERIALS

493.05.1 General

In addition to the requirements of OPSS.MUNI 493.05.01, the following shall apply:

All chemicals and materials used in the alteration or operation of the drinking water system that come into contact with water within the system shall meet all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60, NSF/61 and NSF/372.

- Watermain material shall comply with AWWA C900 for PVC pressure pipe sizes between 100 mm dia. and 300 mm dia. or AWWA C901 for PE pressure pipe sizes between 50 mm and 76 mm.
- All temporary watermains and services shall be clearly marked as being in compliance with NSF/ANSI Standard 61

493.05.04

Temporary hydrants are not a requirement of this contract.

CONSTRUCTION

493.07.1 General

In addition to the requirements of OPSS.MUNI 493.07.01, the following shall apply:

Connection to the water service of a residential unit shall be by connecting the temporary water service to the private side of the existing water service. Should there be too many obstructions or result in excessive impacts when connecting to the existing service, the Contractor shall consider connecting to an outside hose bib with a wye connection or other suitable connection point.

Connection to commercial, industrial, or other buildings shall be determined on-site.

An adequate water supply shall be available at all times. If the temporary potable water supply fails, it shall be restored within 24 hours. A supply of potable water shall be made available by the Contractor to the customer in the interim.

The service connection piping shall be installed at the same time as the main line in order that disinfection is accomplished on the service piping. Connection shall not be made to the water user until the chlorine residual and bacteriological testing requirements have been satisfied (OPSS.MUNI 493.07.07 and 493.07.08).

A check valve shall be installed on the service connection between the mainline and the connection to the water user.

Contractors shall maintain records as to which curb stops are open, which curb stops are closed, and who operated the curb stops. These records shall be made available if requested by the Contract Administrator. If a curb stop is in the off position, the Contractor shall contact the Operating Authority to determine if a temporary connection is to be made at this location.

In the event that connecting to the existing service at the property line is not possible, it is the responsibility of the Contractor to determine how to provide temporary water service to the satisfaction of the Operating Authority, the Contract Administrator and property owner. Any excavation on private property or internal plumbing modifications must only be done after written approval is obtained from the property owner and applicable plumbing permits obtained. A copy of any written approvals must be provided to the Contract Administrator.

The property owner is under no obligation to allow the temporary water system to be connected to their internal system at any location other than on the private side of the curb stop.

After testing and connecting to the existing water service, the contractor shall provide safety fencing around the excavation. Backfilling of the excavation will be required if an open excavation impedes access to the property or impedes pedestrian traffic. Payment for re-excavating the service connection will be paid under the Provisional Item for the Backfilling and Re-Excavation of the Service Connection to Maintain Access to the Property.

493.07.2 Temporary Watermains

The minimum temporary watermain diameter shall be 50 mm.

Isolation valves are required at the source water connection, branches (2 on 3 way, 3 on 4 way) and at every service.

In addition to the requirements of 493.07.02, the connection of the temporary water system to the existing distribution system must be done in a secure location and be vandal and tamper resistant. A cross-connection control device is required to separate the two systems as long as the temporary system is in service. The cross-connection control device shall be a CSA certified reduced pressure principle (RP) backflow preventer that has been selected and field tested in accordance with CSA Standards B64.10 and B64.10.1 and disinfected prior to installation. Temporary connections to the existing distribution system shall be as per BMROSS Standard Drawing 1115 or approved equivalent.

Exception: If a backflow preventer is relocated within the same day, testing is only required for the first installation of the day provided that the backflow preventer is relocated by a Certified Operator who will guard against damage during transit and re-installation.

For the purposes of CSA Standard B64.10, a backflow prevention tester's licence shall be an Ontario Water Works Association (OWWA) Certified Cross Connection Control Specialist Certificate or a Ministry-approved equivalent. In addition to the list of professionals in Table 1 of Figure E.1. of CSA Standard B64.10, a Certified Operator or a Water Quality Analyst with a backflow prevention tester's licence shall also be authorized to test, install, relocate, repair or replace backflow preventers used in the installation and commissioning of new watermains.

Source water connections to fire hydrants are discouraged unless the Contractor can demonstrate that the hydrant has been disinfected and thoroughly flushed. The Owner assumes no responsibility for the quality of water obtained from a hydrant. After disinfection, the hydrant must be pressurized at all times that it serves as a source of potable water.

493.07.3 Temporary Potable Water Supply Service

The minimum temporary potable water supply service shall be 19 mm for individual service connections.

493.07.4 Temporary Hydrants

If Temporary Hydrants are specified under 493.05.04, then the Contractor shall include a maintenance program in with the Temporary Watermain Submission Plan.

493.07.6 Protection

In addition to the requirements of OPSS 493.07.06 Protection, the following shall apply:

The temporary distribution piping shall be installed behind the sidewalk or at the property line and service piping shall be installed along the edge of existing driveways to avoid grass-cutting conflicts.

All above ground piping shall be installed with appropriate ramping or burial such that the piping will:

- not to be endangered by equipment or vehicular traffic
- not pose a hazard for pedestrians (tripping, etc.)
- provide a barrier-free access
- be constructed to safeguard against vandalism and tampering.

493.07.7 Leakage Testing

All above ground piping must be regularly inspected to ensure leak tight connections at the beginning and during the period that the temporary water distribution is in use.

Leakage testing shall be performed as per the **Swabbing, Hydrostatic Pressure Testing, Disinfection and Flushing of Watermains** special provision.

Operation

The temporary water distribution system must be continually pressurized after the bacteriological testing is completed and be capable of supplying normal water demands throughout its installation.

All service connections shall be disinfected in the presence of the Contract Administrator before connecting.

493.07.8 Chlorine Residual and Bacteriological Testing

After the temporary water system is installed (mainlines and services) in its final location but before service piping is connected to the water users, the temporary water distribution system must be disinfected to satisfy the chlorine residual and bacteriological testing standards specified under the **Swabbing, Hydrostatic Pressure Testing, Disinfection and Flushing of Watermains Special Provision**. Samples must be collected at the end of each branch (individual services less than 100 mm in dia. are exempt unless determined otherwise by the Contract Administrator) and at maximum 350 m intervals.

If a water sample is shown adverse in accordance with O.Reg. 170/03, Drinking Water Systems after the temporary water distribution system is in service, the Contract Administrator will notify the Contractor as soon as possible. The severity of the problem will be assessed, and corrective action determined by the Contract Administrator. If the temporary water system must be disconnected, the Contractor must supply bottled water or an alternate water supply to the interrupted water users. Before the temporary water system can be placed back into operation, it must satisfy the chlorine residual and bacteriological testing standards and protocols used to initially commission the temporary system.

Off-Hours Corrective Action

In the event that corrective action is needed to the temporary water distribution system outside of normal working hours, the Contract Administrator and/or the Owner will attempt to contact the

Contractor to take corrective actions. If, in the sole opinion of the Owner, the Contractor is unable to make the corrections in a timely manner, the Owner may direct their own forces to take corrective steps. The Contractor will be liable for any costs incurred by the Owner.

Location

Phase 2

The Contractor shall arrange with the Town for connection to the existing hydrant located at the south boulevard between #488 and #486 Thames Street c/w backflow preventer to supply a 50mm temporary water system to all residences within the project area at Thames Street. See map in Appendix A.

Phase 3

The Contractor shall arrange with the Town for connection to the existing hydrant located at the south-east boulevard of the Toronto Street/Niagara Street intersection near #617 Toronto St c/w backflow preventer to supply a 50mm temporary water system to all residences located on within the project area at Niagara Street. See map in Appendix A.

Relocation of Temporary System

The relocation of the temporary water system either in whole or parts by any means without conducting and passing the chlorine residual and bacteriological requirements shall not be permitted. Relocation here is defined as depressurizing and moving the pipework in order to service other water users.

493.07.9 Removal of Temporary Potable Water Supply Services

In addition to the requirements of OPSS.MUNI 493.07.09 regarding the mid-April to mid-October window for implementing a temporary potable water supply service and a removal date of mid-November for the temporary water supply, the Contractor shall be prepared to protect the water supply from freezing, at his cost, should the temperatures drop below freezing while the temporary system is in use.

Basis of Payment for Temporary Watermain

If a separate item is provided for in the Tender Form, payment shall be as follows:

- (a) 5% for an acceptable Temporary Watermain Plan
- (b) 55% for initial installation, flushing, disinfecting, testing and connections
- (c) 30% for maintenance to be paid in proportion to the permanent work completed
- (d) 10% for removal

ITEM NO. 34**SWABBING, HYDROSTATIC PRESSURE TESTING, DISINFECTION AND FLUSHING OF WATERMAINS AND HYDRANT FLOW TEST**

For the lump sum bid, the Contractor shall supply all labour, equipment and materials for the temporary connection, testing, flushing, swabbing and disinfection of **watermains, services and appurtenances** in accordance with the following specifications, OPSS.MUNI.441 Watermain Installation in Open Cut, for hydrostatic pressure testing, ANSI/AWWA C651-Disinfecting Watermains for disinfection, the most recent version of the Ministry of the Environment, Conservation and Parks document “Watermain Disinfection Procedure”, ANSI/AWWA C655-Field Dechlorination and the following special provision for all other disinfection and flushing procedures. When there is duplication of procedures or requirements, the MECP document “Watermain Disinfection Procedure shall govern.

General

The new watermain shall be isolated from the existing waterworks system using a physical separation until satisfactory bacteriological testing has been completed and accepted by the Contract Administrator and the Operating Authority. Water required to fill the new main for hydrostatic pressure testing, disinfection, and flushing shall be supplied through a temporary connection between the existing water system and the new main. The temporary connection shall include a CSA certified reduced pressure principle backflow preventer that has been field tested in accordance with CSA Standards B64.10 and B64.10.1 and disinfected prior to installation. The backflow preventer shall be disconnected (physically separated) from the new main during the hydrostatic pressure test. It will be necessary to re-establish the temporary connection after completion of the hydrostatic pressure test to swab, chlorinate and flush out the disinfectant water prior to final connection of the new main to the waterworks system.

Service pipes of 100 mm diameter and greater shall be considered as watermains for the purposes of this procedure and shall be disinfected and tested in accordance with the requirements of ANSI/AWWA Standard C651-Disinfecting Water Mains as amended by the most recent version of the Ministry of the Environment, Conservation and Parks document “Watermain Disinfection Procedure”. For service pipes of diameter less than 100 mm, Operating Authorities shall ensure that sanitary conditions are maintained during installation/repair, and that flushing is conducted before they are placed into service.

At each service location, the Contractor shall provide service tubing extensions to above the ground surface to accommodate flushing of the services following the disinfection operations. **All service tubing extensions shall be capped after the flushing and disinfection.** Service tubing extension shall not be used to reconnect water services. Service tubing extensions shall be removed, and new service tubing shall be used to make the connection.

At vacant lot locations, these extensions shall be cut off and crimped below ground as directed. The cost of providing for such extensions and capping after the testing is to be included in the unit price bid.

MATERIALS

All chemicals and materials that come into contact with the water within the system when used in the alteration, operation, disinfecting and testing of the drinking water system shall conform to the following American Water Works Association (AWWA) and the American National Standards Institute (ANSI) safety criteria standards:

- AWWA B300 for Hypochlorites
- AWWA B301 for Liquid Chlorine
- NSF/ANSI 60, Drinking Water Treatment Chemicals – Health Effects
- NSF/ANSI 61, Drinking Water System Components – Health Effects
- NSF/372, Drinking Water System Components – Lead Content

CONSTRUCTION

The sequence of events for this item shall be 1) Swabbing, 2) Hydrostatic Pressure Testing, 3) Disinfection of new watermains, 4) Flushing and Dechlorination, 5) Microbiological Samples for New Watermains

1. Swabbing

For preliminary flushing prior to disinfection referred to in Sections 4.4.2 and 4.5.2 of ANSI/AWWA Standard C651-Disinfecting Watermains, if the requirements of ANSI/AWWA Standard C651 for a velocity of 3.0 ft/sec (0.91 m/sec) are not practical, alternative cleaning consisting of swabbing or flushing 2-3 pipe volumes can be used at the discretion of the Operating Authority.

Swabbing will be required prior to pressure testing, disinfection and commissioning of the main. A minimum of two (2) new swabs shall be passed through each section of main line pipe, hydrant lead and all services 100 mm dia and larger, to ensure that there is no blockage, debris, etc. The Contractor shall note that auxiliary equipment may be required for the swabbing operation.

Swabs shall be polyurethane with a density of 24.7 kg/m³ and shall have a minimum diameter 50 mm larger than the diameter of the watermain and have a minimum length of one and one half times its diameter.

Swabs shall be propelled through the watermain at a speed of 3.0 ft/sec (0.91 m/sec) using potable water. The Contractor shall discharge water to an approved outlet ensuring all required erosion and sediment control and dechlorination measures are followed.

The swabbing shall be repeated until the discharge water runs clear within ten seconds of the last swab exiting the discharge point or until the Operating Authority is satisfied with the clarity of the water.

The Contractor shall mark, number and demonstrate to the Contract Administrator that all swabs, or parts thereof, have been retrieved. The Contractor shall be liable for costs associated with damage caused by and retrieving swabs that, for whatever reasons, escape into the existing water distribution system.

All swab launch or swab retrieval locations shall extend above the finished grade elevation and be capped when not in use to prevent debris and contaminants from entering the system.

2. Hydrostatic Pressure Testing

The pressure testing shall be in accordance with OPSS 441.07.24 Hydrostatic Testing and under the supervision of the Contract Administrator.

All hydrant leads, **services**, stubs, blow-offs etc. shall be subject to the hydrostatic pressure testing. Hydrant valves shall be in the open position to subject the hydrant to the test as well.

3. Disinfection of New Watermains

Where a newly constructed watermain is disinfected using the tablet, continuous feed, slug, or spray chlorination method (not limited to large transmission mains) as per the procedures in ANSI/AWWA Standard C651-Disinfecting Watermains, the minimum contact times, initial chlorine concentrations, and maximum allowable decreases in chlorine concentration as listed in Table 1 below, shall be used. The disinfection method used is at the discretion of the Contractor.

When using the Tablet or Continuous Feed Disinfection Method, if the maximum allowable decrease in chlorine concentrations is exceeded at any of the sampling points, the disinfection procedure must be repeated.

When using the Slug Disinfection Method, the chlorine concentration shall be measured in the slug at the beginning of the disinfection process, as the slug moves through the watermain, and at the point of discharge. If the chlorine concentration decreases by more than 25 mg/L at any of the sampling points, the flow shall be stopped and additional chlorine shall be added to restore the chlorine concentration in the slug to not less than its original concentration.

Service Pipes of 100 mm diameter and greater shall be considered as watermains for the purposes of this procedure and shall be disinfected and tested in accordance with the requirements of ANSI/AWWA Standard C651-Disinfecting Water Mains as modified by the most recent version of the Ministry of the Environment, Conservation and Parks document "Watermain Disinfection Procedure". For service pipes of diameter less than 100 mm, Operating Authorities shall ensure that sanitary conditions are maintained during installation/repair, and that flushing is conducted before they are placed into service.

The method of disinfecting the main shall be identified on the Testing Submission plan submitted to the Contract Administrator.

Table 1: Chlorine Concentrations* and Contact Times for New Watermains			
Disinfection Method	Minimum Contact Time	Initial Chlorine Concentration	Maximum Allowable Decrease in Chlorine Concentration
Tablet or Continuous Feed	24 hours	$\geq 25\text{mg/L}$	40% of the Initial Chlorine Concentration to a Maximum of 50 mg/L**
Slug	3 hours	$\geq 100\text{mg/L}$	25 mg/L
Spray	30 minutes	$\geq 200\text{mg/L}$	Measurement Not Required

* At concentrations over 10 mg/L, measurements of total chlorine and free chlorine shall be deemed equivalent.

** Exception: Where copper pipe is used as a watermain, disinfection shall be performed using the continuous feed method, with an initial concentration of $\geq 50\text{mg/L}$ and a minimum 24-hour contact time. Due to the chlorine demand exerted by the copper, the maximum allowable decrease requirement in Table 1 does not apply, and the effectiveness of the disinfection process shall be demonstrated by the Microbiological Sampling referred to in Construction Sequence No. 5 below.

4. Flushing and Dechlorination

Following disinfection of the watermains and watermain branches, the heavily chlorinated water shall be flushed and managed as per the most recent version of the MECP document "Watermain Testing Procedure, - ANSI/AWWA C655 – Field Dechlorination and the following special provision to dechlorinate prior to discharge into the natural environment.

Flushing shall continue until the disinfectant concentration at the point of flushing reaches at least 0.2mg/L free chlorine in a chlorinated system or 1.0mg/L combined chlorine in a chloraminated system. If these disinfectant concentrations cannot be achieved, flushing shall continue until the disinfectant concentration at the point of flushing is representative of the system residual in the break/connection area, determined by sampling upstream of the break/connection area and downstream at the flushing location, or by using documented benchmarks for the area, as long as free chlorine concentrations are at least 0.05 mg/L in a chlorinated system and combined chlorine concentrations are at least 0.25 mg/L in a chloraminated system.

Dechlorination is required for any water that is directly discharged into surface water or if the discharge into the natural environment is likely to cause an adverse effect, as per Condition 10.0 of Schedule B of the Municipal Drinking Water Licence. The discharged water is deemed to be a Class II spill for the purposes of O. Reg. 675/98 (Classification and Exemption of Spills and Reporting of Discharges) made under the Environmental Protection Act. Discharges of flushed water are also regulated under Condition 5.5 of Schedule C of the Municipal Drinking Water Licence.

In all cases, the wasted water must be neutralized to provide a total chlorine residual of less than 2 µg/L (0.002 ppm) (O.Reg. 170/03 - Drinking Water Systems) at the outfall where detrimental effects may be suffered by plants and/or animals in the natural environment. The Contract Administrator will monitor the discharge of wastewater. Should tests show a residual greater than 2 µg/L, the discharge shall be ceased immediately, and the procedure modified to meet the less than 2 µg/L objective.

Sites within 100 m of natural drainage, or with direct discharge to a water body, should be considered high risk. In such instances, the Owner may request an enhanced dechlorination plan along with contingency and mitigation plans in the event that the chlorine residuals exceed those specified.

The Contract Administrator will monitor the discharge of wastewater to ensure the chlorine residual and discharge limits are not exceeded.

5. Microbiological Samples for New Watermains

Only certified municipal staff or trained designate (OWRA Reg. 170/03) shall collect samples for bacteriological testing.

After disinfection, in accordance with AWWA C651-Disinfecting Watermains, two consecutive sets of water samples, taken at least 24 hours apart, shall be collected from every 350 metres of watermain or part thereof, from the ends of the main line and from each branch line off the main line (100 mm dia. or greater). One 200 mL bacteriological sample (bottles supplied by the Labs ONLY) must be obtained from each location. If requested by the Operating Authority, the Contractor shall assist with the sampling of the existing water system at a location(s) near the construction.

The Operating Authority shall ensure that the microbiological samples taken in accordance with ANSI/AWWA Standard C651-Disinfecting Watermains include as a minimum Escherichia coli, Total Coliforms and Heterotrophic Plate Count (HPC) are tested by a licensed and accredited laboratory. When microbiological samples are taken from new watermains that have not been placed into service, Operating Authorities shall ensure that additional samples are taken at the same time from the same location and are tested immediately for:

- (a) free chlorine residual, if the system provides chlorination and does not provide chloramination; or
- (b) combined chlorine residual, if the system provides chloramination.

For new watermains with limited sampling points available, an alternative method of collecting Microbiological Samples is staged sampling. Staged Sampling shall be performed as follows:

- A flow meter shall be installed to measure flow through the new watermain
- A sampling point shall be installed at the end of the new watermain (additional sampling points may also be installed along the length of the watermain); and
- Flow shall be established and samples shall be collected from the sampling point(s) at intervals that are calculated to represent the lengths of the watermain as required by ANSI/AWWA C651-Disinfecting Water Mains, based on the pipe size and measured flow rate.

The Owner will pay laboratory expenses for microbiological testing of the initial first 2 sets of water samples required for commissioning the new mains. If the disinfection fails to produce satisfactory sample test results, disinfection, sampling and testing shall be repeated at the Contractor's expense.

The minimum requirements for acceptability of bacteriological tests are:

Escherichia coli	Not detectable
Total Coliform	Not detectable
Heterotrophic Plate Count (HPC)	< 500 CFU/ml (AWWA C651 -14)

The Contractor shall endeavour to maintain an acceptable disinfectant concentration until the new watermain is placed into service. If a concentration of 0.05 mg/L of free chlorine residual in a chlorinated system (or 0.25 mg/L of combined chlorine residual in a chloraminated system) is not maintained prior to placing into service, the microbiological sampling shall be repeated.

Commissioning of New Main and Services

Once a complete set of bacteriological samples produce satisfactory test results, the Contractor must request approval from the Operating Authority for the new watermain to be connected to the existing water system. The Operating Authority and/or the Contract Administrator must be present on site during the removal of the temporary connection and until the connection of the new main to the existing waterworks has been completed.

Hydrant Flow Test

Flow testing shall be required on all new fire hydrants installed. Flow tests will be completed by the Contractor and results submitted to the Engineering Department. All costs associated with flow test to be borne by the Contractor. Colour Code the bonnets of hydrant(s) to designated level of service being provided by that hydrant. The flow test is to be performed by a qualified person who holds a MECP drinking water license and according to NFPA 291 standards. NFPA 291 color coding is to be based on the theoretical flow at 20psi residual pressure. The Town is to be notified 48 hours in advance and to be on site during the flow test. The Contractor is responsible to pump out all hydrants that have been flow tested.

Blue	1500 us gpm or greater
Green	1000 to 1499 us gpm
Orange	500 to 999 us gpm
Red	Less than 500 us gpm

ITEM NO. 35

RIGID BOARD INSULATION

For the unit price bid, the Contractor shall supply and place 50mm minimum thick rigid board insulation above the sanitary sewer, services and/or watermain at locations shown on the drawing or to the limits as established by the Contract Administrator.

Material

The rigid board insulation shall be styrofoam SM or approved equivalent.

Installation

- The rigid board insulation shall be installed over 150 mm of level, granular material.
- A minimum of 200 mm of granular material shall be placed over the insulation before compaction equipment is used.
- Rigid boards shall butt tightly together without gaps. Ends shall be staggered if more than one layer is used.
- The insulation shall project a minimum of 1 pipe diameter beyond the outside edges of the pipe being protected
- The minimum width of rigid board shall not be less than 1200 mm in width.

ITEM NO. 36

PRESSURE GROUT EXISTING SEWER OR WATERMAIN

For the unit price bid, the Contractor shall supply all labour, equipment and materials for the injection of grout to completely fill the existing sewers or watermain that cannot be removed. Any grout spilled shall be cleaned up by the Contractor immediately.

Measurement for payment shall be made on the theoretical calculated volume of grout required to fill the pipe. No payment will be made based on truck ticket quantity.

ITEM NO. 37

TRAFFIC CONTROL AND PEDESTRIAN SAFETY

For the lump sum price bid, the Contractor shall include the cost of traffic control, pedestrian safety considerations and cyclist safety considerations as specified below and in accordance with OPSS.MUNI 706 Construction Specification For Temporary Traffic Control Devices, OPSS. MUNI 100 General Conditions of Contract – GC 7.06 Maintaining Roads and Detours, and in accordance with the Ministry of Labour, through the Occupational Health and Safety Act (OHSA) and Regulations for Construction Projects, R.S.O. 1990 and R.R.O. 213/91 as amended by 631/94 and 145/00, and as amended from time to time thereafter.

In addition to the requirements for Contractors to control traffic and provide signage, in accordance with the Ontario Traffic Manual Book 7 - Temporary Conditions (latest edition) and OPSS.MUNI 706 - Construction Specification For Temporary Traffic Control Devices, the following conditions shall apply:

Submission Requirements

OPSS 706.04.01 Submission Requirements has been amended with the following:

A copy of the traffic control plan shall be submitted to the Contractor Administrator and Owner for review and comment a minimum of two weeks (2) weeks prior to the Construction Start Date and no later than at the pre-construction meeting. The traffic control plan shall be in conformance with the Ontario Traffic Manual (OTM) Book 7 – Temporary Conditions (latest edition) and shall also include the following:

- Name, position in the company and cell phone number, and qualifications of the designated person who will be responsible for traffic control and work zone safety (GC 7.01.05.02). Qualifications to include the successful completion of the Book 7 (Non Freeway on-line Training) as provided by the Ontario Traffic Council <https://otc.org/training/book-7-training/> or Traffic Control Temporary Work Zones as provided by Infrastructure Health and Safety Association (IHSA) <https://www.ihsa.ca/Training/Courses/Traffic-Control-Temporary-Work-Zones.aspx> or approved equivalent course.

For each phase of work

- Written description of proposed traffic control.
- Written description of proposed method of maintaining access to residential driveways.
- Written description of proposed method of maintaining industrial, commercial, institutional driveways
- Written description of the wording on the Road Closing Notice/Restriction Notice Sign (TC-64) or Road Closing Notice Sign (TC-65)
- Configurations for Temporary Conditions (OTM Book 7, 3.3)
- Duration of Work (OTM Book 7, 3.5)
- Written description of proposed method of Pedestrian Safety Considerations (OTM Book 7, 3.7.1)
- Written description of any Cyclist Safety Considerations (OTM Book 7, 3.7.2)
- Written description of any night-time provisions (OTM Book 7, 3.8.1)
- Written description of the Work Zone lighting. (OTM Book 7, 3.8.2)
- Written description of the proposed method of maintaining EMS access.
- Written description of the height and offset of temporary signs.
- Written description of any impacts to intersections.
- Method of communicating changes in detours, road closures to EMS
- A draft Notice detailing of access impacts to residents.
- Pictorial representation of each proposed Book 7 Typical Layout (8 ½” x 11” minimum)
- Pictorial representation of the Work Zone, complete with proposed sign layout (11”x17” minimum), including a legend.
- Written description of monitoring frequency of the signage
- Provide proper information to the Owner for posting detours and road closure information to Municipal511.ca

Construction

As per GC 7.01.03.0 The Contractor shall have the sole responsibility for the design, erection, operation, maintenance, and removal of temporary structures and other temporary facilities and

the design and execution of the construction methods required in their use. Advance Notice signs (TC-67) shall be installed at least two weeks prior to the start of construction.

Road Closed-Local Traffic Only

- At all times of construction, a minimum of one lane for traffic shall be open and maintained using appropriate traffic control measures and signage. The one lane does not need to be continuous through the entire Work Zone.
- The driving surface shall be maintained daily by the contractor and graded daily.
- The pedestrian walking/motorized scooter surface shall be maintained by the contractor. The surface shall be a minimum of 1.2m wide and be stable and free of depressions or mounds of material measuring more than 100mm on a 3m straight edge.
- Temporary ramping of curbs shall be provided for pedestrian and motorized scooters along the detour routes.
- At the end of each working day, two lane traffic, controlled by barricades, delineators, etc., shall be restored for as much of the Work Zone as possible. The two lanes do not need to be continuous through the entire Work Zone.
- Entrances to institutional, and commercial establishments shall be accessible at all times unless noted otherwise. Construction practices shall be amended to achieve this requirement.
- Entrances to residential properties shall remain accessible as much as possible.
- Notices concerning driveway restrictions shall be distributed by the Contractor a minimum of 24 hours in advance of the work.
- Impacts to traffic signals are to be identified.

Restrictions on Construction Operations

Construction operations adversely affecting public traffic and the loading or unloading of materials and construction equipment onto and from the travelled portion of the road shall not be carried out during the following periods:

- Local noise by-law restricted hours
- 5:00 p.m. Friday to 7:00 a.m. Monday, for normal weekends
- All Canadian statutory holidays.

The contract specified requirements of OPSS.MUNI 706 - Construction Specification For Temporary Traffic Control Devices are as follows:

706.05.04.01 Modems for Portable Variable Message Signs are not required

706.07.01.03 Contract Information signs, TC-81 are not a requirement of this contract.

706.07.02 Road Closing/Restriction Notice Sign, TC-64 must be installed two (2) weeks prior to closing the road. The TC-64 shall be placed at least 1 km in advance of the best alternate route.

706.07.03 Automated Flagger Assistance Devices are not a pay item for this contract.

706.07.04 Portable Variable Message Signs are not a pay item for this contract.

Basis of Payment for Traffic Control and Pedestrian Safety

Payment for this item shall be as follows:

- (a) 60% for the submission of an OTM Book 7 compliant Traffic Control Plan and initial installation.
- (b) 30% for maintenance and continual implementation of the Traffic Control Plan including, but not limited to, removal/replacement of signage, flag persons, barricades, fencing, inspection, documentation etc. This portion of the lump sum bid shall be paid in proportion to the permanent work completed.
- (c) 10% for removal of signs, barricades, fencing etc.

ITEM NO. 38

CONSTRUCTION LAYOUT

SCOPE

The lump sum bid shall include all labour, equipment, and materials to provide construction alignment markers (grade stakes) along the length of the project in accordance with the following Special Provision, Contract Drawings, and applicable Ontario Provincial Standard Specifications General Conditions.

Upon submission of the BMROSS *Terms and Conditions For Use of Digital Electronic Files*, drawing files will be supplied to the Contractor by the Contract Administrator in AutoCAD 2018 Drawing (*.dwg) file format.

References

Specifications

OPSS.MUNI 100 General Conditions of Contract

Construction

GC 7.01.08 Errors and Inconsistencies Relating to the Contract

.01 Where the Contractor finds any error, inconsistency, or omission relating to the Contract, the Contractor shall promptly report it to the Contract Administrator and shall not proceed with the activity affected until receiving direction from the Contract Administrator.

GC 7.02 has been amended to with the following additions

.07 The Contractor shall provide qualified personnel to lay out and establish all lines and grades necessary for construction and for the site reviewer to reference while performing site review tasks. The Contractor shall notify the Contract Administrator of any layout work carried out, so that the same may be checked by the Contract Administrator.

Contractor layout shall include, but limited to:

- Offset stakes for road centreline alignment
- Offset stakes for storm sewer structures and sanitary sewer structures
- Final curb grade and alignment

GC 7.02.08 has been amended with the addition of the following to clarify what is required for “substantial alignment markers”.

.08 The Contractor shall install and maintain substantial alignment markers and secondary benchmarks as may be required for the proper execution of the Work and for use by the Contract Administrator for confirmation purposes. The Contractor shall supply one copy of all alignment and grade sheets to the Contract Administrator.

Substantial alignment markers shall be defined as 2x2 wooden survey stakes placed at 20m intervals along at least one side of the project for the entire limit of the project. Information on each alignment marker (grade stake) shall include the Station as well as the cut or fill amount.

For the construction of the storm sewers or sanitary sewers, additional alignment markers shall be provided for each structure. These alignment markers shall also include the offset length from the alignment marker to the centre of the structure. The Contractor shall advise the site reviewer if the offset dimension is to the centre of the structure or to an outside edge of the structure.

The Contractor shall also provide layout for the curb and gutter. Grade sheets for curb and gutter shall be provided to the Contract Administrator for review and confirmation prior to setting stringline for placing curb and gutter. Sufficient time shall be allowed for the review of the proposed grade sheets and stringline alignment.

Should the alignment markers be damaged or knocked over, the Contractor shall replace the damaged marker when requested to do so.

Measurement for Payment

Measurement will be made for layout, proportional to the length of the project.

Payment for this item shall be as follows:

- (a) 80% of the Lump Sum amount for the initial installation. This portion of the lump sum bid shall be paid in proportion to the **length** of the project.
- (b) 20% of the Lump Sum amount for maintenance. This portion of the lump sum bid shall be paid in proportion to the **value** of the project completed.

Basis of Payment

Payment at the Contract price for this item shall be full compensation for all labour, equipment and materials required to install and maintain the alignment markers and secondary benchmarks.

ITEM NO. 39

TEMPORARILY REMOVE AND RE-INSTALL SIGNS

For the lump sum price bid, the contractor shall remove and relocate any signage which may require temporary removal through the duration of this project. All costs for this work shall be included in the tender price approved by the contract administrator for their removal or placement to temporary stands if required.

ITEM NO. 40

BONDING AND INSURANCE

For the lump sum price bid, the Contractor shall provide indemnification, insurance and bonding for the contract as specified in the OPSS.MUNI 100 General Conditions, the Supplemental General Conditions and as noted below. The bonds and insurance shall be supplied by the Contractor to the Contract Administrator upon the return of the signed Contracts.

For this contract the indemnification period shall expire at 6 years from the date of certification of Final Acceptance.

GC 6.02 – Indemnification

In addition to the Owner and the Contract Administrator, GC 6.02.01 shall be amended with the inclusion of the following to be indemnified and held harmless by the Contractor:

- None

GC 6.03 – Contractor's Insurance

As per GC 6.03.01.01, the requirement for the following additional insurance coverages are as follows:

- GC 6.03.04 – Aircraft and Watercraft Liability Insurance – Not applicable
- GC 6.03.05 – Property and Boiler Insurance – Not applicable
- GC 6.03.06 – Contractor's Equipment Insurance - Applicable

GC 6.03.02 – Commercial General Liability Insurance

In addition to the Owner and the Contract Administrator, GC 6.03.02.01 shall be amended with the inclusion of the following as additional insureds:

- None

GC 6.04 Bonding

As per GC 6.04.01, the Contractor shall provide the Owner with the following surety bonds in the amounts noted:

Labour and Material Bond

The Contractor shall furnish a Labour and Material Payment Bond using Form 31 of Ontario Regulation 303/18 of the Construction Act that extends or guarantees payment protections to Subcontractors and persons supplying labour and material to the Contract for the amount of one hundred percent (100%) of the tender.

Performance Bond

The Contractor shall furnish a Performance Bond using Form 32 of Ontario Regulation 303/18 of the Construction Act that is conditioned on the due performance of the terms of the Contract for the amount of one hundred percent (100%) of the tender.

Ontario Regulation 303/18 Forms 31 and 32 can be found at:

<http://ontariocourtforms.on.ca/en/construction-lien-act-forms/>

Payment under this item will be made with the first payment certificate.

ITEM NO. 41**PRE-CONSTRUCTION CONDITION SURVEY****(a) General**

The work to be done under this item includes furnishing all labour, equipment, materials and services to perform a pre-construction survey of adjacent structures. The Contractor's designee for work shall be an independent third party company with a minimum of five years experience in pre-condition surveys and loss control for heavy construction in urban areas. The designee shall provide proof of Professional Errors and Omissions insurance with a minimum of two million dollar limit from a recognized insurer and submit sufficient data to satisfy the Contract Administrator of their competence in this field and/or be prequalified with the Contract Administrator in the tendering stage, hereinafter referred to as the Loss Control Consultant (LCC).

(b) Description

The work includes preparation and retention of pre-construction surveys depicting existing interior and exterior conditions of buildings, utilities and underground structures and the like, within the area of influence of the worksite, as indicated.

Existing buildings, utilities, and other related structural improvements and properties located in the area of influence of the worksite are subject to possible damage as a result of heavy construction activities, including but not limited to dewatering, excavating and compaction.

To protect the Contractor, Municipality and the Contract Administrator from unwarranted claims by property owners for alleged construction damages when the condition predates the construction, and also to protect the Property Owner from the cost of repairs resulting from

construction damage, the LCC shall survey and identify conditions existing in and around the properties anticipated to be potentially affected by construction operations. Photographic equipment and materials shall be acceptable to the Contract Administrator and shall be capable of yielding high-quality, date stamped, sequential photographs from which detailed enlargements may be made; video equipment will be permitted only as an accessory to still photographs.

Information in written format shall be recorded so as to be easily interpreted, containing pertinent information, and shall contain specific references as to exact building areas and locations including as a minimum:

- Type of construction and date when built.
- Differential settlements; visible cracks in walls, floors and ceilings shall be identified and described.
- Any other apparent structural or cosmetic damage or defect.

The LCC shall use positive dimensions whenever practical to do so, instead of general terms (that is, "Sagging 1 to 2 centimetres" instead of "Sagging badly").

(c) Procedure

Work shall begin immediately upon execution of the Contract and pre-construction surveys of those applicable portions of this work shall be completed prior to the start of construction activities.

The LCC shall evaluate the Contract Administrator's recommendations of areas to be surveyed and submit to the Contract Administrator recommended deviations from those areas indicated, if any.

The LCC shall be responsible to obtain data as follows:

- Available data from design consultants including but not limited to soils data, field surveys, photogrammetric mapping, and pertinent project photographs.
- Plans for buildings to be surveyed and "as-built" drawings if available.
- List of owners, tenants and lessees to be surveyed within buildings.

Upon approval of the submittal, the LCC shall conduct surveys which shall adequately illustrate structural and cosmetic defects of the indicated areas.

After the LCC has contacted the owner of the buildings, it will be the responsibility of the LCC to gain entry to the buildings during the performance of their work. If an owner will not permit access to their property, the LCC shall indicate in the summary sheet what efforts were made to gain entry; what their apparent authority was (i.e. owner, manager, lessor); what reasons were given for not providing entry, time and date of contact; means of contact (in person or by phone); who made the contact and other relevant information.

Survey data shall be recorded and kept on file by the LCC in a secure manner, in compliance with Freedom of Information requirements. The documentation will only be made available to the Contractor, Owner and Contract Administrator in cases where a claimant has submitted a claim of loss in writing and will form part of a "Post Construction Report". If the report substantiates damage resulting from the Contractor's activities, the cost of the Post Construction Report shall be paid by the Contractor. If the report indicates that there was no construction related damage then the Municipality will pay the cost of the Post Construction Report.

A preconstruction survey report including the following information shall be submitted to the Contract Administrator; Dates of activities, properties inspected, properties where access was refused, sample letters of – request to inspect/reminder notice, condition survey technical procedures, how sensitive information will be stored/released, and any special notes of awareness to the Contractor, Contract Administrator & Municipality.

ITEM NO. 42

SANITARY SERVICE CONNECTION REPAIRS

For the unit price bid per each, the Contractor shall supply all labour, equipment and material required to remove and reconnect four (4) existing sanitary services at the sanitary sewer. These services have been identified via CCTV to have deficient tee connections to the sanitary sewer main. Municipal Addresses #490, #509, #510 and Empty Lot (between #494 & #490) all located in Niagara Street.

- Existing services are 150mm PVC
- Existing sanitary sewer is 200mm PVC

For the unit price bid, the Contractor shall remove the existing service tee and reconnect with a new service tee and any required service piping satisfactory to the Contract Administrator.

Service tees for use with flexible mainline sewer pipe shall be factory manufactured tees. The service connections shall be as per OPSD 1006.010 for sewer service connections for main pipe sewer.

Service pipe material shall be polyvinylchloride (PVC) SDR-28. (White colour).

The unit price bid shall also be full compensation for maintaining service while completing these connections.

ITEM NO. 43

REMOVAL AND DISPOSAL OF UNSUITABLE SUBGRADE (PROVISIONAL)

For the unit price bid, the Contractor shall supply all labour, equipment and materials to excavate any unsuitable subgrade material as directed by the geotechnical consultant during proofrolling including disposal off-site. Replacement with granular 'B' material shall be paid under Item No. 6 b).

ITEM NO. 44**ADDITIONAL COST TO PROVIDE 19 mm CLEAR STONE IN LIEU OF GRANULAR 'A' FOR BEDDING MATERIAL (PROVISIONAL)**

Where conditions warrant, and as established by the Contract Administrator, and for the unit price bid, the Contractor shall supply to the site, place, fine grade and compact 19 mm crushed stone bedding required in the sewer and/or watermain trench.

ITEM NO. 45**BACKFILLING OF NEW WATER SERVICES DURING TESTING AND DISINFECTING AND EXCAVATION TO CONNECT TO EXISTING SERVICES WHERE CONDITIONS WARRANT AND AS DIRECTED (PROVISIONAL)**

For the unit price bid, the Contractor shall backfill the new water services during testing and disinfecting where conditions warrant (i.e. drives, commercial areas, etc.) as established by the Contract Administrator at the time of construction. The unit price will also include the re-excavation and backfilling following the testing and disinfection to allow connection of the new service to the existing service.

All work shall be in accordance with the OPSS.MUNI 206 and OPSS.MUNI 401 for grading, excavation and backfilling.

This item shall not be used without prior authorization from the Contract Administrator.

ITEM NO. 46**REMOVE AND RELAY SANITARY SERVICES (PROVISIONAL)**

For the unit price bid per each, the Contractor shall supply all labour, equipment and material required to remove and relay existing sanitary services where it conflicts with the installation of the proposed storm sewer, to a minimum 1% fall to the extents needed to provide 150mm cover between the bottom of the proposed storm sewer and the top of the sanitary services.

For the unit price bid, the Contractor shall reconnect the services using approved couplings (Fernco or equivalent), adaptors, service piping and saddles required to complete the proper connection, satisfactory to the Contract Administrator.

Service pipe material shall be polyvinylchloride (PVC) SDR-28. (White colour).

Services shall be laid at a grade of not less than 1%.

The unit price bid shall also be full compensation for maintaining service while completing these connections.

ITEM NO. 47**EXPOSE UNKNOWN UNDERGROUND INFRASTRUCTURE BY HYDROVAC (PROVISIONAL)**

The unit price shall include all costs for the exploratory excavations of underground infrastructure by hydrovac including disposal of excavated materials. The Contractor must have authorization by the Contract Administrator before going forward with the hydrovac work.

ITEM NO. 48**OLS TO REPLACE PROPERTY BARS (PROVISIONAL)**

For the unit price, the Contractor shall hire an Ontario Land Surveyor (OLS) to replace property bars which were disturbed during construction. The Contractor shall take all reasonable measures to protect all existing property bars throughout construction.

Payment will only be made under this item for property bars which were disturbed during the installation of underground works, where the property bar could not be worked around, in the opinion of the Contract Administrator.

The Contractor shall be responsible for all costs to reinstate property bars by an OLS which were unnecessarily disturbed during construction due to the Contractor's carelessness.

ITEM NO. 49**MUNICIPAL ALLEY FENCES AND OTHER ITEMS THAT COULD BE TEMPORARILY RELOCATED OR REPLACED - ALLOWANCE (PROVISIONAL)**

The Contractor may be required to temporary remove and reinstall or replace existing wood/panel/chain link fences and other items in order to facilitate the installation or removal of infrastructure or to the new limits established by the contract Administrator at the time of construction. The amount of the Allowance shown in the Form of Tender shall be included in the Total Tender Price and will be paid on a time and material basis as required. The Contractor will not be entitled to payment unless the work is authorized, in writing by the Contract Administrator. All work shall be done in accordance with OPSS.MUNI.510.

ITEM NO. 50**DEFLECT 100mm PVC SANITARY FORCEMAIN**

According to records, the gap between the bottom of the new 750mm Barnes Drain concrete pipe (1m exterior pipe diameter) and top of 100mm PE forcemain pipe would be sufficient. If after exposing the forcemain it is encountered that it will be in conflict with the path of the Barnes Drain, then the 100mm PE forcemain will have to be deflected under the 750mm concrete pipe with a minimum clearance of 0.2m.

For the lump sum price bid, the Contractor shall supply all labour, equipment and material required to deflect the existing 100mm PE forcemain under the 750mm dia. new Barnes Drain concrete with a min. clearance of 0.2m.

Forcemain pipe material shall be PE DR17.

ITEM NO. 51
CONTINGENCY ALLOWANCE

A lump sum allowance has been made for contingencies in the contract. Only those additional items approved in writing on behalf of the Owner, by the Contract Administrator, will be expended from this allowance.

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

SUPPLEMENTAL GENERAL CONDITIONS

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GC 8.02.05.09	Submission of Invoices	11

GC SECTION	SUPPLEMENTAL CONDITION
GC 1.04 DEFINITION	GC 1.04.01, Definitions, shall be amended with the inclusion of the following definitions: Acceptable Disinfectant Concentration means: a) a disinfectant concentration of at least 0.2 mg/L free chlorine residual in a chlorinated system or 1.0 mg/L combined chlorine residual in a chloraminated system; or, if these disinfectant concentrations cannot be achieved, b) a disinfectant concentration that is representative of the residual in the area, determined by testing upstream and downstream from the testing location or by using documented benchmarks for the area, as long as free chlorine concentrations are at least 0.05 mg/L in a chlorinated system and combined chlorine concentrations are at least 0.25 mg/L in a chloraminated system. Air Gap means a space at the location of the maintenance/repair between the exterior surface of the watermain and the interior surfaces of the excavation, including the water in the excavation, sufficient to prevent water, soil or any other <i>Contaminant</i> in the excavation from contacting the watermain, fittings, or <i>Appurtenances</i> throughout the maintenance/repair process. Appurtenance means an appurtenance, within the meaning of O. Reg. 170/03, which is in contact with the <i>Drinking Water</i>. Backflow Prevention means the prevention of a reversal of normal flow that could introduce <i>Contamination</i> to the <i>Drinking Water System</i>. Certified Operator means certified operator within the meaning of O. Reg. 170/03. Completion means contract completion as set out in the Construction Act.: For the purposes of this Act, a contract shall be deemed to be completed and services or materials shall be deemed to be last supplied to the improvement when the price of completion, correction of a known defect or last supply is not more than the lesser of, (a) 1 per cent of the contract price; and (b) \$5,000. R.S.O. 1990, c. C.30, s. 2 (3); 2017, c. 24, s. 4 (5, 6) Connection means all watermain and appurtenances installed between an existing watermain and a new or future watermain/appurtenance. Construction Trade Newspaper, as per Ontario Regulation 304/18, as made under the Construction Act, means a newspaper, (a) that is published either in paper format with circulation generally throughout Ontario or in electronic format in Ontario,

- (b) that is published at least daily on all days other than Saturdays and holidays,
- (c) in which calls for tender on construction contracts are customarily published, and
- (d) that is primarily devoted to the publication of matters of concern to the construction industry.

Contaminant means foreign matter that is not intended to enter a watermain.

Contamination means the introduction of a contaminant into a watermain.

Detours as defined in the Ontario Traffic Manual Book 7, Section 2.3.6 Detours. A detour is when traffic is diverted from its normal path because it cannot be adequately accommodated within an existing roadway. Guidance of traffic through detours requires signage that is continuous and complete to guide drivers back to the normal route. Types of Detours are:

- (a) Roadway Diversion - Traffic in both directions is required to make a short diversion, within the highway right of way, to bypass the work area;
- (b) Lane Realignment - Traffic in one direction is diverted from its normal path onto an alternate alignment around a temporary work area; and
- (c) Route Detours - Traffic is required to completely depart from the normal route and directed to use alternate roads. A route detour is typically provided when the road capacity is reduced to the point to which some of the traffic must be redirected due to excessive delays, or the road is entirely closed at which point an alternate route must be provided. The alternate route will be signed by using a combination of appropriate TC-10 directional signs

Directly Supervised means directly supervised within the meaning of Section 5.1.1 of the Certification Guide for Operators and Water Quality Analysts of Drinking Water Systems, as amended, but it does not expressly refer to the definition of supervisor under the Occupational Health and Safety Act.

Drinking Water means drinking water within the meaning of the Safe Drinking Water Act.

Drinking Water Health Hazard means drinking water health hazard within the meaning of the Safe Drinking Water Act.

Drinking Water System means drinking water system within the meaning of the Safe Drinking Water Act.

Equivalent means that the material to be supplied shall have the same or better performance properties and shall have the same certifications as the material specified. It is the Contractor's responsibility to provide all documentation that supports the Contractor's claim that material is to be considered an equivalent. The burden of proof lies with the Contractor. It is also the Contractor's responsibility to make it known, prior to the pre-construction meeting, that an equivalent is being proposed of the Work . where the phrase "or equivalent" is absent from the Special Provision, no equivalent materials are to be used.

Flushing means flowing water through a section of watermain/ appurtenances and out of the system until the water appears visibly free from discoloration and particulates with an acceptable disinfectant concentration. This definition does not include recharging a watermain.

Force Majeure means an event or a cause beyond the reasonable control of a Party including, but not limited to, an Act of God, or of a Public Enemy, Acts of the Province or of any Foreign State, war, blockades, and civil commotions, Abnormal Weather, fire, disease, epidemic, pandemic, quarantine restrictions, embargoes or delays of Sub-Contractors due to such causes.

Higher Velocity Flushing means flushing of a watermain with sufficient velocity to discharge settled materials.

Isolate means operate valves to ensure that there is no flow of water to or from a specific section of watermain.

Microbiological Samples means water samples taken and tested for Escherichia coli and Total Coliforms by a licensed and accredited laboratory.

Ministry means the Ministry of the Environment, Conservation and Parks.

Operator-in-Charge means an operator-in-charge within the meaning of O. Reg. 128/04.

Provisional means that the use of this item is conditional on the circumstances determined by the Contract Administrator at the time of construction and that authorization to proceed must be granted to the Contractor prior to proceeding with the work.

Service Pipe means a service pipe within the meaning of O. Reg. 170/03.

Shop Drawings means any Drawings or Plans prepared by the Contractor for components that will form a permanent part of the Work and may, without limiting the generality thereof, include mechanical and electrical equipment or components permanently embedded in the work.

	Statutory Holdback means the holdbacks required under the Construction Act in the form of funds. A letter of credit, a demand-worded repayment bond or any other form are not acceptable forms of holdback. Substantial Performance has the meaning as set out in the Construction Act, R.S.O. 1990, c. C.30. 2 (1) For the purposes of this Act, a contract is substantially performed, (a) when the improvement to be made under that contract or a substantial part thereof is ready for use or is being used for the purposes intended including all portions of the contract necessary for the Owner to operate in accordance with applicable legislation governing the operation of the works constructed under the contract; and (b) when the improvement to be made under that contract is capable of completion or, where there is a known defect, correction, at a cost of not more than, (i) 3 per cent of the first \$1,000,000 of the contract price, (ii) 2 per cent of the next \$1,000,000 of the contract price, and (iii) 1 per cent of the balance of the contract price. R.S.O. 1990, c. C.30, s. 2 (1); 2017, c. 24, s. 4 (1, 2). (2) For the purposes of this Act, where the improvement or a substantial part thereof is ready for use or is being used for the purposes intended and the owner and the contractor agree not to complete the improvement expeditiously, the price of the services or materials remaining to be supplied and required to complete the improvement shall be deducted from the contract price in determining substantial performance. R.S.O. 1990, c. C.30, s. 2 (2); 2017, c. 24, s. 4 (3), 66. Water Advisory means a boil or drinking water advisory for the area being serviced by the affected watermains declared by the local Medical Officer of Health. Water Quality Analyst means a water quality analyst within the meaning of O. Reg. 128/04. Working Drawings or Working Plans means any Drawings or Plans prepared by the Contractor for the execution of the Work and may, without limiting the generality thereof, include formwork, falsework, and shoring plans; Roadway protection plans; or erection diagrams.
GC 2.01 RELIANCE ON CONTRACT DOCUMENTS	GC 2.01.01 a) shall be amended as follows: a) The location and depth of all utilities shown on the contract drawings are based on information obtained from the applicable operating authority. Neither the Owner nor the Contract Administrator can warrant the locations of the utilities.

	GC 2.01.02 a) shall be amended as follows: a) If a geotechnical investigation was performed for this contract, the report will be made available at the office of the Contract Administrator for inspection by any bidder but the office of the Contract Administrator assumes no responsibility for any errors or omissions which may be inherent in the soils report. Neither the Owner nor the Contract Administrator warrants interpretations of data or opinions expressed in any subsurface report. Bidders shall acknowledge that any geotechnical report shall not form part of the contract or agreement.
GC 2.02 ORDER OF PRECEDENCE	GC 2.02 shall be amended such that documents shall take precedence and govern in the following order: a) Agreement b) Addenda c) Special Provisions d) Contract Drawings e) Information to Bidders f) Standard Specifications g) Standard Drawings h) Tender i) Supplemental General Conditions j) OPSS.MUNI 100 General Conditions of Contract k) Working Drawings and Shop Drawings
GC 3.02 WORKING DRAWINGS	GC 3.02.01, GC 3.02.02, GC 3.02.03, GC 3.02.04, GC 3.02.05, and GC 3.02.07 shall also apply to Shop Drawings. GC 3.02.06 shall be amended as follows: .06 Work related to the Working Drawings shall not proceed until the Contract Administrator's comments are issued to the Contractor. Work related to the Shop Drawings shall not proceed until the Shop Drawings have been signed and dated by the Contract Administrator and marked with, "Reviewed" or "Reviewed as Modified", "Revise and Re-Submit" or "Not Reviewed".
GC 3.06 EXTENSION OF CONTRACT TIME	GC 3.06.01 shall be amended to read: .01 An application for an extension of Contract Time shall be made in writing by the Contractor to the Contract Administrator, with a copy to the Owner, within five (5) business days of the Contractor becoming aware of the need for such extension and at least 15 Days prior to the expiration of the Contract Time. The application for an extension of Contract Time shall enumerate the reasons and state the length of extension required.
GC 3.07 DELAYS	GC 3.07.01 shall be deleted and replaced with the following:

	.01 If the Contract is delayed in the performance of the Work by, a) errors in the Contract Documents; b) an act or omission of the Owner or Contract Administrator, or anyone employed or engaged by them directly, contrary to the provisions of the Contract Documents; c) a stop work order issued by a court or public authority, provided that such order was not issued as the result of an act or omission of the Contractor or anyone employed or engaged by the Contractor directly or indirectly. d) The Contract Administrator giving notice under section GC 7.09, Suspension of Work; or e) Archaeological finds, in accordance with subsection GC 3.15, Archaeological Finds, then the Contractor shall be reimbursed by the Owner for reasonable costs incurred by the Contractor as the result of such delay. An Extension of Contract Time may be granted in accordance with subsection GC 3.06, Extension of Contract Time. Notwithstanding the above noted list, anything that falls within the above-noted list does not fall within the definition of Force Majeure in Section 1.04.01, as amended by the Supplemental General Conditions.
	GC 3.07.03 shall be deleted and replaced with the following: .03 In no case shall an extension of Contract Time, if granted, be less than the time lost as the result of the event causing the delay, unless a shorter extension is agreed to by the Contractor and save and except for those delays listed in Section 3.07.01, as amended by the Supplemental General Conditions, in no other circumstance shall the Owner be responsible to the Contractor for payment for costs or damages incurred as a result of delays resulting in an Extension of the Contract Time.
GC 3.13.03 CLAIMS PROCEDURE	GC 3.13.03 shall be amended to read: .03 The Contractor shall submit, in writing, detailed claims as soon as reasonably possible and in any event no later than 30 Calendar Days or such other time as mutually agreed after completion of the Work affected by the situation. The detailed claim shall: a) Identify the item or items in respect of which the claim arises; b) State the grounds, contractual or otherwise, upon which the claim is made; c) Include the Records maintained by the Contractor supporting such claim; and d) Be identified on the Proper Invoice as a “Pending Claim”. The value of the Pending Claims shall be excluded from the Proper Invoice total. GC 3.13 shall be amended with the addition of the following:

	.06 Detailed claims, not reported within 30 Calendar Days after completion of the Work affected by the situation, will not be considered for payment.
GC 4.02 APPROVALS AND PERMITS	GC 4.02.01 shall be amended as follows: .01 The Contractor shall be responsible for obtaining and paying for all plumbing and building permits.
GC 6.01 PROTECTION OF WORK, PERSONS AND PROPERTY	GC 6.01.04 shall be deleted and replaced with: .04 The Contractor shall not be responsible for loss and damage that occurs as a result of errors in the Contract documents or acts or omissions of the Owner, the Contractor Administrator, their agents and employees, or others not directly or indirectly under the control of the Contractor, but within the Working Area with the Owner's permission.
GC 6.03.02 COMMERCIAL GENERAL LIABILITY INSURANCE	GC 6.03.02.01 shall be amended as follows: .01 Commercial General liability insurance <u>and completed operations coverage</u> shall <u>both</u> be in the name of the Contractor, with the Owner and the Contract Administrator named as additional insureds, <u>both</u> with the limits of not less than five million dollars inclusive per occurrence for bodily injury, death, and damage to property including loss of use thereof. The insurance shall be provided in a form acceptable to the Owner.
GC 6.03.07 INSURANCE REQUIREMENTS AND DURATION	GC 6.03.07.01 shall be amended as follows: .01 Each insurance policy as noted in the Contract Documents, <u>excluding completed operations coverage</u> , shall be in effect from the date of Contract signing until 10 days after the date of Final Acceptance of the Work, as set out in the final Acceptance Certificate. <u>Completed operations coverage shall be maintained for six years from the date of Final Acceptance.</u>
GC 7.01.07 SCHEDULE	GC 7.01.07 shall be amended with the addition of the following: .04 When the Contract Value exceeds \$1,000,000, every Prompt Payment submission shall include an updated construction schedule of operations, indicating the proposed methods of construction and sequence of Work and the time the Contractor proposes to complete the various items of Work. If the project is not going to be completed within the time specified in the Contract Documents, the Contractor shall identify this on the schedule and a request for extension of Contract Time shall be made by the Contractor.
GC 7.10 CONTRACTOR'S RIGHT TO STOP THE WORK OR TERMINATE THE	GC 7.10.02 shall be amended as follows: .02 If the Work is stopped or otherwise delayed for a period of 60 Days or more under an order of a court or other public authority which falls within Section GC 3.07.01(c), as amended in the Supplemental General

CONTRACT	Conditions, the Contractor may, without prejudice to any other right or remedy the Contractor may have, by giving the Owner written notice, terminate the Contract.
GC 7.16 WARRANTY	GC 7.16.02 is deleted and replaced with the following: .02 Subject to the previous paragraph the Contractor shall correct promptly, at no additional cost to the Owner, defects or deficiencies in the Work that appear, a) prior to and during the period of 12 months from the date of Completion of the Work as set out in the Completion Certificate, or b) such longer periods as may be specified in the Contract Documents for certain Materials, some of the Work, or all of the Work. The Contract Administrator shall promptly give the Contractor written notice of observed defects or deficiencies.
GC 7.18 DRAINAGE	GC 7.18.01 shall be amended as follows: .01 During construction and until the Work is completed, the Contractor shall make reasonable efforts to keep all portions of the Work properly and efficiently drained, to at least the same degree as that of the existing drainage conditions. The Contractor will be held responsible for all damage which may be caused or result from water backing up or flowing over, through, from or along any part of the works, or which any of the operations may cause to flow elsewhere.
GC 8.01.02 VARIATIONS IN TENDER QUANTITIES	GC 8.01.02, the last sentence in GC 8.01.02.01 shall be amended as follows: “Written requests for compensation must be received no later than 30 Calendar Days after the issuance of the Completion Payment.”
GC 8.02.03 ADVANCE PAYMENTS FOR MATERIALS	GC 8.02.03.01, the first sentence of paragraph GC 8.02.03.01 shall be amended as follows: .01 The Owner <u>may</u> make advance payments for Material intended for incorporation in the Work upon the written request of the Contractor and according to the following terms and conditions:
GC 8.02.04.01 PROGRESS PAYMENT	GC 8.02.04.01 shall be amended with the addition of the following mandatory documents being submitted with the Proper invoice, as allowed for under section GC 8.02.04.01.02 i): 1. When the contract value exceeds \$1,000,000 (excluding taxes), the following conditions apply regarding an updated schedule:

	a) In Gantt chart format or otherwise agreed to format, an updated and <u>accurate</u> construction schedule of operations indicating sufficient number of tasks that represent the full scope of Work. The updated schedule shall indicate the critical path, the proposed sequence of Work, proposed schedule of sub-contractors, the duration of each task that make up the Work, any slippage in the schedule, percentage of each task completed. Unrealistic estimations of timing are to be corrected with the submission of the next Proper Invoice; b) Noted in the updated schedule shall be approximate milestone dates of planned utility disruptions; and c) Noted in the updated schedule shall be approximate milestone dates of any planned changes to the traffic control plan. 2. As per SGC 3.13.03 Claims Procedure The Contractor shall submit detailed claims as soon as reasonably possible and in any event no later than 30 Calendar Days after completion of the Work affected by the situation. The detailed claim shall: a) Identify the item or items in respect of which the claim arises; b) State the grounds, contractual or otherwise, upon which the claim is made; c) Include the Records maintained by the Contractor supporting such claim; and d) Be identified on the Proper Invoice as a “Pending Claim”. The value of the Pending Claims shall be excluded from the Proper Invoice total. 3. The Contractor shall submit their final summary as per clause 8.02.05.09.02, with their Proper Invoice, as noted in GC 8.02.05.09.04, within 30 Calendar Days for all Work done as additional Work, a Change Directive, a Change Order, Extra Work or Work on a Time and Material basis. 4. Only approved additional Work, approved Change Directives, approved Change Orders, approved Extra Work or approved Work on a Time and Material are to be included in the Total Value of Work Performed, on the Proper Invoice. 5. The cut-off date for the Proper Invoice shall be the last Working Day of the month, unless approved otherwise. 6. Proper invoices are to be emailed to the Owner and to the Contract Administrator, monthly unless approved otherwise. Names and contact details and the timing of the monthly invoices will be provided at the pre-construction meeting.
GC 8.02.04.04 SUBSTANTIAL PERFORMANCE OF WORK	GC 8.02.04.04.04, shall be amended as follows: .04 Upon receipt of a copy of the Certificate of Substantial Performance, the Contractor shall forthwith, as required by Section 32(1) Paragraph 5 of the

	Construction Act, as amended, publish a copy of the certificate in a construction trade newspaper.
GC 8.02.04.05 SUBSTANTIAL PERFORMANCE PAYMENT AND SUBSTANTIAL PERFORMANCE STATUTORY HOLDBACK RELEASE PAYMENT CERTIFICATES	GC 8.02.04.05.03, shall be amended as follows: .03 The Substantial Performance Statutory Holdback Release Payment Certificate shall be a payment certificate releasing to the Contractor the Statutory Holdback due in respect of Work performed up to the date of Substantial Performance. Payment of such Statutory Holdback shall be due 61 Days after the date of publication of the Certificate of Substantial Performance but subject to the provisions of the Construction Act and the submission by the Contractor of the following documents: a) a satisfactory Certificate of Clearance from the Workplace Safety and Insurance Board; b) proof of publication of the Certificate of Substantial Performance; c) Three copies of an original signed and sealed release, on the form provided, or in a form satisfactory to the Contract Administrator, by the Contractor releasing the Owner from all further claims related to the Contract qualified by stated exceptions such as outstanding work or matter arising out of subsection GC 3.13 Claims, Negotiations, Mediation; and d) Three copies of an original signed and notarized statutory declaration on the form provided, or in a form satisfactory to the Contract Administrator, by the Contractor indicating that all liabilities incurred by the Contractor and the Subcontractors in carrying out the Contract have been discharged except for the statutory holdbacks properly retained and Warranty Period holdback properly retained.
GC 8.02.04.07 COMPLETION PAYMENT AND COMPLETION STATUTORY HOLDBACK RELEASE PAYMENT CERTIFICATES	GC 8.02.04.07.02, shall be amended as follows: .02 The Completion Statutory Holdback Release Payment Certificate shall be a payment certificate releasing to the Contractor the further Statutory Holdback. Subject to any outstanding liens and permissible set-offs and upon submission of the following: a) Three copies of an original signed and sealed release, on the document provided, or in a form satisfactory to the Contract Administrator, by the Contractor releasing the Owner from all further claims related to the Contract qualified by stated exceptions such as outstanding work or matters arising out of subsection GC 3.13 Claims, Negotiations, Mediation; b) Three copies of an original signed and notarized statutory declaration, on the form provided, or in a form satisfactory to the Contract Administrator, by the Contractor indicating that all liabilities incurred by the Contractor and the Subcontractors in carrying out the Contract have been discharged except for the

	statutory holdbacks properly retained and Warranty Period Holdback properly retained; and c) A satisfactory Certificate of Clearance from the Workplace Safety and Insurance Board, the Owner shall pay the remaining statutory holdback on the Work done, within 28 Days after the expiration of the 60-Day lien period.
GC 8.02.05.07 PAYMENT FOR HAND TOOLS	GC 8.02.05.07.01 shall be amended as follows: .01 Notwithstanding any other provision of this Section, no payment shall be made to the Contractor for or in respect of Hand Tools or equipment that are tools of the trade including pick-up trucks and service vans.
GC 8.02.05.09 SUBMISSION OF INVOICES	GC 8.02.05.09 shall be amended as follows: .04 The final summary as per clause 8.02.05.09.02 shall be submitted by the Contractor within 30 Calendar Days after the completion of the Work on a Time and Material Basis.

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

AGREEMENT

CONTRACT NO. 23245

THIS AGREEMENT MADE IN TRIPLICATE THIS _____

DAY OF _____, 2026.

BETWEEN:

(hereinafter called "the Owner")
OF THE FIRST PART
- and -

(hereinafter called "the Contractor")
OF THE SECOND PART

WITNESSETH

That the Owner and the Contractor, in consideration of the fulfilment of their respective promises and obligations herein set forth covenant and agree with each other as follows:

ARTICLE 1

a) A description of the work is:

Thames St & Niagara St Reconstruction and Barnes Drain Replacement

b) The Contractor shall, except as otherwise specifically provided, at their own expense, provide all and every kind of labour, machinery, plant, structures, roads, ways, materials, appliances, articles and things necessary for the due execution and completion of all the work set out in this contract and shall forthwith according to the instructions of the Contract Administrator commence the works and diligently execute the respective portions thereof and deliver the works complete in every particular to the Owner within the time specified.

ARTICLE 2

In case of any inconsistency or conflict between the provisions of this Agreement and the Plans, or Specifications or General Conditions, or Tender, or any other documents or writing, the provisions of such documents shall take precedence and govern in the following order; namely,

- a) Agreement
- b) Addenda
- c) Special Provisions
- d) Contract Drawings
- e) Information to Bidders
- f) Standard Specifications
- g) Standard Drawings
- h) Form of Tender
- i) Supplemental General Conditions
- j) General Conditions
- k) Working Drawings

ARTICLE 3

The Contractor shall not without the consent in writing of the Owner (or the Engineer) and without restricting in any way the provisions of the General Conditions attached hereto make any assignment of any part or the whole of any monies due or to become due under the provisions of this contract.

ARTICLE 4

The Owner covenants with the Contractor that the Contractor having in all respects complied with the provisions of this contract, will be paid for and in respect of the works at the tendered lump sum or unit prices after measurement approved by the Contract Administrator, the total which is presently estimated to be the sum of

subject to such additions and deductions as may properly be made under the terms hereof, subject to the provision that the Owner may make payments on account monthly or otherwise as may be provided in the attached hereto.

ARTICLE 5

Where any notice, direction or other communication is required to be or may be given or made by one of the parties hereto to the other or to the Contract Administrator, it shall be deemed sufficiently given or made if mailed or delivered in writing to such party or to the Contract Administrator at the following address:

B. M. ROSS AND ASSOCIATES LIMITED
Engineers and Planners
2695 Hamilton Road, Box 400
Brights Grove, ON N0N 1C0

Where any such notice, direction or other communication is given or made to the Contract Administrator, a copy thereof shall likewise be delivered to any agent of the Contract Administrator appointed in accordance with the General Conditions of this Contract and where any such notice, direction or other communications is given or made to such Agent, a copy thereof shall likewise be delivered to the Contract Administrator.

ARTICLE 6

A copy of each of the General Conditions, Supplemental General Conditions, Special Provisions, Addenda, Tender, Information to Bidders, and Supplemental Specifications is hereto annexed and together with the Plans relating thereto and listed in the Specifications are made part of this Contract as fully to all intents and purposes as though recited in full herein.

ARTICLE 7

No implied contract of any kind whatsoever by or on behalf of the Owner shall arise or be implied from anything in this contract contained, nor from any position or situation of the parties at any time, it being clearly understood that the express covenants and agreements herein contained made by the Owner shall be the only covenants and agreements upon which any rights against the Owner may be founded.

ARTICLE 8

Time shall be deemed the essence of this Contract.

ARTICLE 9

The Contractor declares that in tendering for the works and in entering into this Contract, they have either investigated the character of the work and all local conditions that might affect the tender or the acceptance of the work, or that not having so investigated, is willing to assume and does hereby assume all risk of conditions arising or developing in the course of the work which might or could make the work or any items thereof, more expensive in character, or more onerous to fulfill than was contemplated or known when the tender was made or the Contract signed. The Contractor also declares that they did not and do not rely upon information furnished by any methods whatsoever by the Owner or its officers or employees, being aware that any information from such sources was and is approximate and speculative only, and was not in any manner warranted or guaranteed by the Owner.

ARTICLE 10

The Contractor declares that in entering into this Contract the obligations shall be upheld of the Ontario Human Rights Code, the Occupational Health and Safety Act, the Employment Standards Act, the Accessibility for Ontarians with Disabilities Act, the Criminal Code of Canada and the Charter of Rights and Freedoms. In addition, any obligations established by the Owner's policies which prohibit harassment/discrimination on a number of grounds including political affiliation and the level of literacy shall be upheld by the Contractor.

WHERE LEGALLY MANDATED, the Contractor shall have in place the necessary policies, programs, information, instruction, plans and/or other supports that are consistent with their obligations and shall have an internal process available for employees and service recipients to prevent, address and remedy discrimination, racism, harassment, hate and inaccessibility complaints. The Contractor agrees that they shall, upon request by the Owner, provide evidence of the policies, programs, information, instruction, plans and other supports and an appropriate internal complaint resolution process required under this Declaration which is sufficient to allow the Owner to determine compliance. The Contractor acknowledges that failure to demonstrate compliance with this declaration, to the satisfaction of the Owner, may result in the termination of the contract.

ARTICLE 11

This contract shall apply to and be binding on the parties hereto and their successors, administrators, executors and assigns and each of them.

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals the day and year first above written or caused their corporate seals to be affixed, attested by the signature of their proper officer, as the case may be.

FOR THE OWNER:

_____ Signature	_____ Name	_____ Title	_____ Date

I/We have the authority to bind the corporation.

_____ Signature	_____ Name	_____ Title	_____ Date

I/We have the authority to bind the corporation.

FOR THE CONTRACTOR:

_____ Signature	_____ Name	_____ Title	_____ Date

I/We have the authority to bind the corporation.

_____ Signature	_____ Name	_____ Title	_____ Date

I/We have the authority to bind the corporation.

CONTRACT RELEASE

(IN THE MATTER of a contract, known as Contract No. _____
(entered into between _____ the Owner
(_____ AND _____ the Contractor
(dated _____, 20____
(for the construction of _____
(_____
(in _____, Ontario.

KNOW ALL MEN BY THESE PRESENTS that I/We

(name of Contractor, in full)

for and in consideration of other good and valuable consideration paid by the Owner, have remised, released and forever discharged, and by these presents do for myself/ourselves, my/our heirs, executors, administrators and assigns or successors and assigns, as the case may be, remise, release and forever discharge the Owner, its successors and assigns, of and from all manner of action and actions, cause and causes of action, suits, debts, dues, sums of money, claims and demands whatsoever at law or in equity which I/We ever had or now have, or which I/We or my/our heirs, executors, administrators or assigns or successors and assigns, as the case may be, hereafter can, shall or may have by reason of the above-mentioned Contract, save and except any claim which I/We have arising out of:

- 1) the retention by the Owner of the Warranty Holdback of the Contract price; and
- 2) any sum retained by the Owner against the cost of uncompleted work; and
- 3) _____
(if none, state "none")

IN WITNESS WHEREOF the parties hereto have hereunto set their hands and seals.

SIGNED, SEALED AND DELIVERED)
)
)
)
)
)
)

Witness or Company Seal

Date

STATUTORY DECLARATION RE: LIENS, LIABILITIES & PAYMENT OF ACCOUNTS

DOMINION OF CANADA
PROVINCE OF ONTARIO

IN THE MATTER of (a contract, known as

entered into between (_____ the Owner
AND (_____ the Contractor
dated (_____, 20____
for the construction of (_____
in (_____, Ontario.

TO WIT:

I, _____ of _____ in the
Province of _____, do solemnly declare:

1. That I am _____ of the
(President, Secretary, Treasurer, a Partner, etc.)

Contractor named in the Contract above-mentioned and as such have personal knowledge of the facts hereunder declared.

2. That the said Contractor has complied with the terms of the Construction Act, R.S.O. 1990, c.C.30 and amendments thereto, and with the requirements of statutes and regulations of the Province of Ontario relating to the payment of fair wages.
3. That with the exception of accounts listed below, and amounts held back and amounts deferred by written agreement, all liabilities incurred by the said Contractor arising out of work performed have been discharged.
4. That the following is a complete list of disputed accounts:

Name & Address of Creditor	Service Rendered	Total Claims (\$)	Amount in Dispute	Amount Paid (\$)
(If there are no accounts, enter "NONE" above)				

5. That all persons who have placed or furnished any material or things to be used in connection with the above Contract have been fully paid or their claims have been settled in respect of such work, service, materials or things and there are no liens, garnishees, attachments or claims relating thereto.
6. That all subcontractors who were engaged in or in any manner associated with the performance of any part of the above contract have discharged all liabilities which they incurred in respect thereof.
7. That all claims for damage to property or injury to persons of which the above-named Contractor has received notice have been fully paid or settled, except for the following:

Claimant	Description of Claim	Amount of Claim (\$)	Amount Paid (\$)
(If there are no accounts, enter "NONE" above)			

8. That the above-named Contractor has not had any notice of any grounds for a claim (other than those covered by paragraph 7 above) connected with this contract by a third party and for which a claim might be made and I believe that no such claim will be made.

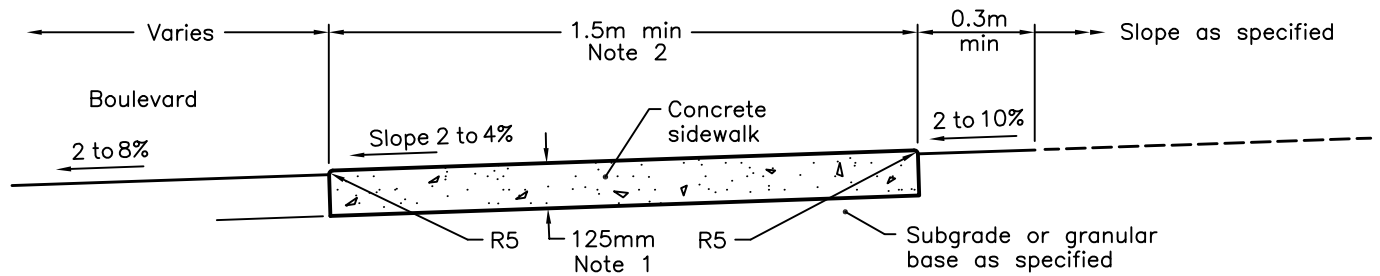
AND I MAKE THIS SOLEMN DECLARATION conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath and by virtue of "The Canada Evidence Act".

DECLARED before me at the
in the County of
this day of
A.D. 20

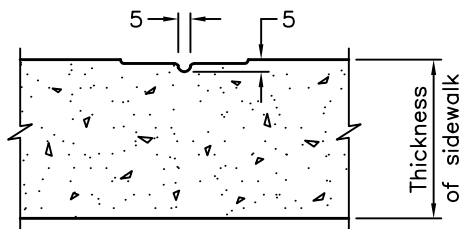
of)
)
)
)
)
)

A Commissioner, etc. or Notary Public

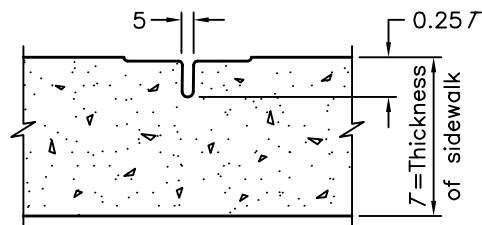
FOR INFORMATION ONLY
PLEASE REGISTER TO BID



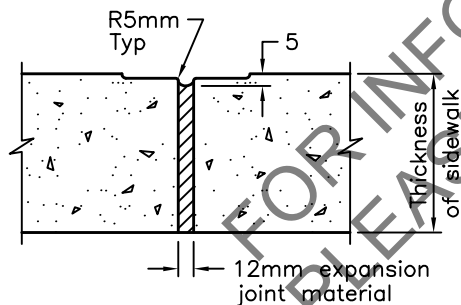
TYPICAL SECTION



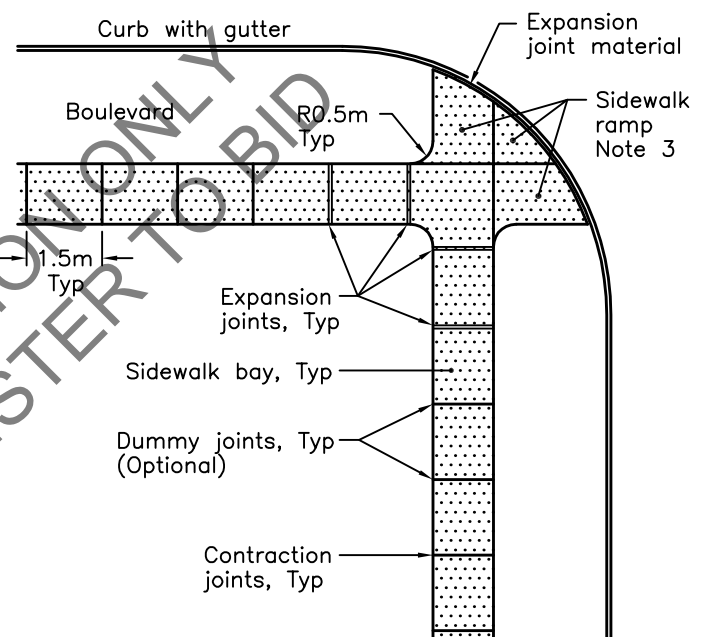
DUMMY JOINT (OPTIONAL)



CONTRACTION JOINT (Note 4)



EXPANSION JOINT



JOINT LAYOUT

NOTES:

- 1 Sidewalk thickness at residential driveways and adjacent to curb shall be 150mm. At commercial and industrial driveways, the thickness shall be 200mm.
- 2 Sidewalk width shall be wider when specified.
- 3 This OPSD shall be read in conjunction with OPSD 310.030, 310.031, 310.033, and 310.039.
- 4 Contraction Joint may be tooled or sawcut.
- A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

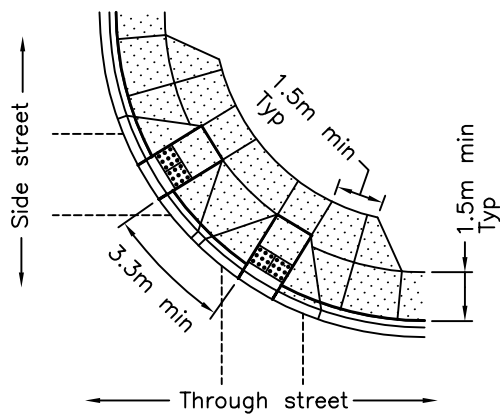
Nov 2019

Rev 3

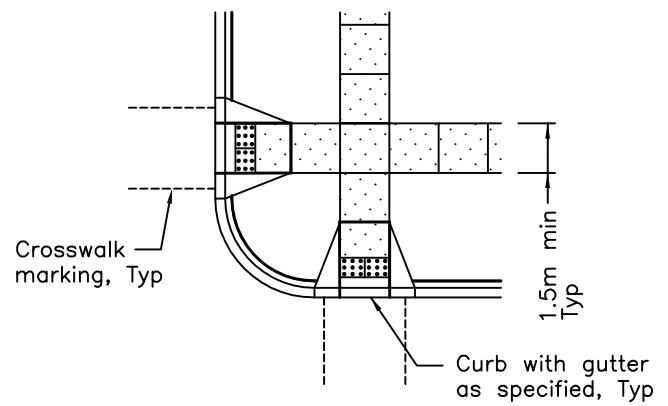
CONCRETE SIDEWALK

OPSD 310.010

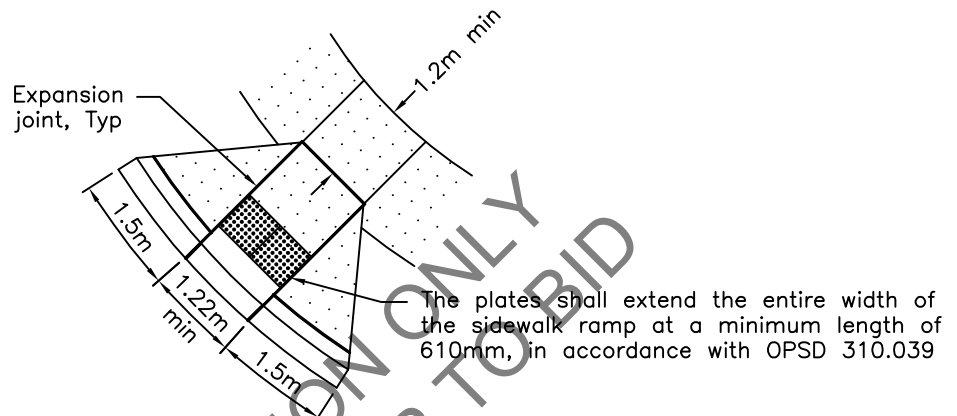




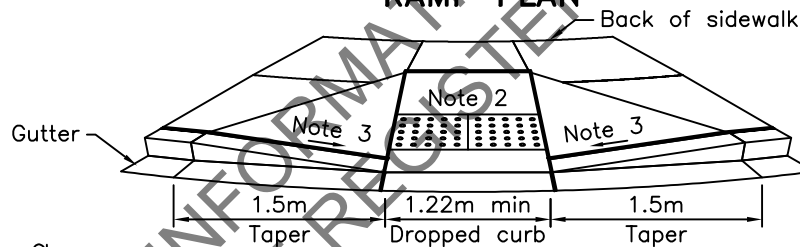
DOUBLE RAMP WITHOUT BOULEVARD



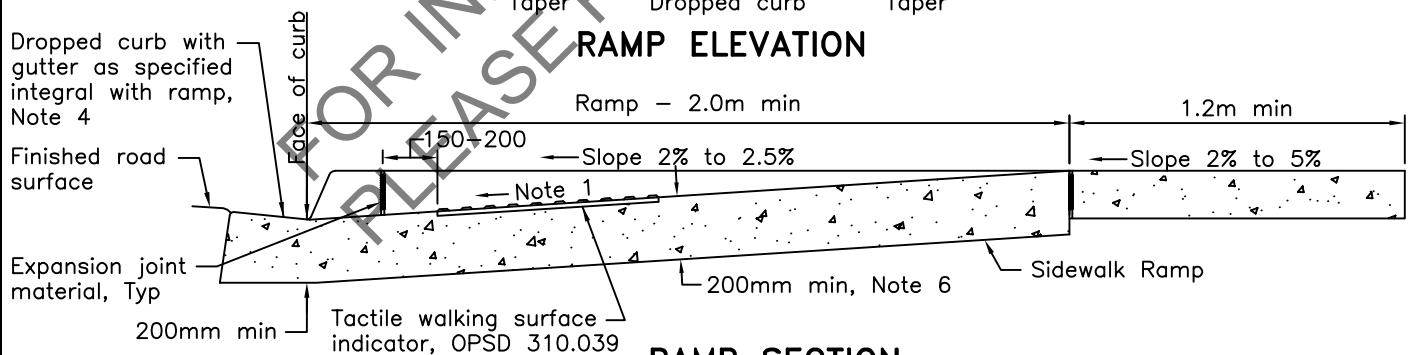
RAMPS WITH BOULEVARD



RAMP PLAN



RAMP ELEVATION



RAMP SECTION

NOTES:

- 1 Slope of ramp shall not exceed 8%.
- 2 Cross slope of ramp shall not exceed 2% in either direction.
- 3 Cross slope of flared side of ramp shall not exceed 8%.
- 4 Dropped curb at ramp shall be modified to eliminate 30 mm step at gutter line.
- 5 Minimum thickness of ramp is 200mm. Minimum thickness of sidewalk and flared sides adjacent to ramp is 150mm.
- A All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

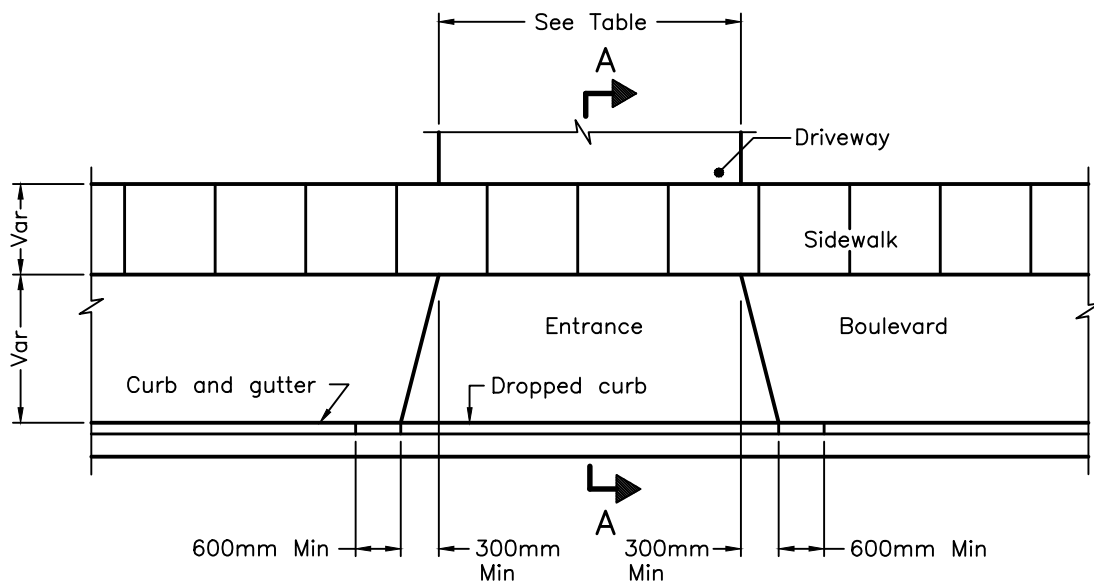
Nov 2019

Rev 1

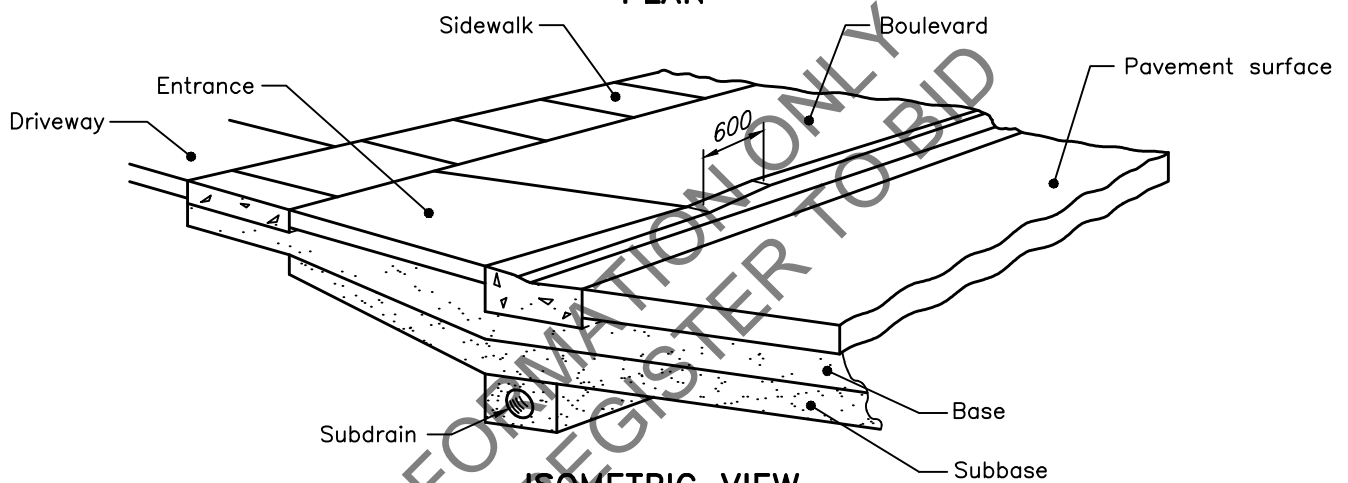
**CONCRETE SIDEWALK RAMPS AT
UNSIGNALIZED INTERSECTIONS**

OPSD 310.033

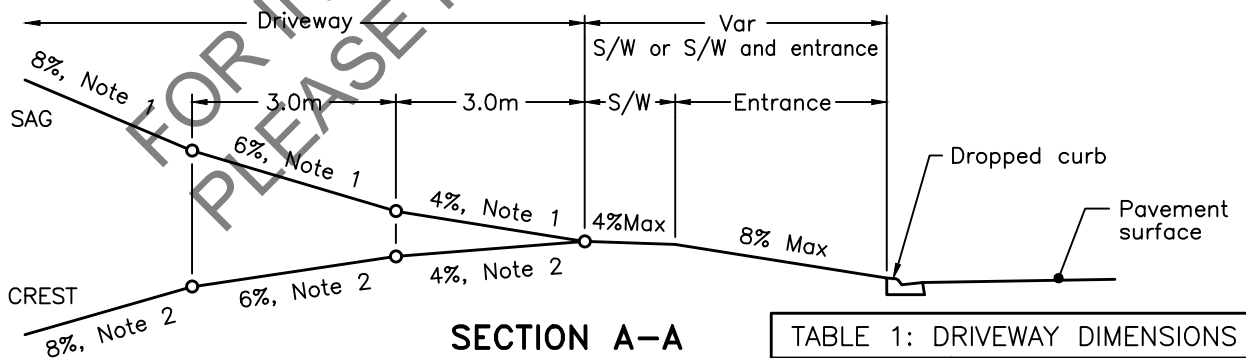




PLAN



ISOMETRIC VIEW



SECTION A-A

NOTES:

- 1 Maximum upgrade shall be 10%.
- 2 Maximum downgrade shall be 8%.

A Dimensions are for guidance purposes only, subject to local municipal standards.
B All dimensions are in millimetres unless otherwise shown.

TABLE 1: DRIVEWAY DIMENSIONS

LAND USE	WIDTH m			
	Single		Double	
	Min	Max	Min	Max
Residential	3.0	4.3	6.0	7.3

ONTARIO PROVINCIAL STANDARD DRAWING

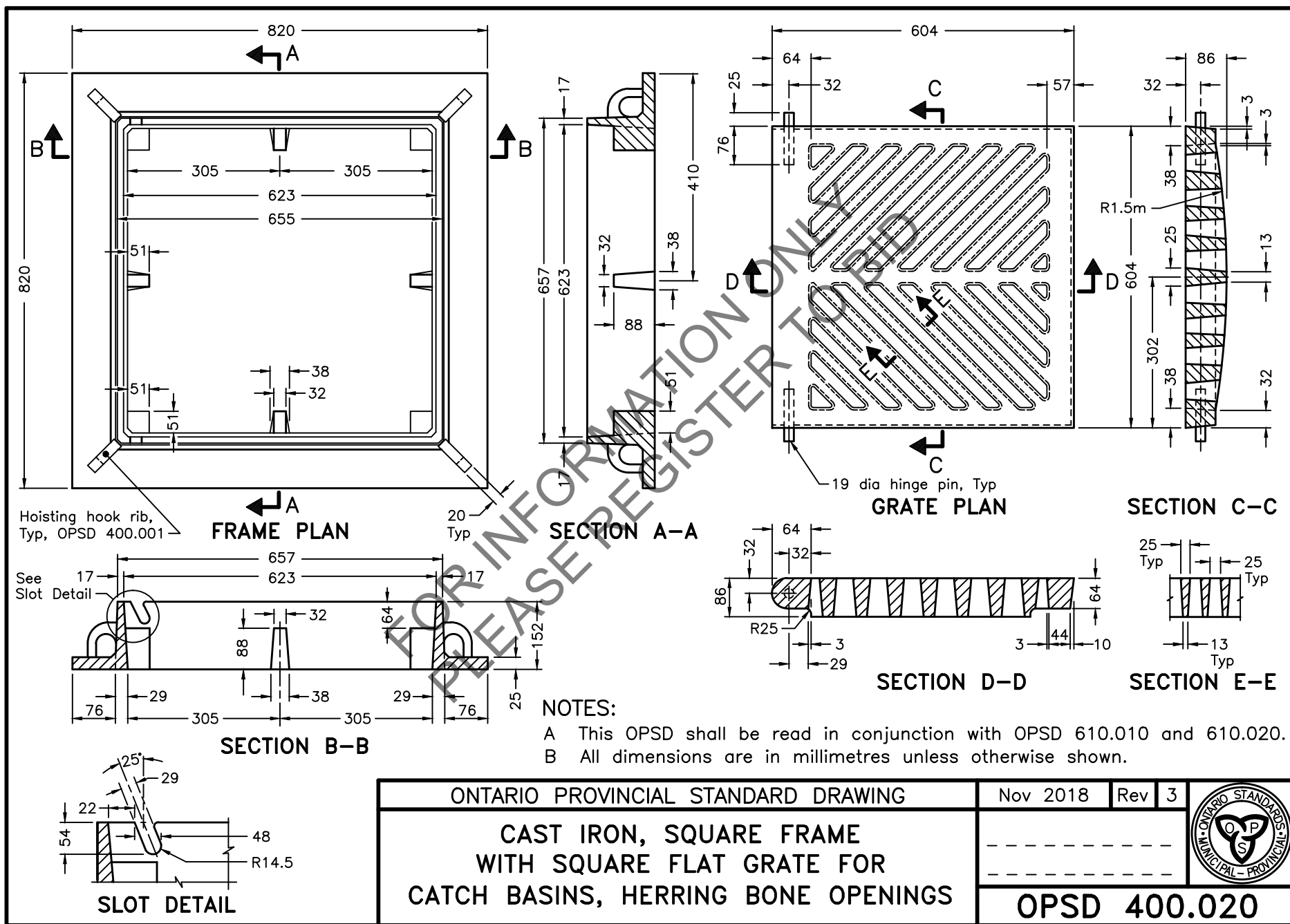
Nov 2025

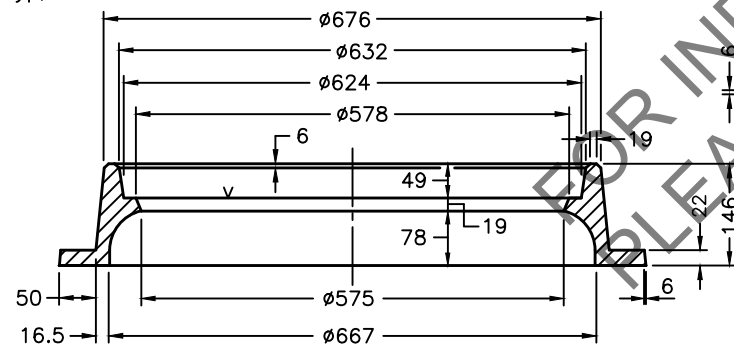
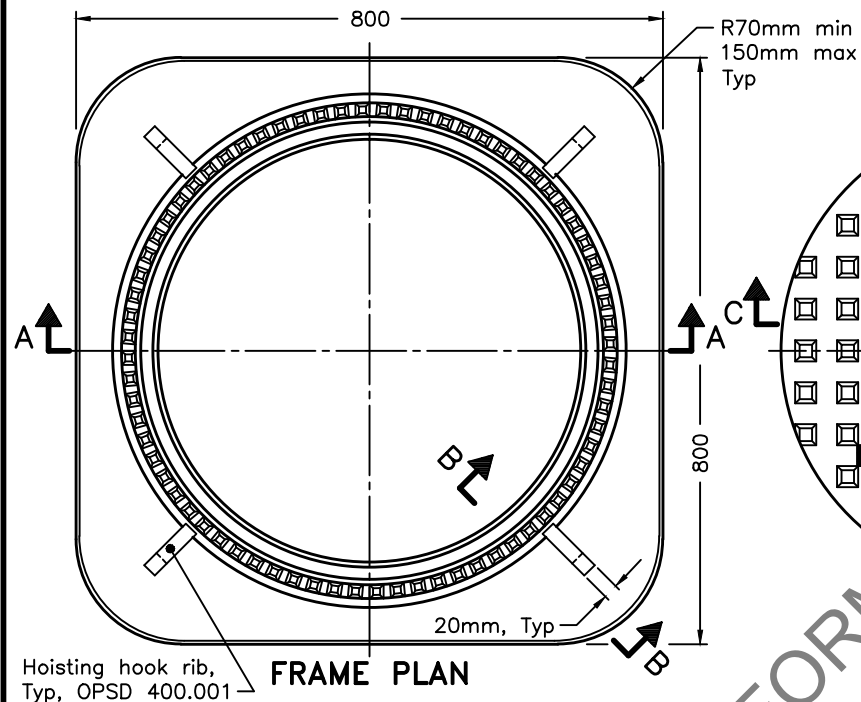
Rev 3

**URBAN RESIDENTIAL
ENTRANCE**

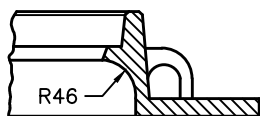


OPSD 351.010

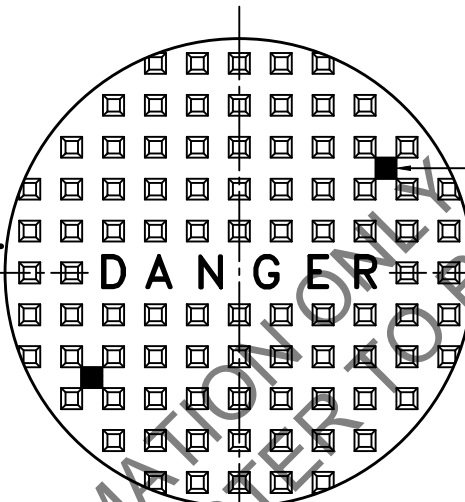




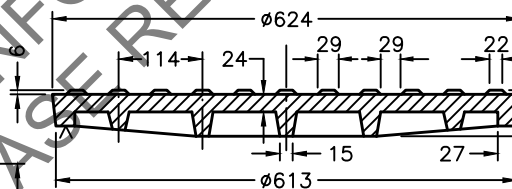
SECTION A-A



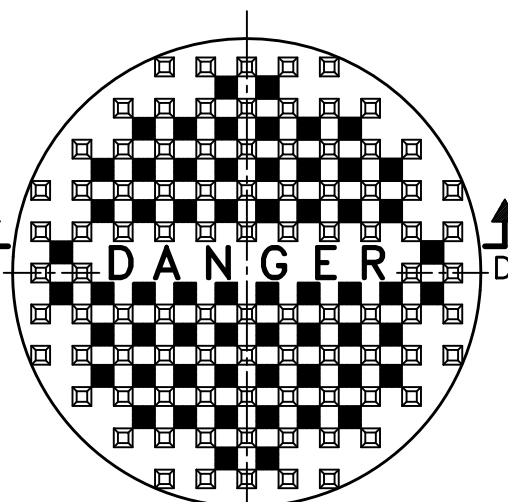
SECTION B-B



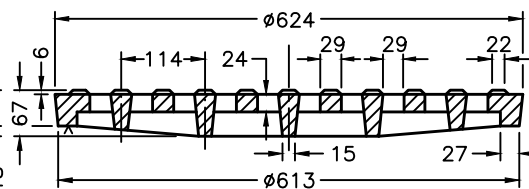
**TYPE A
CLOSED COVER**



SECTION C-C



**TYPE B
OPEN COVER**



SECTION D-D

NOTES:

A Covers shall be Type A or Type B, as specified.

B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2018

Rev 4

**CAST IRON, SQUARE FRAME WITH
CIRCULAR CLOSED OR OPEN COVER
FOR MAINTENANCE HOLES**



OPSD 401.010

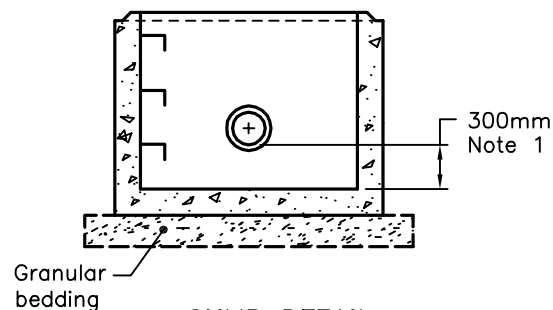
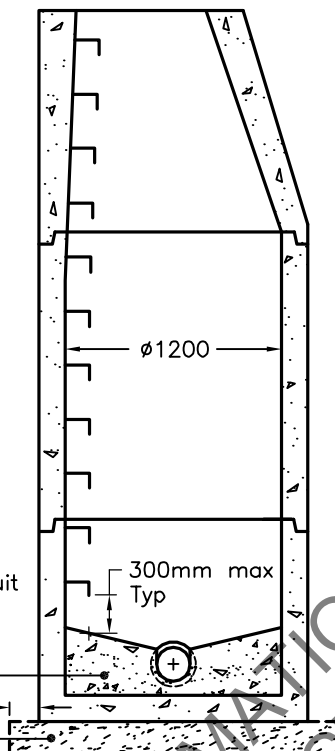
Tapered top
See alternative C

Riser sections
as required

Monolithic base with inlet
and outlet openings to suit
See alternatives A and B

Bench or sump
as specified

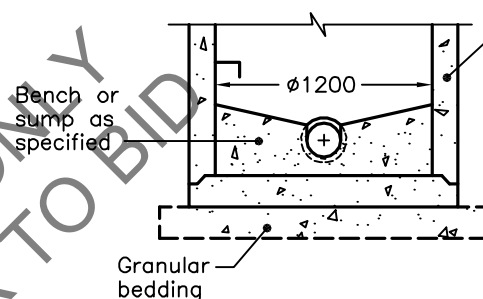
300mm, Typ
Granular bedding



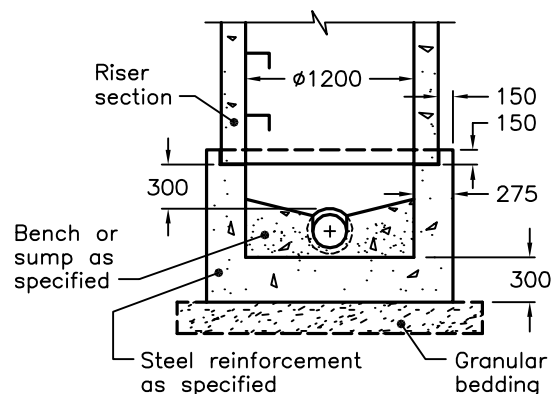
SUMP DETAIL

ALTERNATIVES

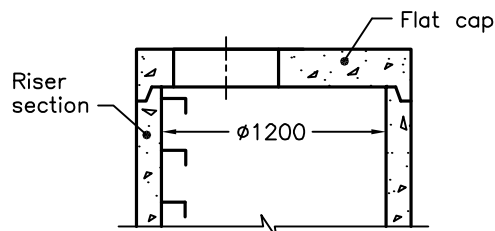
Bottom riser section with
inlet and outlet openings to suit



A PRECAST SLAB BASE



B CAST-IN-PLACE BASE



C PRECAST FLAT CAP

NOTES:

- 1 The sump is measured from the lowest invert.
- A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
- B Precast concrete components shall be according to OPSD 701.030, 701.031, or 701.032.
- C Structure exceeding 5.0m in depth shall include safety platform according to OPSD 404.020.
- D Pipe support according to OPSD 708.020.
- E For benching and pipe opening details, see OPSD 701.021.
- F For adjustment unit and frame installation, see OPSD 704.010.
- G All dimensions are nominal.
- H All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

**PRECAST CONCRETE
MAINTENANCE HOLE**
1200mm DIAMETER

Nov 2014 | Rev | 5



OPSD 701.010

Tapered top
See alternatives D
and E

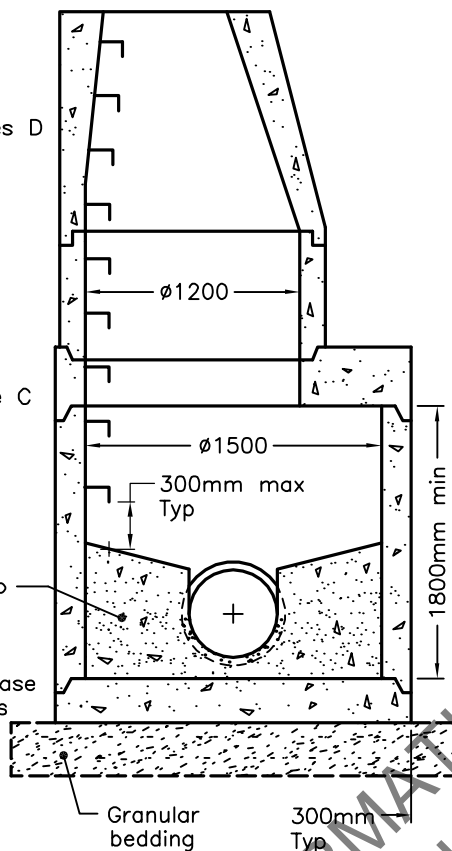
Riser sections
as required

Transition slab
See alternative C

Riser sections
as required

Bench or sump
as specified
Note 1

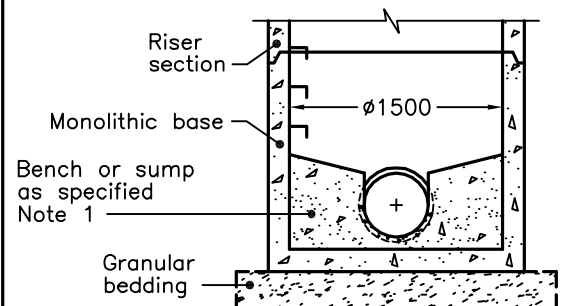
Precast slab base
See alternatives
A and B



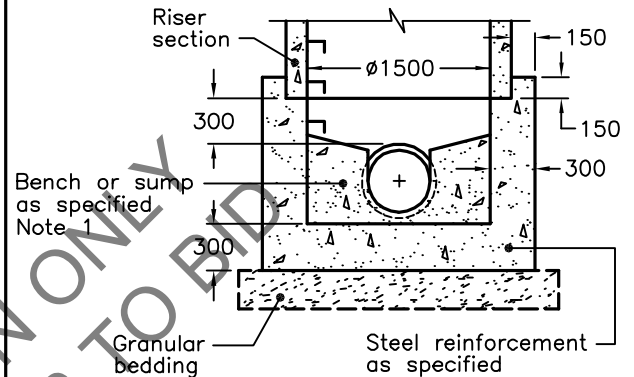
NOTES:

- 1 For sump detail, see OPSD 701.010.
- A Granular backfill shall be placed to a minimum thickness of 300mm all around the maintenance hole.
- B Precast concrete components shall be according to OPSD 701.030, 701.031, 701.040, 701.041, 703.011, 703.021, and 706.010.
- C Structures exceeding 5.0m in depth shall include safety platform according to OPSD 404.020 or 404.021.
- D Pipe support shall be according to OPSD 708.020.
- E For benching and pipe opening details, see OPSD 701.021.
- F For adjustment unit and frame installation, see OPSD 704.010.
- G All dimensions are nominal.
- H All dimensions are in millimetres unless otherwise shown.

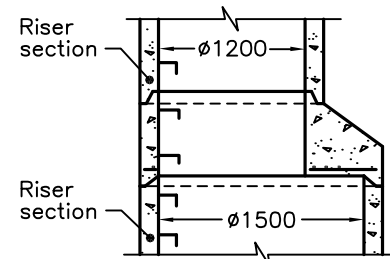
ALTERNATIVES



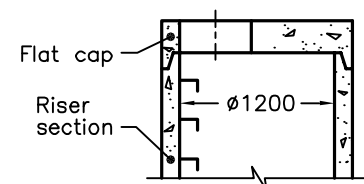
A PRECAST MONOLITHIC BASE



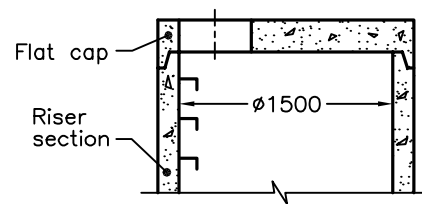
B CAST-IN-PLACE BASE



C TAPERED TRANSITION SLAB



D 1200mm PRECAST FLAT CAP



E 1500mm PRECAST FLAT CAP

ONTARIO PROVINCIAL STANDARD DRAWING

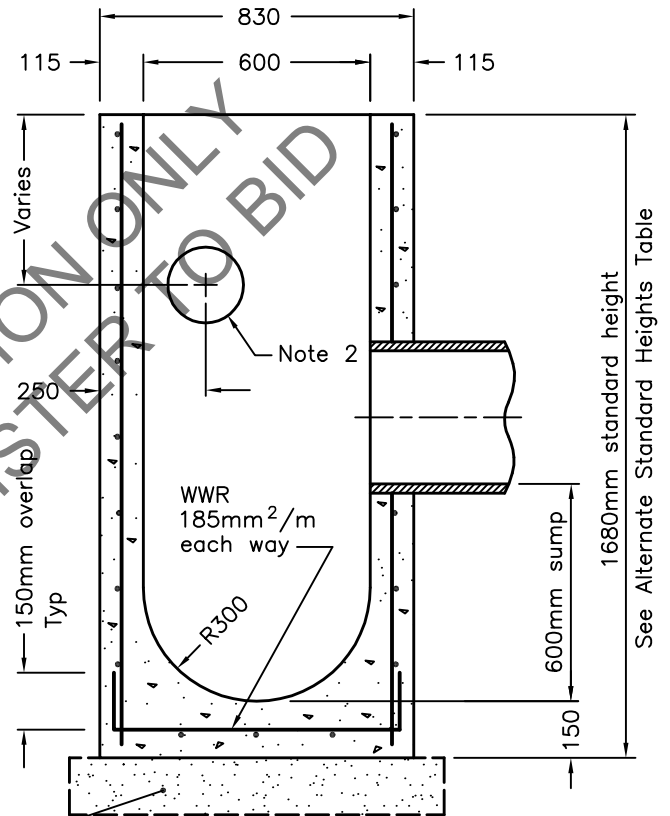
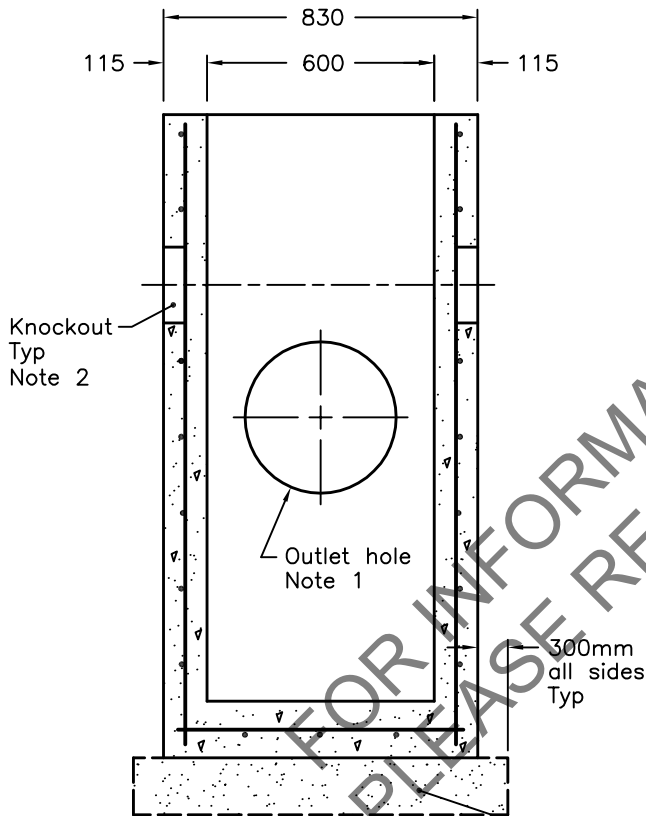
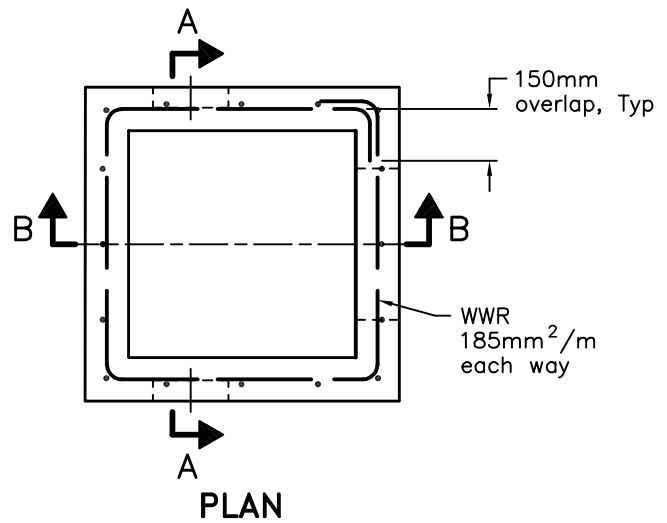
**PRECAST CONCRETE
MAINTENANCE HOLE**
1500mm DIAMETER

Nov 2014 Rev 5



OPSD 701.011

ALTERNATE STANDARD HEIGHTS	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1520
D	1380



NOTES:

- 1 Outlet hole size 525mm diameter maximum, location as required.
- 2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
- A Centre reinforcing in base slab and walls ± 20 mm.
- B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.

- C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
- D Pipe support shall be according to OPSD 708.020.
- E All dimensions are nominal.
- F All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

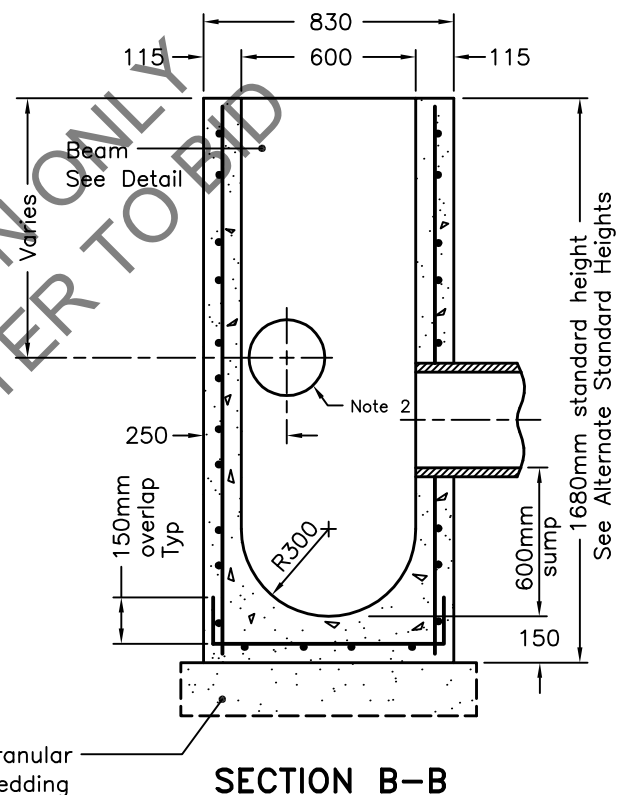
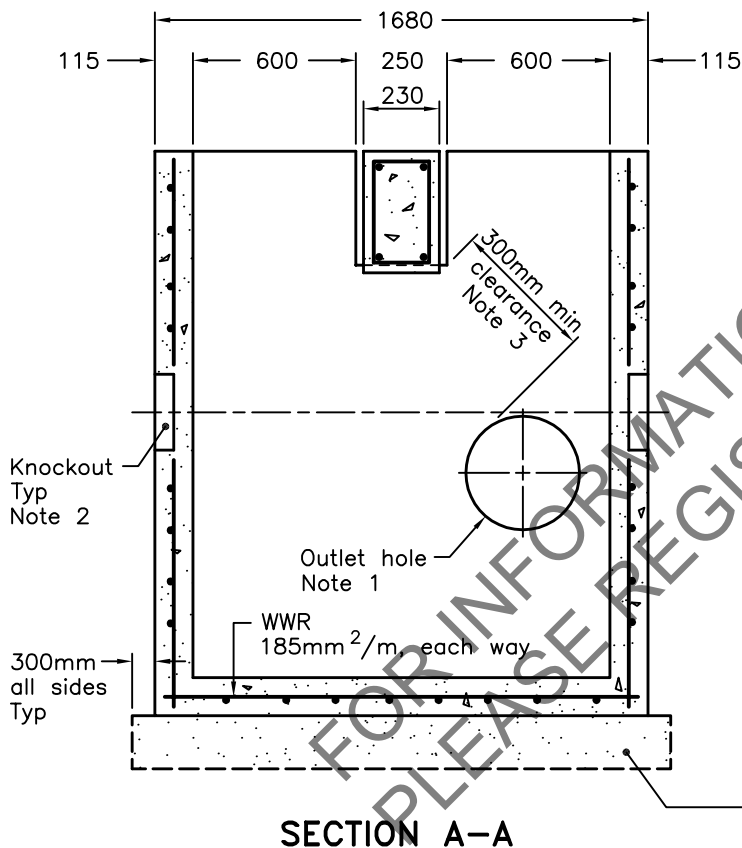
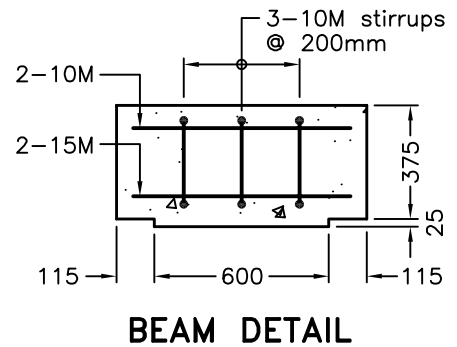
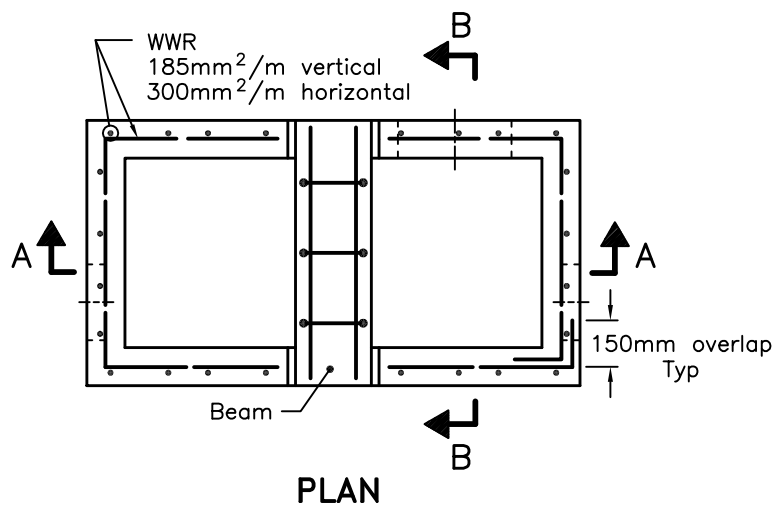
PRECAST CONCRETE CATCH BASIN
600x600mm

Nov 2019

Rev 4



OPSD 705.010



NOTES:

- 1 Outlet hole size 525mm diameter maximum, location as required.
- 2 200mm diameter knockout to accommodate subdrain. Knockout shall be 60mm deep.
- 3 Minimum clearance between beam recess and hole for pipe shall be 300mm or minimum clearance can be 150mm with addition of two 15M size rebar on 45 degree diagonal.
- A Centre reinforcing in base slab and walls ± 20 mm.
- B Granular backfill shall be placed to a minimum thickness of 300mm all around the catch basin.
- C Frame, grate, and adjustment units shall be installed according to OPSD 704.010.
- D Pipe support shall be according to OPSD 708.020.
- E All dimensions are nominal.
- F All dimensions are in millimetres unless otherwise shown.

ALTERNATE STANDARD HEIGHTS	
ALTERNATIVE	DIMENSION
A	1980
B	1830
C	1680

ONTARIO PROVINCIAL STANDARD DRAWING

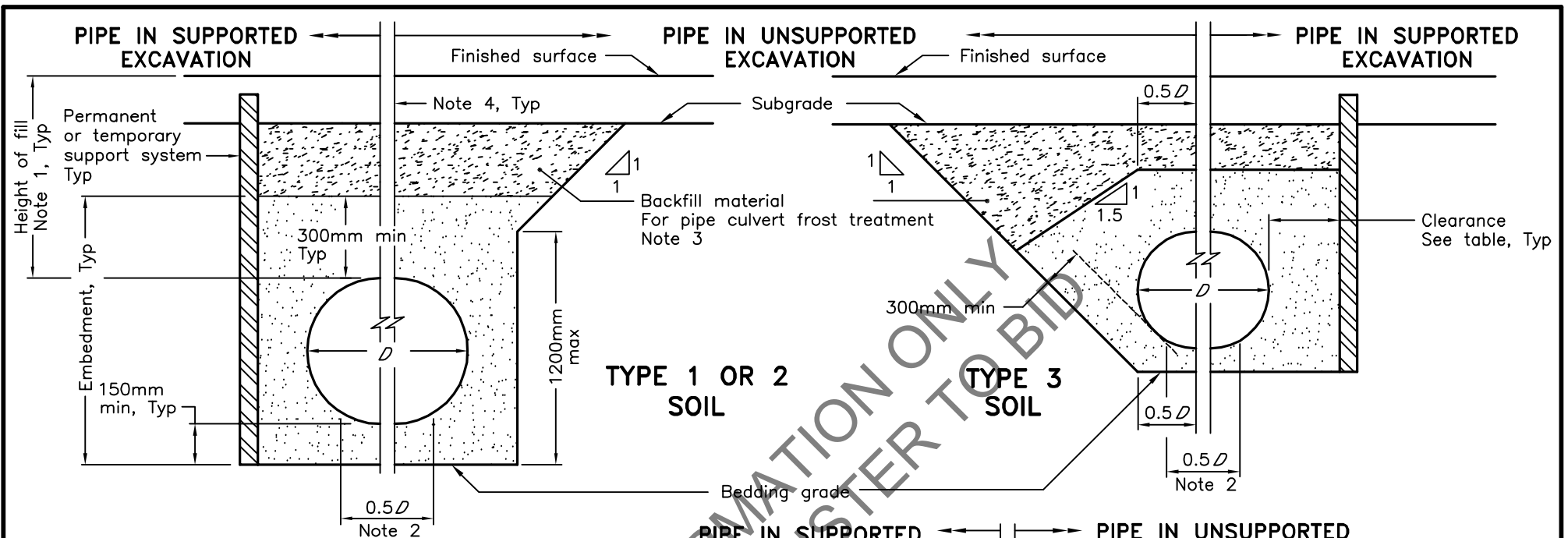
Nov 2019

Rev 4

**PRECAST CONCRETE
TWIN INLET CATCH BASIN
600 x 1450mm**

OPSD 705.020



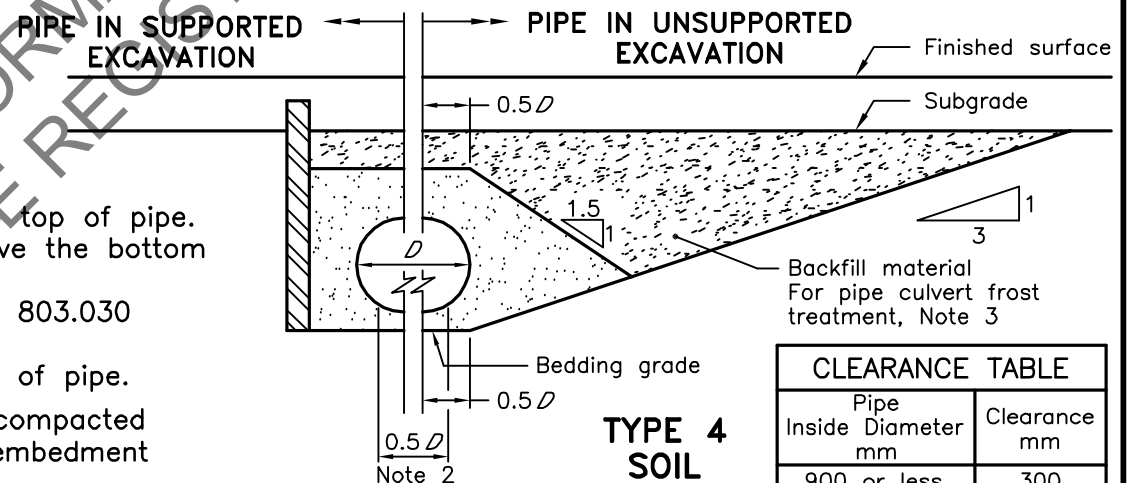


LEGEND:

D - Inside diameter

NOTES:

- 1 Height of fill is measured from the finished surface to top of pipe.
 - 2 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
 - 3 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
 - 4 Condition of excavation is symmetrical about centreline of pipe.
- A Granular material placed in the haunch area shall be compacted prior to placing and compacting the remainder of the embedment material.
- B Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
- C All dimensions are in metres unless otherwise shown.



CLEARANCE TABLE	
Pipe Inside Diameter mm	Clearance mm
900 or less	300
Over 900	500

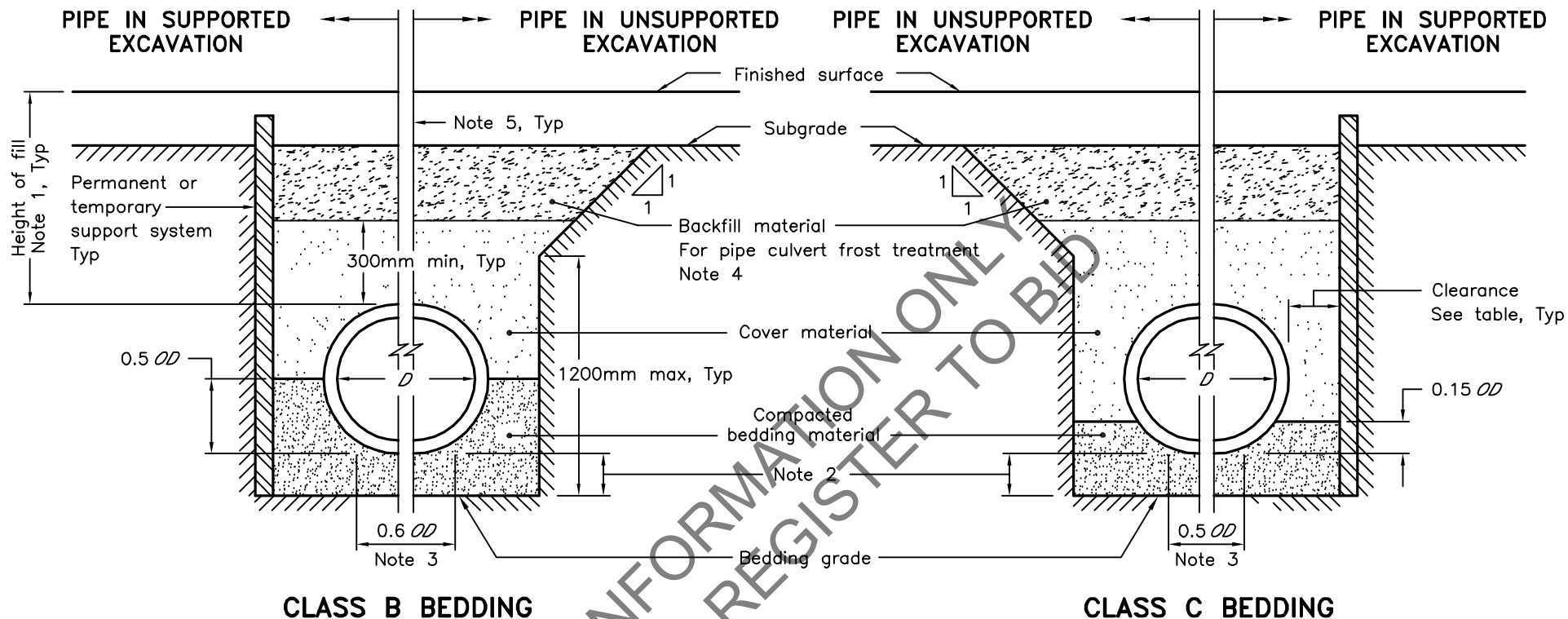
ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2014 Rev 3

FLEXIBLE PIPE
EMBEDMENT AND BACKFILL
EARTH EXCAVATION

OPSD 802.010





NOTES:

- 1 Height of fill is measured from the finished surface to top of pipe.
 - 2 The minimum bedding depth below the pipe shall be $0.15D$. In no case shall this dimension be less than 150mm or greater than 300mm.
 - 3 The pipe bed shall be compacted and shaped to receive the bottom of the pipe.
 - 4 Pipe culvert frost treatment shall be according to OPSD 803.030 and 803.031.
 - 5 Condition of excavation is symmetrical about centreline of pipe.
- A Soil types as defined in the Occupational Health and Safety Act and Regulations for Construction Projects.
- B All dimensions are in metres unless otherwise shown.

LEGEND:

D – Inside diameter
 OD – Outside diameter

CLEARANCE TABLE	
Pipe Inside Diameter mm	Clearance mm
900 or less	300
Over 900	500

ONTARIO PROVINCIAL STANDARD DRAWING

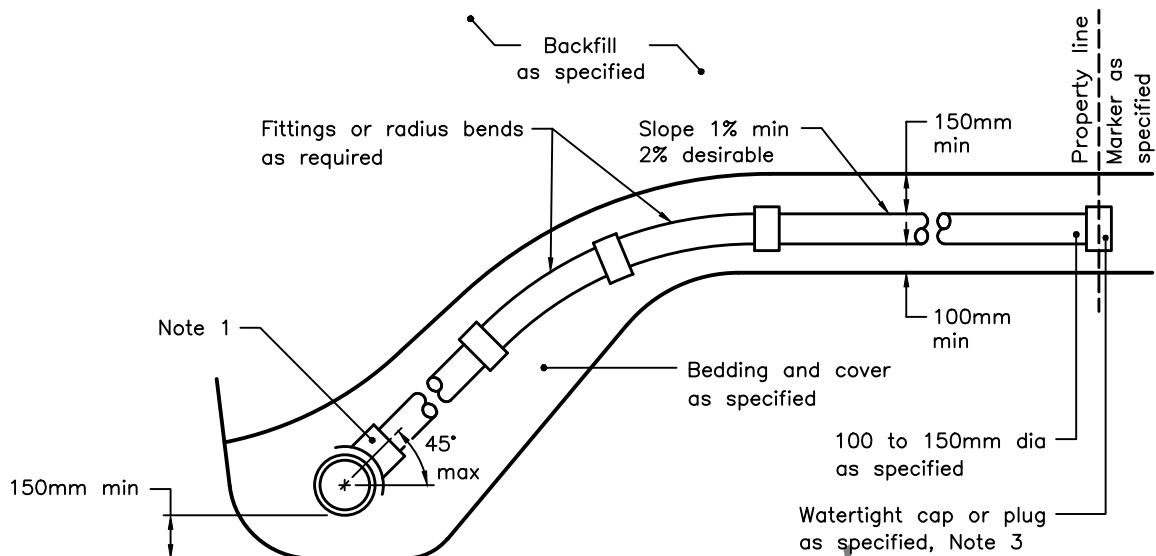
Nov 2015

Rev 3

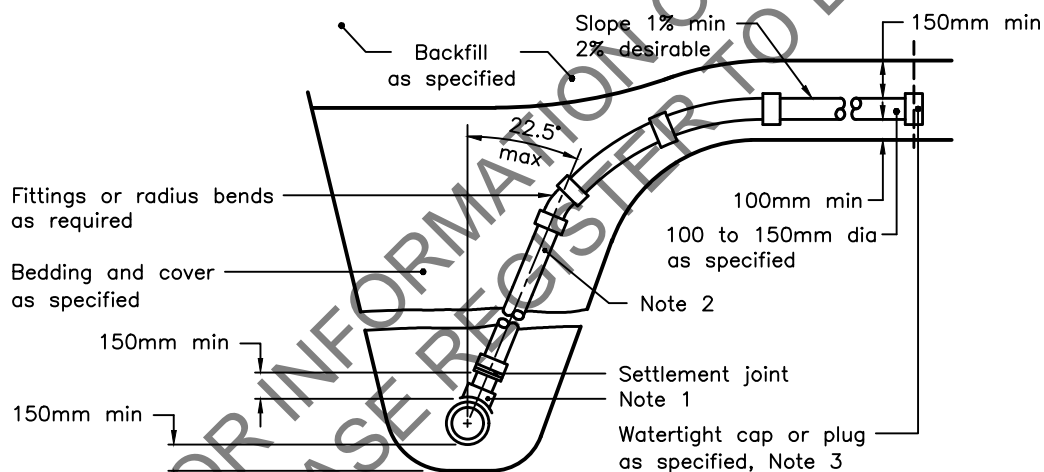
**RIGID PIPE BEDDING,
 COVER, AND BACKFILL
 TYPE 1 OR 2 SOIL – EARTH EXCAVATION**

OPSD 802.030





CONNECTION WITHOUT VERTICAL RISER



CONNECTION WITH VERTICAL RISER

NOTES:

- 1 Sewer service connections to the main pipe sewer shall be made using factory made tees, strap-on-saddles, or other approved saddles.
- 2 Vertical risers shall be as specified.
- 3 Cap or plug at property line shall be adequately braced.
- A Maintenance holes shall be used at the main sewer to connect service connections greater than 200mm.
- B For new construction, saddles shall be installed on the main pipe before that pipe is laid.
- C Approved cut-in tool shall be used for field made connections.
- D All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

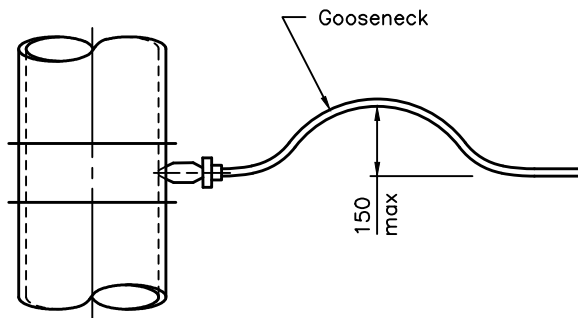
Nov 2021

Rev 4

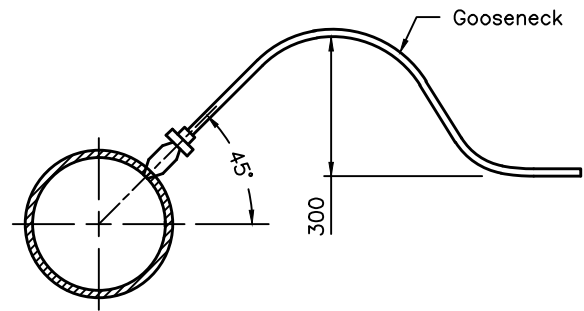
SEWER SERVICE CONNECTIONS FOR MAIN PIPE SEWER

OPSD 1006.010

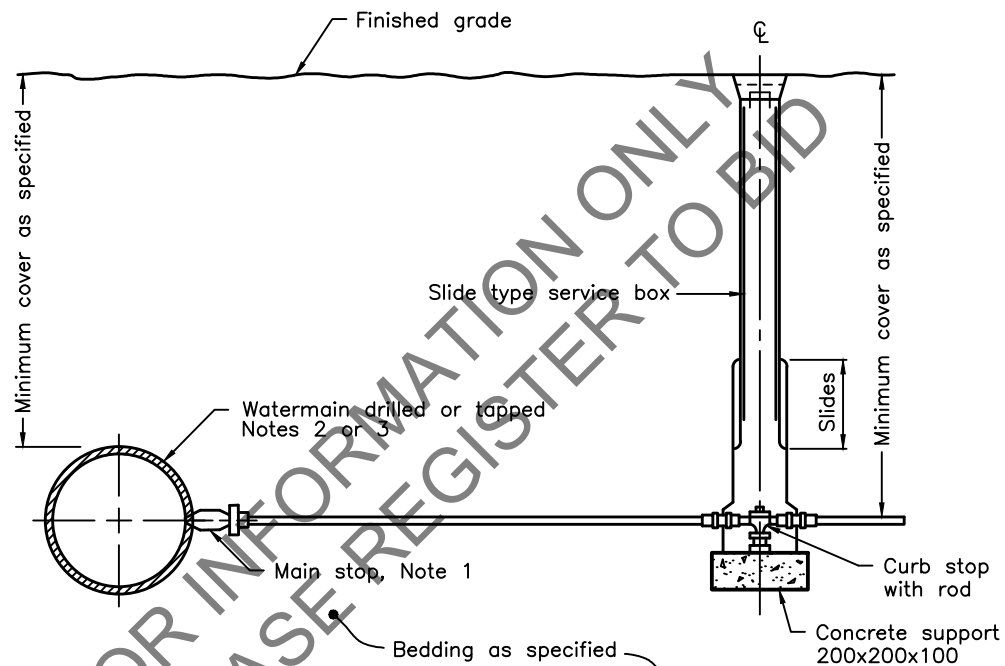




HORIZONTAL GOOSENECK



VERTICAL GOOSENECK OPTION



VERTICAL SECTION

NOTES:

- 1 For plastic service pipes, install main stop at 15° above horizontal with a minimum 1.2m long gooseneck.
- 2 Direct tap ductile iron pipe with approved tool with standard AWWA inlet thread.
- 3 Service connections to plastic watermain shall be made using service saddles or factory made tees.
- A When specified, the vertical gooseneck option shall be used.
- B Couplings shall not be permitted unless the service length exceeds 20m between the main stop and curb stop.
- C All water services shall be installed 90° to the longitudinal axis of the watermain.
- D Backfill material within 500mm of service box shall be native or imported, as specified.
- E All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2018

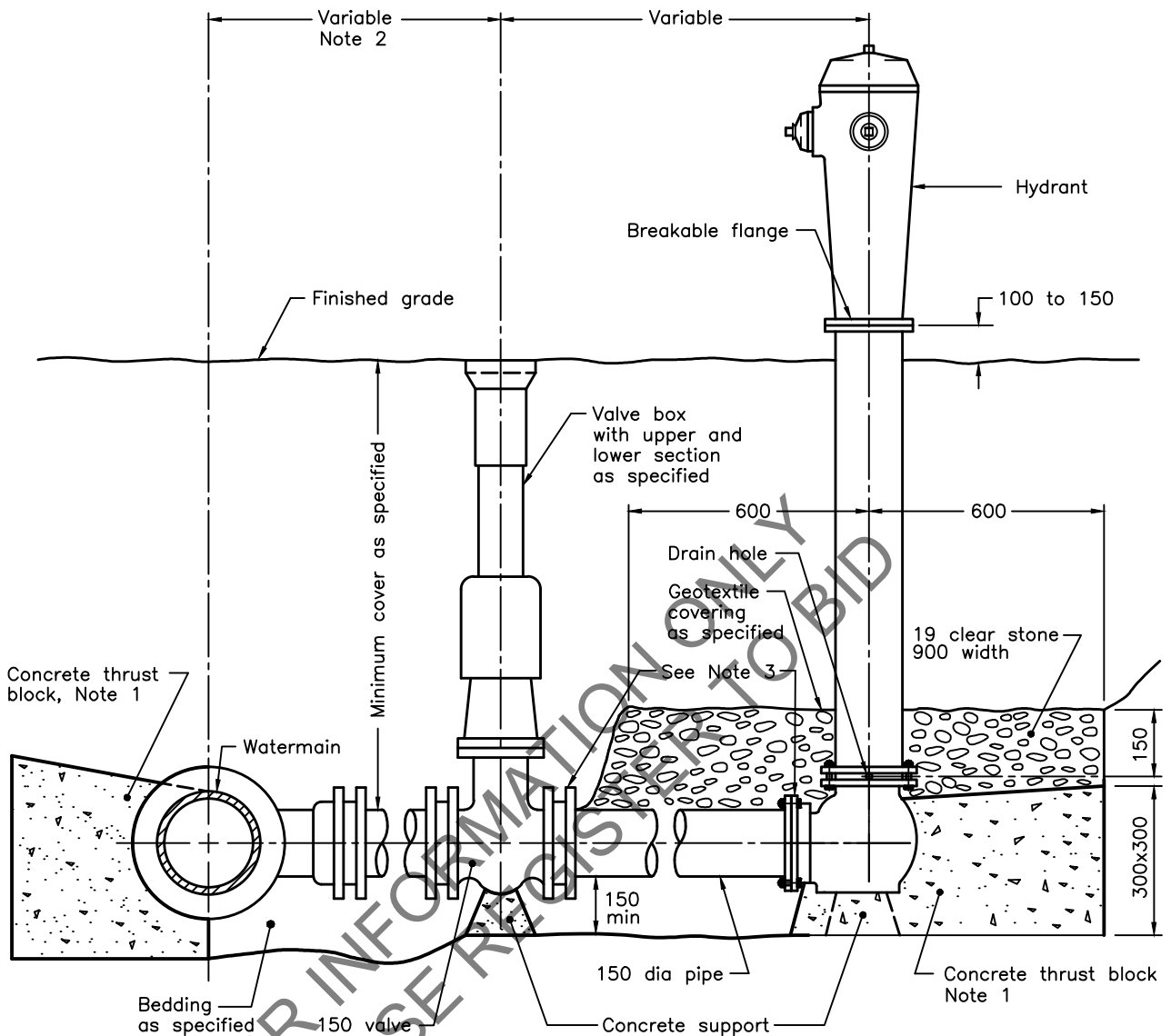
Rev 4

**WATER SERVICE
CONNECTION**

19 and 25mm DIAMETER SIZES

OPSD 1104.010





NOTES:

- 1 All concrete thrust blocks shall be poured against undisturbed ground.
 - 2 When specified, for watermains 400mm and less, locate valve within 1.0m of centreline of watermain. Retaining and restraining devices shall be utilized. For watermains 600mm and over, bolt valve with flanged end directly to flanged tee.
 - 3 Retaining and restraining devices shall be as specified.
- A Bond breaker shall be used between the concrete and the fittings and appurtenances.
- B Bolts and nuts for buried flange to flange connections shall be stainless steel.
- C When required, flange of standpipe extensions shall not be in frost zone.
- D This OPSD shall be read in conjunction with OPSD 1103.010 and 1103.020.
- E Backfill material within 500mm of service box shall be native or imported, as specified.
- F Tracer wire shall be installed as specified.
- G All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING

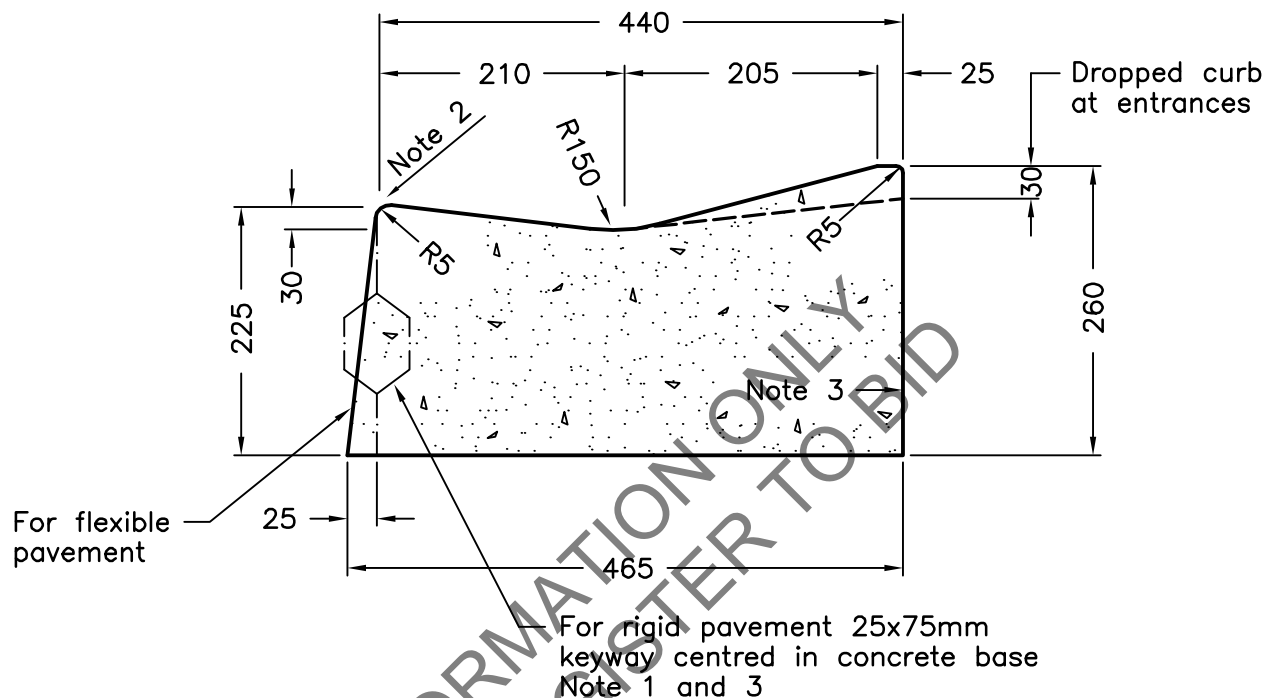
Nov 2018

Rev 3

HYDRANT INSTALLATION

OPSD 1105.010





NOTES:

- 1 When curb and gutter is adjacent to concrete pavement or base, this drawing shall be used in conjunction with OPSD 552.010 and 552.020.
 - 2 Flexible and composite pavement shall be placed 5mm above the adjacent edge of gutter.
 - 3 For slipforming procedure a 5% batter is acceptable.
- A Treatment at entrances shall be according to OPSD 351.010.
- B Outlet treatment shall be according to the OPSD 610 Series.
- C The transition from one curb type to another shall be a minimum length of 3.0m, except in conjunction with guide rail where it shall be according to the OPSD 900 Series.
- D All dimensions are in millimetres unless otherwise shown.

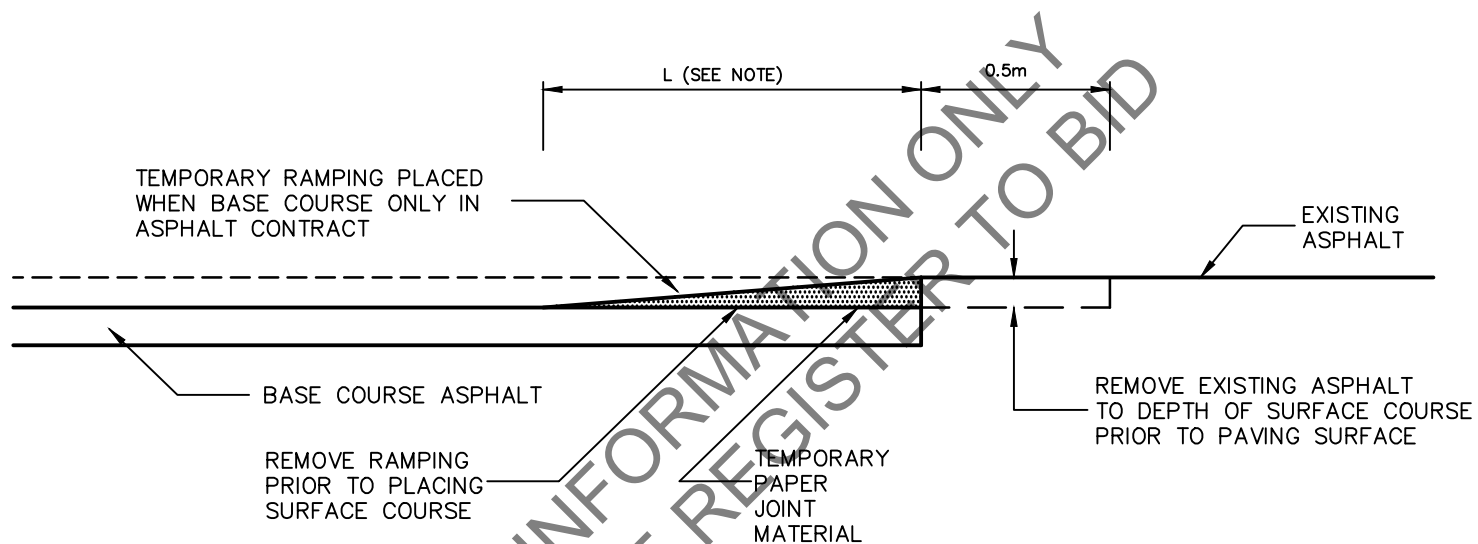
ONTARIO PROVINCIAL STANDARD DRAWING

Nov 2012 Rev 2

**CONCRETE MOUNTABLE CURB
WITH NARROW GUTTER**

OPSD 600.100





NOTES

1. FOR < 70km POSTED SPEED LIMIT, L = 1.0m
2. FOR > 70km POSTED SPEED LIMIT, L = 1.5m



BMROSS
engineering better communities

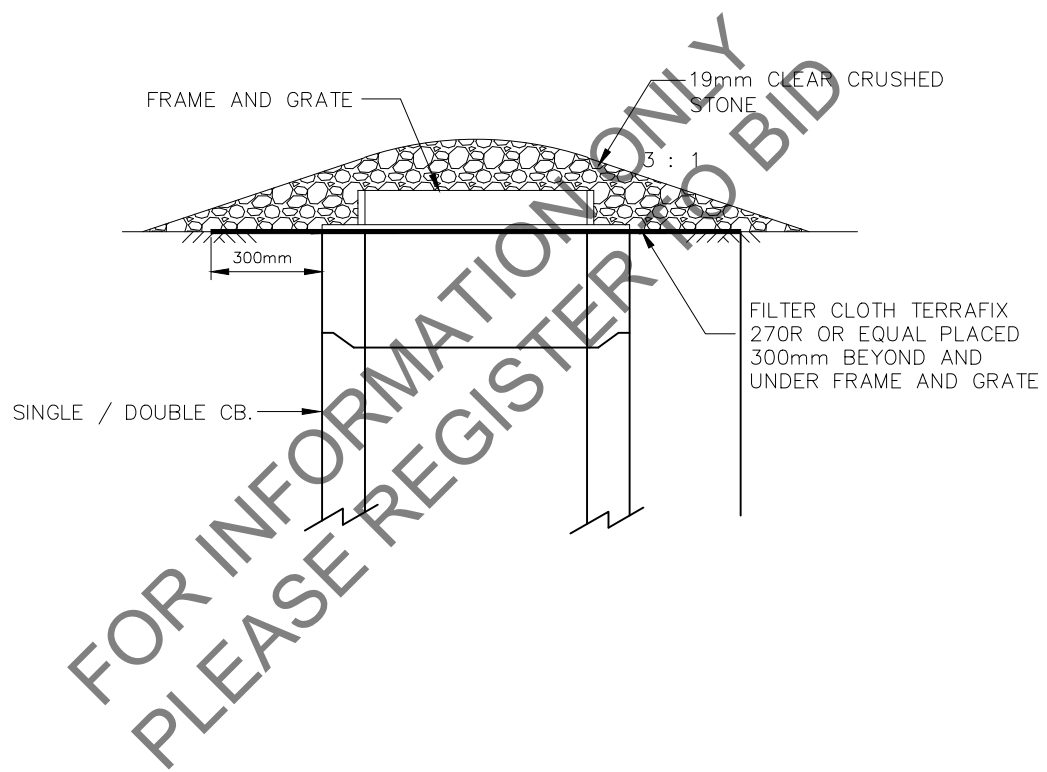
BMROSS STANDARD DRAWING

Asphalt Joint Detail for
Transverse Joints

DATE OF REVISION - June, 2023

SCALE : N.T.S.

DRAWING No. 208



BMROSS
engineering better communities

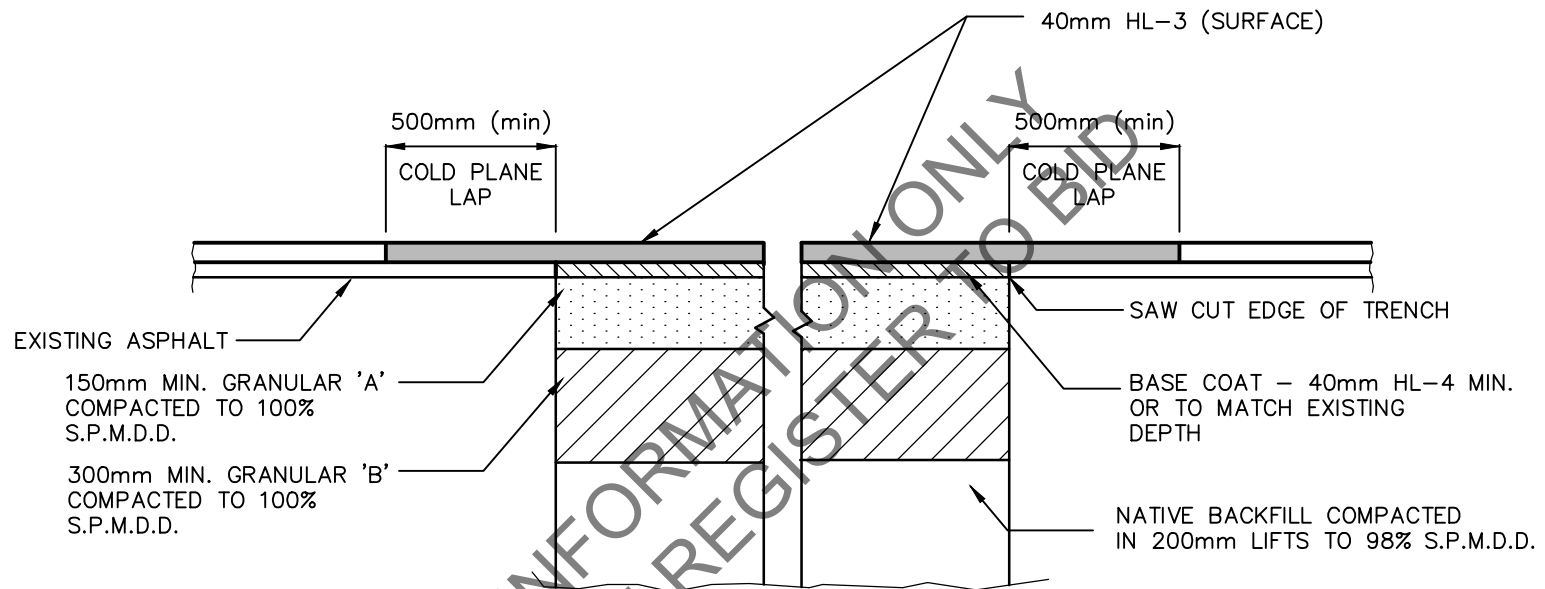
BMROSS STANDARD DRAWING

Sediment Filter on Catch Basin
Temporary Installation

DATE OF REVISION - May 2025

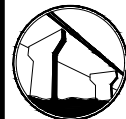
SCALE : N.T.S.

DRAWING No. 222



NOTES:

1. WHERE THE EXISTING ASPHALT IS GREATER THAN 100mm IN DEPTH - A DOUBLE LAP IS REQUIRED.



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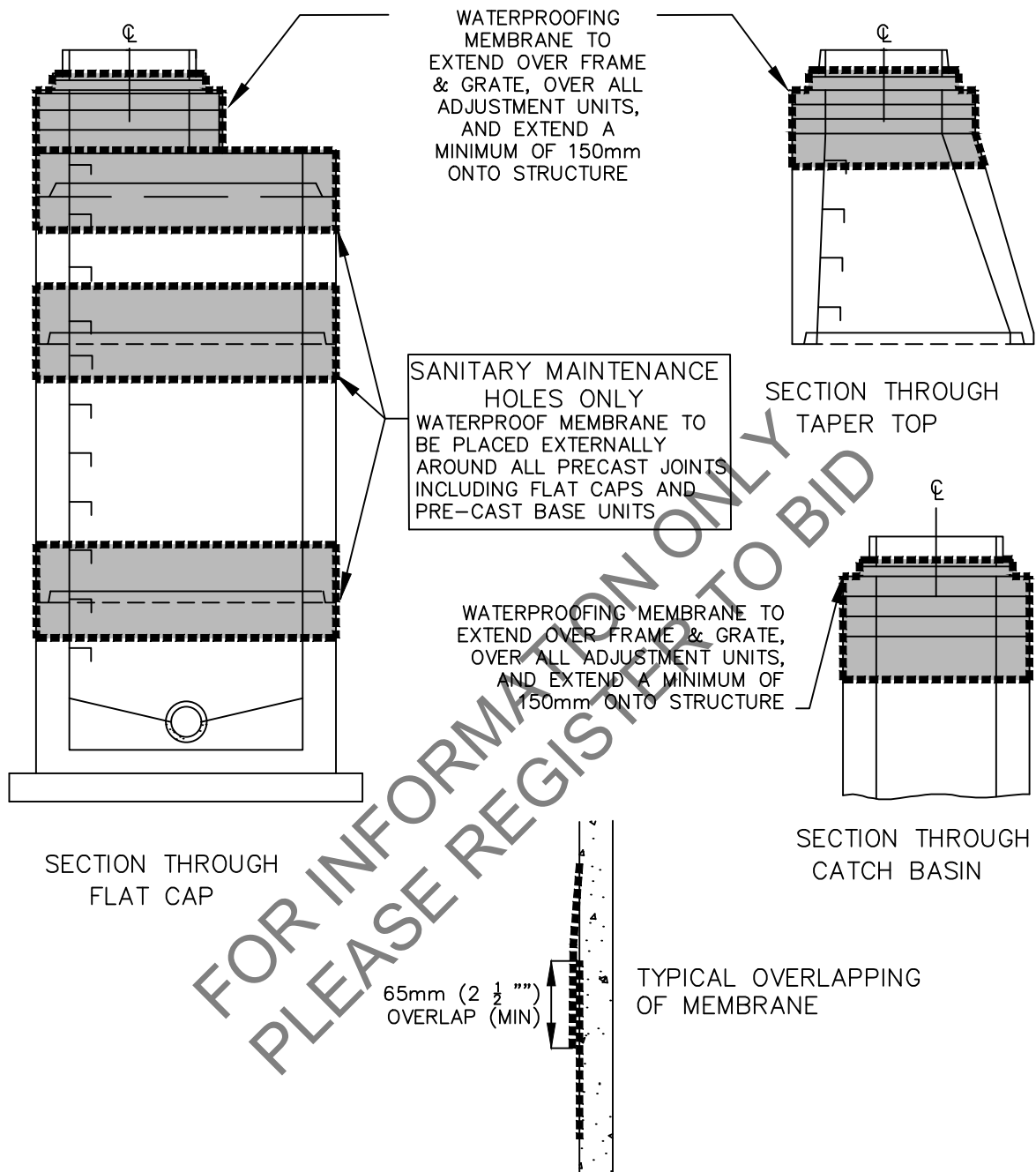
BMROSS STANDARD DRAWING

Trench Reinstatement
Native Backfill

DATE OF REVISION - May 2025

SCALE : N.T.S.

DRAWING No. 501



NOTES:

1. WATERPROOFING MEMBRANE SHALL BE INSTALLED ON CLEAN, DRY, SMOOTH SURFACES THAT ARE ALSO FREE FROM VOIDS.
2. SPALLED AREAS TO BE REPAIRED, VOIDS TO BE FILLED AND SHARP PROTRUSIONS REMOVED PRIOR TO INSTALLATION.
3. PRIOR TO INSTALLATION OF WATERPROOFING MEMBRANES, THE SURFACES SHALL BE PRIMED USING APPROPRIATE PRIMER MATERIAL FOR THE WATERPROOFING MEMBRANE.
4. SANITARY MAINTENANCE HOLES ONLY, WATERPROOF MEMBRANE TO BE PLACED EXTERNALLY AROUND ALL PRECAST JOINTS, WITH A MINIMUM 300mm WIDE STRIP.
5. REFER TO BMROSS STANDARD DRAWING No. 719 FOR FRAME AND GRATE INSTALLATION



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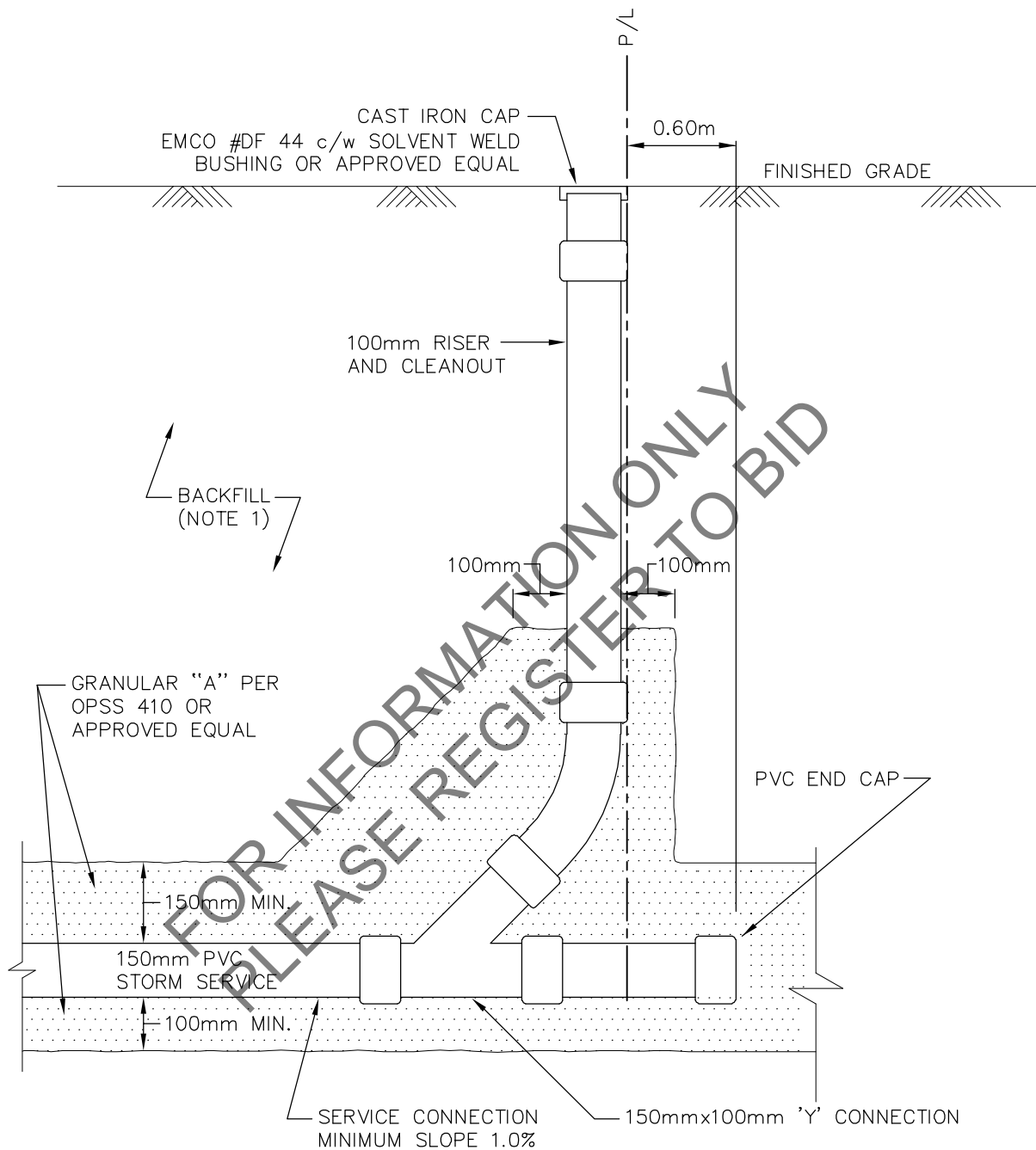
BMROSS STANDARD DRAWING

WATERPROOFING MEMBRANE
STORM AND SANITARY STRUCTURES

DATE OF REVISION - APRIL 2025

SCALE : N.T.S.

DRAWING No. 720



NOTE:

1. BACKFILL OF SERVICE UNDER THE ROAD PLATFORM SHALL MATCH THE MAIN LINE STORM SEWER BACKFILL. BACKFILL BEYOND THE ROAD PLATFORM SHALL BE GRANULAR MATERIAL COMPACTED TO A MINIMUM DRY DENSITY OF 100%. BACKFILL SHALL BE PLACED IN UNIFORM LAYERS NOT EXCEEDING 300mm IN THICKNESS FOR THE FULL WIDTH OF THE TRENCH AND COMPACTED TO THE SPECIFIED DENSITY BEFORE A SUBSEQUENT LAYER IS PLACED



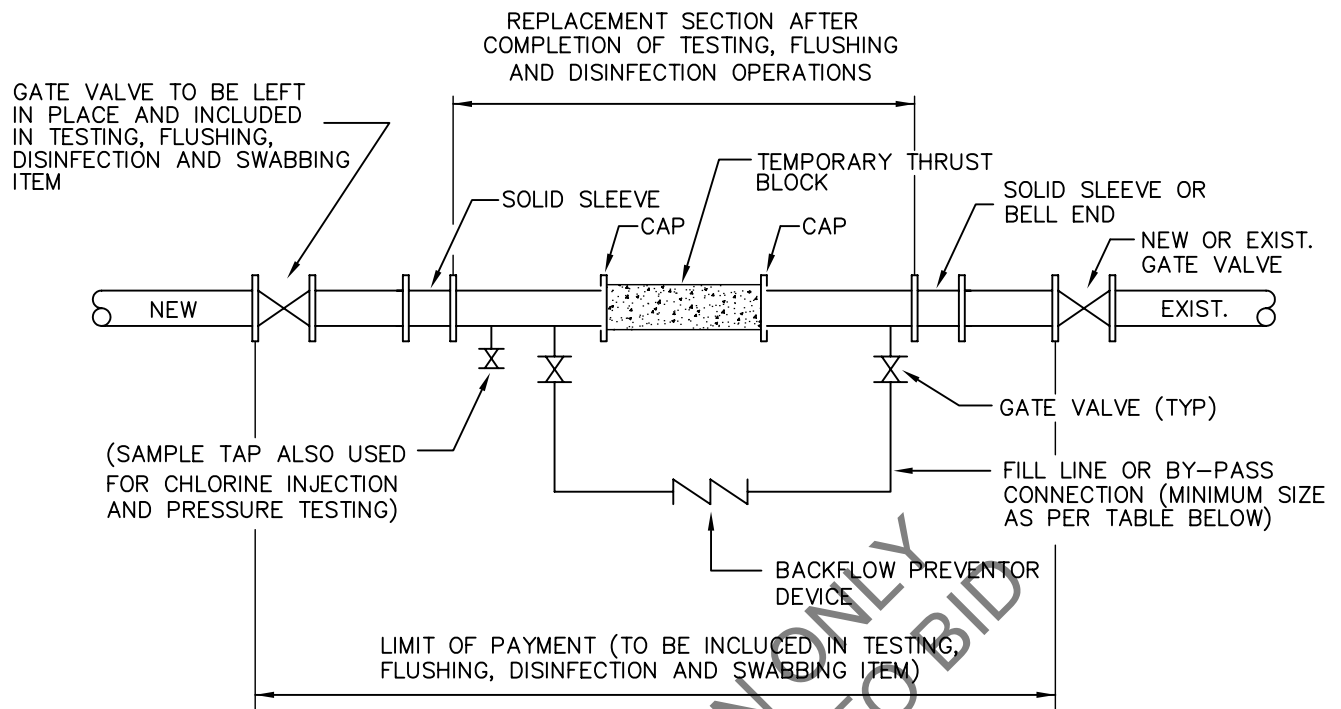
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BMROSS STANDARD DRAWING

150mm Storm Service Cleanout Detail

SCALE : N.T.S.

DRAWING No. 1000C



PIPE DIAMETER	FLOW REQUIRED TO PRODUCE 0.76m/s (APPROX) VELOCITY IN MAIN	SIZE OF TAP (mm)			NUMBER OF OPEN 64mm HYDRANT OUTLETS
		25	38	51	
mm	l/s	NUMBER OF TAPS ON PIPES			
100	6.3	1	—	—	1
150	12.6	—	1	—	1
200	25.2	—	2	1	1
250	37.9	—	3	2	1
300	56.8	—	—	2	2
400	109.9	—	—	4	2



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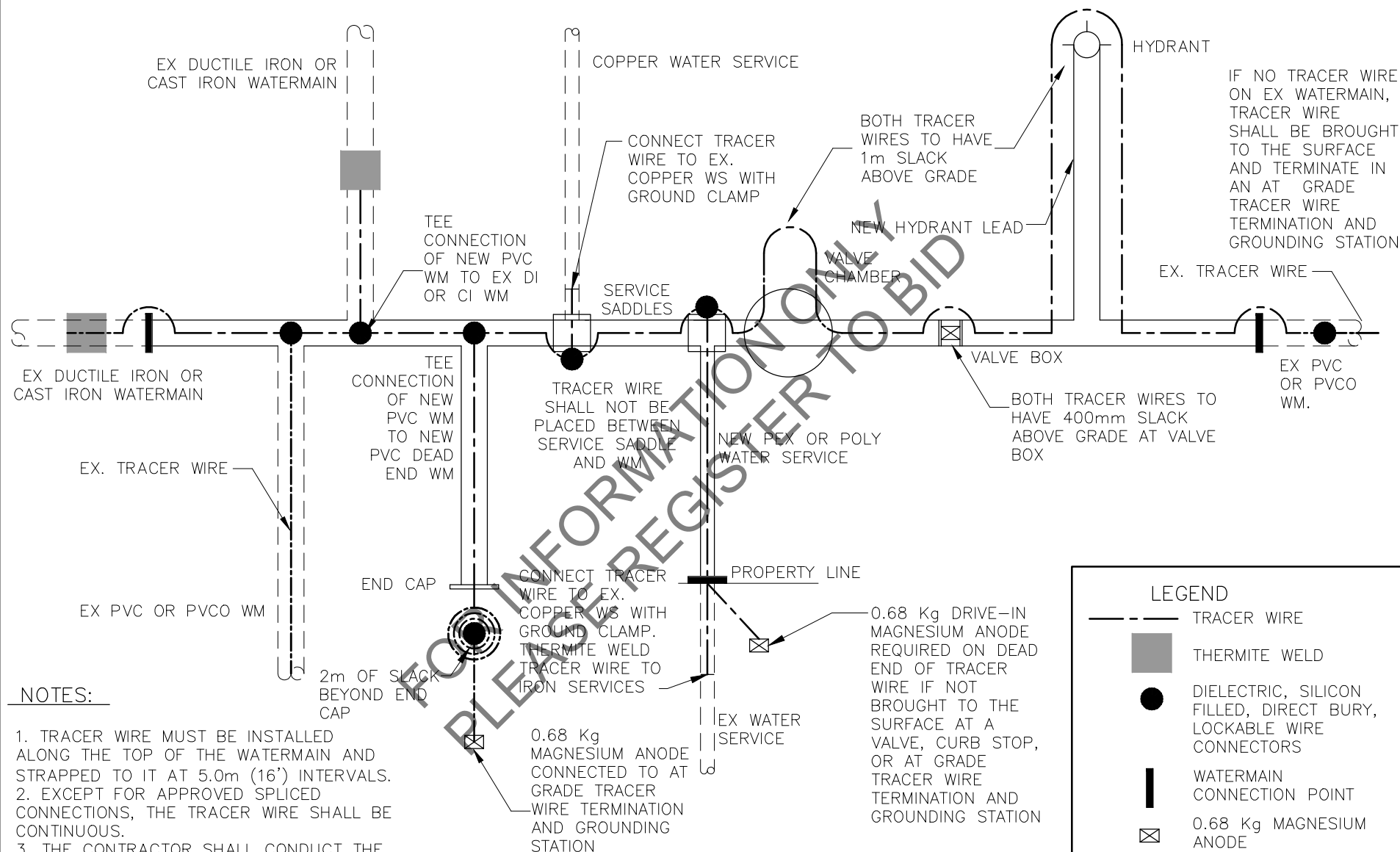
BMROSS STANDARD DRAWING

Temporary Watermain Connection
Typical Configuration

DATE OF REVISION - Jan, 2004

SCALE : N.T.S.

DRAWING No. 1101



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BMROSS STANDARD DRAWING

Watermain Tracer Wire
Installation Procedure

DATE OF REVISION - NOV. 2020

SCALE : N.T.S.

DRAWING No. 1114

Y-STRAINER ON INLET SIDE (RECOMMENDED FOR
CLEANING ANY POSSIBLE DEBRIS THAT MAY OCCUR)

HYDRANT

GATE
VALVE

REDUCED PRESSURE ZONE
BACK FLOW DEVICE
(SIZE ON SIZE)

MIN.
DISTANCE
FROM
GROUND
750mm

SUPPORT
AS
NEEDED

REMOVABLE
SPOOL PIECE
WITH VICTAULIC
COUPLING

FILLING POINT
(1" BALL VALVE)

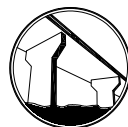
FINISHED GRADE

MAXIMUM DISTANCE APART = 20m

EXISTING MAIN

TEMPORARY
CONTROL
VALVE

NEW MAIN



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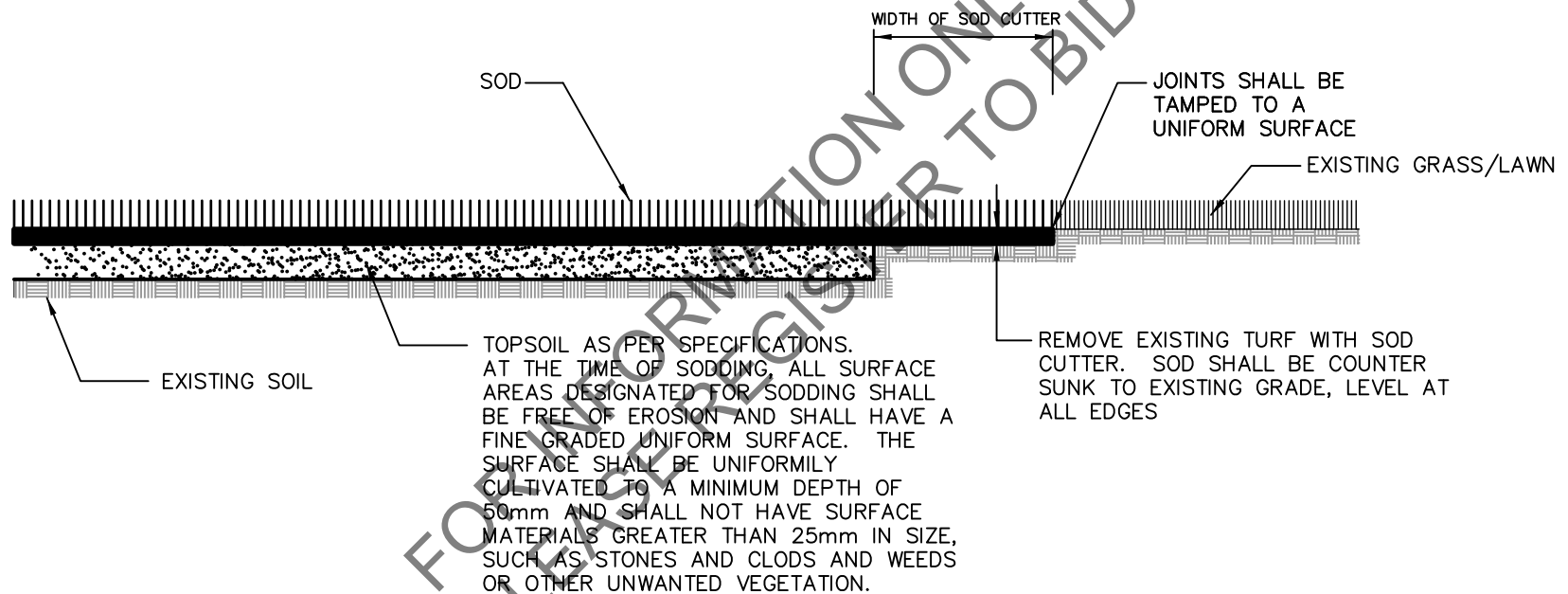
BMROSS STANDARD DRAWING

Temporary Connection from a Hydrant
With CSA Certified Reduced Pressure
Principle Backflow Preventer

DATE OF REVISION - Nov. 2020

SCALE : N.T.S.

DRAWING No. 1115



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BMROSS STANDARD DRAWING

Sod Placement Detail

DATE OF REVISION - Nov, 2018

SCALE : N.T.S.

DRAWING No. 9001

TOWN OF PLYMPTON-WYOMING

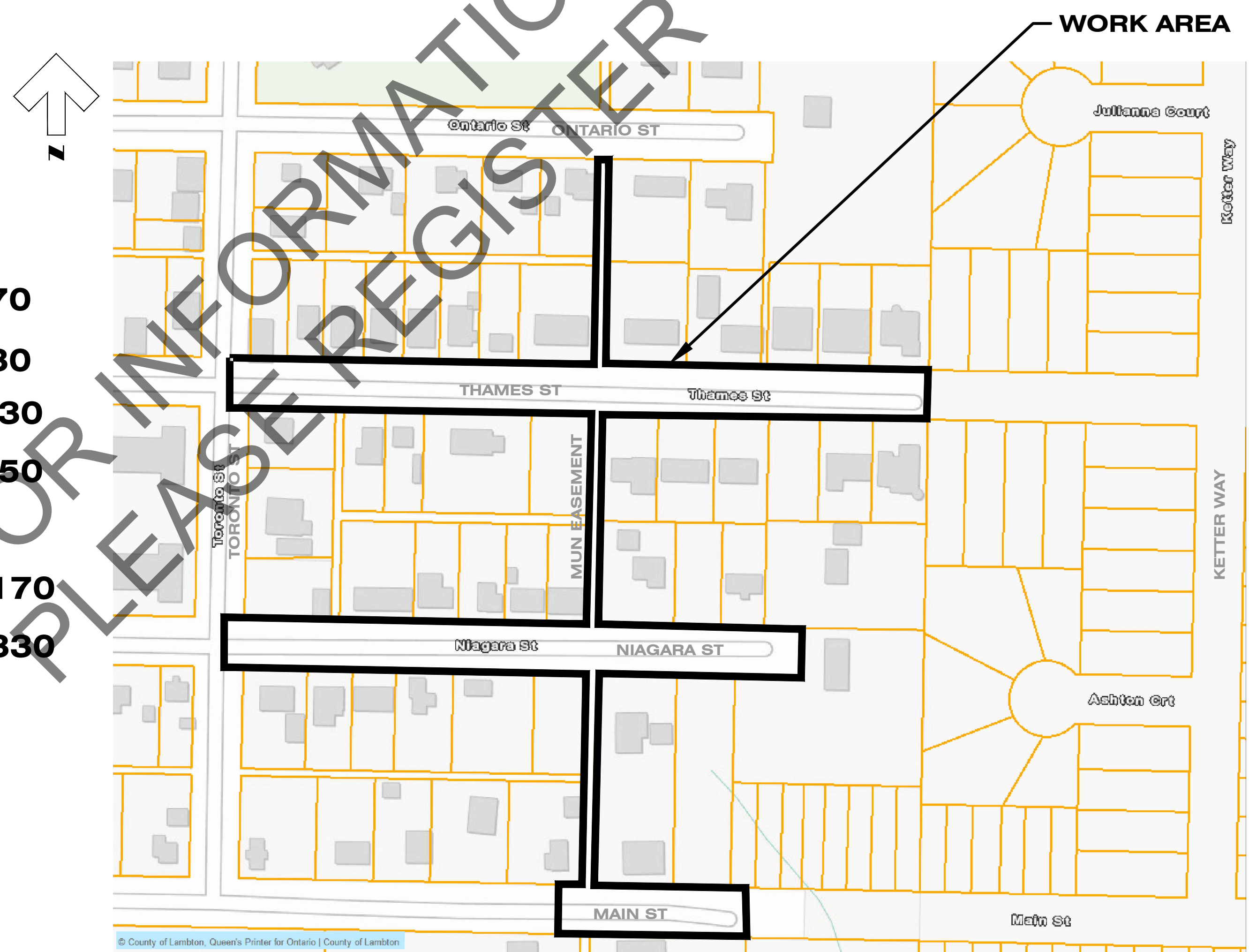
THAMES ST EAST RECONSTRUCTION

NIAGARA ST EAST RECONSTRUCTION

BARNES MUN. DRAIN REPLACEMENT

PROJECT No. 23245

DWG No.	STREET
1	THAMES STREET, STA. 2+000 TO STA. 2+170
2	THAMES STREET, STA. 2+170 TO STA. 2+330
3	NIAGARA STREET, STA. 3+000 TO STA. 3+130
4	NIAGARA STREET, STA. 3+130 TO STA. 3+250
5	MAIN STREET, STA. 1+000 TO 1+120
6	MUNICIPAL EASEMENT, STA. 0+000 TO 0+170
7	MUNICIPAL EASEMENT, STA. 0+170 TO 0+330
8	SECTION & DETAILS SHEET



KEY PLAN

N.T.S.



Feb, 2026
Issued For Tender



- NOTES:
1. WATERMAIN AND SEWERS INSTALLED IN PARALLEL TO HAVE A MINIMUM SEPARATION FROM OF 2.5m HORIZONTAL FROM PIPE EDGE TO PIPE EDGE. FOR CROSSING LOCATIONS WATERMAINS SHALL PASS OVER SEWERS. WHERE WATERMAIN MUST PASS UNDER SEWER TO ACHIEVE FROST PROTECTION 0.5m VERTICAL SEPARATION IS REQUIRED.
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 3. CONTRACTOR SHALL FULLY PROTECT AND SUPPORT UTILITIES, POLES, SEWERS, WATERMAINS AND SERVICES DURING CONSTRUCTION.
 4. NO WATER SERVICE COUPLERS WILL BE PERMITTED BETWEEN MAIN STOP AND CURB STOP.
 5. PROPOSED WATER SERVICE SIZES ARE 25mm CTS PEX PIPE UNLESS NOTED OTHERWISE AND TO BE INSTALLED USING OPEN CUT TRENCHES UNLESS NOTED OTHERWISE.
 6. ENBRIDGE WILL DEFLECT SECTIONS OF GASMAIN AND SERVICES WHERE THESE ARE IDENTIFIED TO BE IN CONFLICT WITH THE BARNES DRAIN AND STORM SEWERS. WORK IS SCHEDULED TO BEGIN IN APRIL 2026 AND IS TO BE COMPLETED BY EARLY MAY 2026.

EXISTING C.B. DATA			
No.	Station	O/S	Info
CB-138	2+060.60	RT	CONC REMOVE
CBMH-1	2+063.60	LT	CONC REMOVE

PROPOSED C.B. DATA					
No.	Station	O/S	Desc.	Grate	T/Grate
DCB1	2+073.50	LT	705.020	400.020	214.478
DCB2	2+073.50	RT	705.020	400.020	214.475
CB3	2+120.00	LT	705.010	400.020	215.150
CB4	2+142.30	LT	705.010	400.020	214.900

PROPOSED C.B. LEADS DATA					
No.	Size	Type	Class	Length	
DCB1	250mm	PVC	DR35	1.0m	
DCB2	250mm	PVC	DR35	7.5m	
CB3	150mm	PVC	DR28	5.0m	
CB4	150mm	PVC	DR28	5.0m	

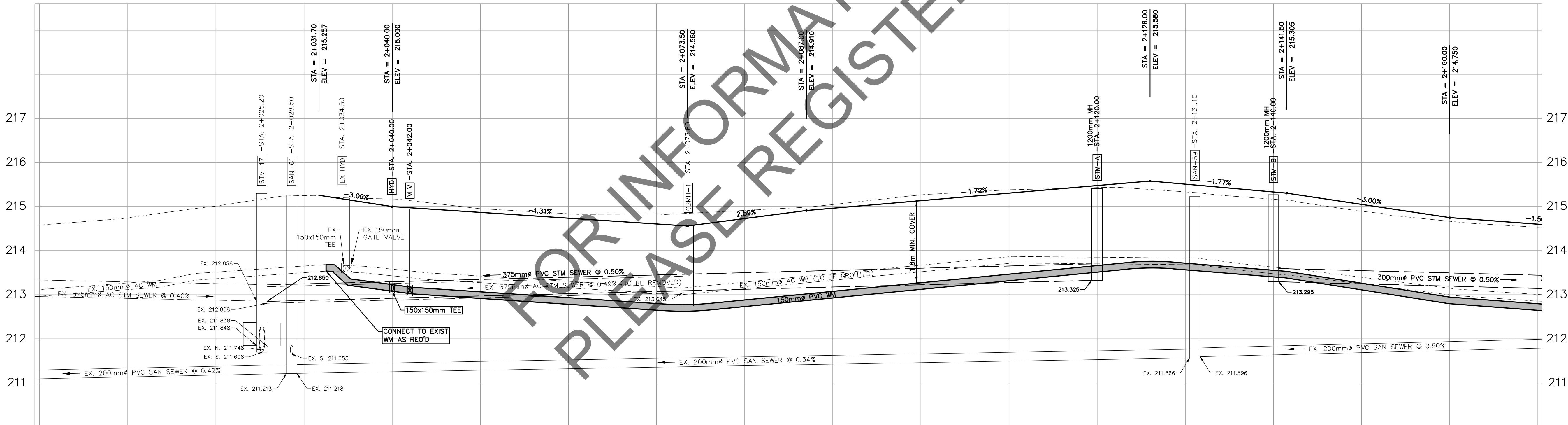
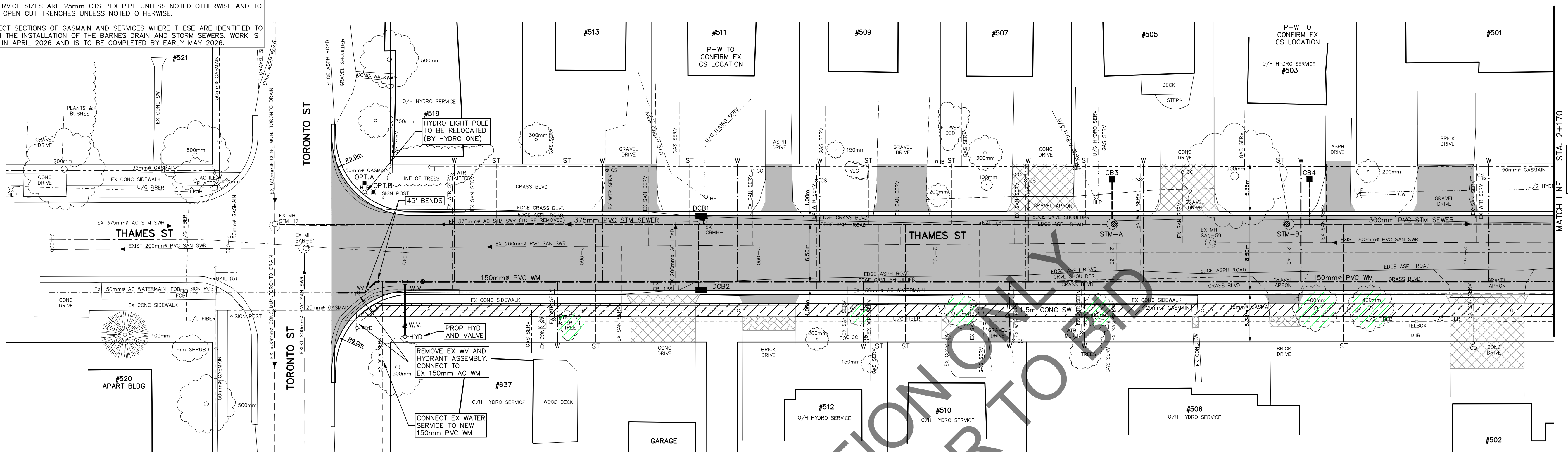
EXISTING STORM M.H. DATA				
No.	Station	O/S	Material	Info
STM-17	2+017.70	RT	CONC	KEEP

PROPOSED STORM M.H. DATA					
No.	Station	O/S	Desc.	Grate	T/Grate
STM-A	2+120.00	LT	701.010	401.010	215.410
STM-B	2+140.00	LT	701.010	401.010	215.265

*ALL STORM MH'S TO BE BENCHD

EXISTING STORM SEWER DATA				
No. to No.	Size	Type	Length	Info
STM-17 - CBMH-1	375mm	AC	48.0m	REMOVE

PROPOSED STORM SEWER DATA				
No. to No.	Size	Type	Class	Length
STM-17 - STM-A	375mm	PVC	DR35	94.8m
STM-B - STM-H	300mm	PVC	DR35	40.5m



PROP GRADE	214.561	214.745	215.012	215.249	215.171	214.952	214.837	214.830	214.913	215.047	215.264	215.381	215.430	215.333	215.166	214.895	214.667	214.534
PROP WATERMAIN	EX 150mm AC WATERMAIN																	
PROP STORM SEWER	EX 375mm AC STORM SEWER @ 0.40% 94.8m OF 375mm STORM SEWER @ 0.50% PVC DR 35 BEDDING PER OPSD-802.010 OPEN CUT INSTALLATION																	
EXISTING SANITARY SEWER	EX 200mm PVC SANITARY SEWER @ 0.42% EX 200mm PVC SANITARY SEWER @ 0.34% EX 200mm PVC SANITARY SEWER @ 0.50%																	
EXISTING GRADE	214.561	214.745	215.012	215.249	215.171	214.952	214.837	214.830	214.913	215.047	215.264	215.381	215.430	215.333	215.166	214.895	214.667	214.534
STATION	2+000	2+010	2+020	2+030	2+040	2+050	2+060	2+070	2+080	2+090	2+100	2+110	2+120	2+130	2+140	2+150	2+160	2+170

LEGEND

- SAN. or STM. ---
- M.H. CB ---
- WATERMAIN, ---
- UNDERGROUND TELEPHONE ---
- UNDERGROUND HYDRO ---
- UNDERGROUND T.V. CABLE ---
- UTILITY POLES ---
- TREE REMOVAL AND GRUBBING ---
- REPLACE CONCRETE SIDEWALK ---
- REPLACE CONCRETE DRIVEWAYS ---
- REPLACE BRICK DRIVEWAYS ---
- PLACE HOT MIX ASPHALT (ROADS 40mm H.L.S. & 50mm H.L.4 HOT MIX) (DRIVEWAYS 50mm H.L.3 HOT MIX MISC.)

NOTE

The locations of existing underground utilities are shown in an approximate way only and have not been independently verified by the owner or its representative. The contractor shall determine the exact location of all existing utilities before commencing work and agrees to be fully responsible for any damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.

BENCHMARK INFORMATION

B.M. Elev. 215.558
Top spindle of fire hydrant located in the south boulevard between Mun#486 and #488 Thames St.

B.M. Elev. 215.580
Top spindle of fire hydrant located at the south-east corner of the intersection between Thames St and Toronto St.

Design By: T.G.M. Checked By: A.E.M.

PROFESSIONAL ENGINEER
FEB/5/2026
A.R. ESTRADA MORFIN
100221004
PROVINCE OF ONTARIO

PROFESSIONAL ENGINEER
02-05-2026
T.G. MILLAR
100556914
PROVINCE OF ONTARIO

No.	DATE	REVISION
1	FEB-24	ISSUED FOR MEETING #1
2	JUL-25	ISSUED FOR REVIEW
3	JAN-26	ISSUED FOR DRAINAGE ACT
4	FEB-26	ISSUED FOR TENDER

BMROSS
engineering better communities

Goderich Mount Forest Sarnia

Town of Plympton-Wyoming (Wyoming)

Thames St East Reconstruction

Thames Street

Plan and Profile from
Sta. 2+000 to Sta. 2+170

Project No.
23245

Scale (24x36)
Horizontal : 1:250
Vertical : 1:50

Drawing No.
1 of 8

EXISTING C.B. DATA					PROPOSED C.B. DATA					PROPOSED C.B. LEADS DATA					EXISTING STORM M.H. DATA					EXISTING STORM SEWER DATA								
No.	Station	O/S	Material	Info	No.	Station	O/S	Desc.	Grate	T/Grate	No.	Size	Type	Class	Length	No.	Station	O/S	Desc.	Grate	T/Grate	No.	to No.	Size	Type	Class	Length	Info
IFCB-1	2+184.50	RT	CONC	REMOVE	CB5	2+177.00	LT	705.010	400.020	214.410	CB5	200mm	PVC	DR35	1.0m	STM-367	2+249.30	RT	CONC	KEEP	REMOVE	STM-367	2+249.30	RT	CONC	KEEP	REMOVE	
IFCB-2	2+204.90	LT	CONC	REMOVE	CB6	2+177.00	RT	705.010	400.020	214.410	CB6	200mm	PVC	DR35	7.5m	STM-381	2+309.90	RT	CONC	KEEP	ALLEY	STM-367	200mm	CONC	48.0m	GROUT		
CB-163	2+252.40	LT	CONC	KEEP	CB7	2+214.50	LT	705.010	400.020	214.192	CB7	200mm	PVC	DR28	1.0m	STM-8A	2+312.60	RT	CONC	KEEP	STM-367	STM-381	375mm	CONC	60.0m	KEEP		
CB-125	2+252.40	RT	CONC	KEEP	CB8	2+214.50	RT	705.010	400.020	214.192	CB8	200mm	PVC	DR28	7.5m	STM-8	2+319.20	LT	CONC	KEEP	STM-381	STM-8	375mm	CONC	2.0m	KEEP		
CB-164	2+252.40	LT	CONC	KEEP																STM-8A	STM-8	375mm	CONC	11.0m	KEEP			
CB-124	2+252.40	RT	CONC	KEEP																								

SEE DWG 7

PROPOSED STORM M.H. DATA					PROPOSED STORM SEWER DATA						
No.	Station	O/S	Desc.	Grate	T/Grate	No.	to No.	Size	Type	Class	Length
STM-H	2+180.50	LT	701.011	401.010	214.380	STM-B	STM-H	300mm	PVC	DR35	40.5m
STM-C	2+232.50	LT	701.010	401.010	214.300	STM-C	STM-H	375mm	PVC	DR35	52.0m

*ALL STORM MH's TO BE BENCHD

NOTES:

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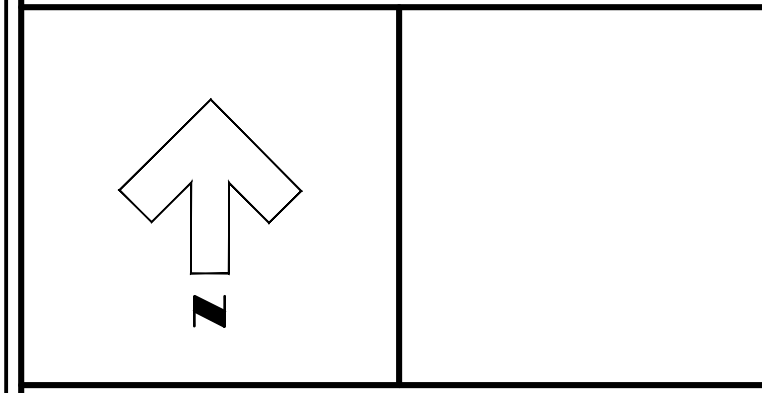
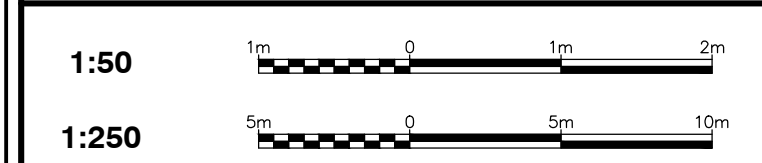
5. PROPOSED WATER SERVICE SIZES ARE 25mm cts PEX PIPE UNLESS NOTED OTHERWISE AND TO BE INSTALLED USING OPEN CUT TRENCHES UNLESS NOTED OTHERWISE.

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LEGEND

- SAN. or STM. (Symbol)
- SEWERS, SANITARY or STORM (Symbol)
- MANHOLE and CATCHBASIN (Symbol)
- WATERMAIN, (Symbol)
- FIRE HYDRANT (Symbol)
- GASMAIN (Symbol)
- UNDERGROUND TELEPHONE (Symbol)
- UNDERGROUND HYDRO (Symbol)
- UNDERGROUND T.V. CABLE (Symbol)
- UTILITY POLES (Symbol)
- TREE REMOVAL AND GRUBBING (Symbol)
- REPLACE CONCRETE SIDEWALK (Symbol)
- REPLACE CONCRETE DRIVEWAYS (Symbol)
- REPLACE BRICK DRIVEWAYS (Symbol)
- PLACE HOT MIX ASPHALT (ROADS 40mm H.L.S & 50mm H.L.4 HOT MIX) (Symbol)
- DRIVEWAYS 50mm H.L.3 HOT MIX (MISC.) (Symbol)



NOTE

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BENCHMARK INFORMATION

B.M. Elev. 216.084
Top spindle of fire hydrant located in the south boulevard between Mun#486 and #488 Thames St.

B.M. Elev. 215.580
Top spindle of fire hydrant located in the south boulevard between Mun#494 and #496 Thames St.

Design By: T.G.M. Checked By: A.E.M.



No.	DATE	REVISION
1	FEB-24	ISSUED FOR MEETING #1
2	JUL-25	ISSUED FOR REVIEW
3	JAN-26	ISSUED FOR DRAINAGE ACT
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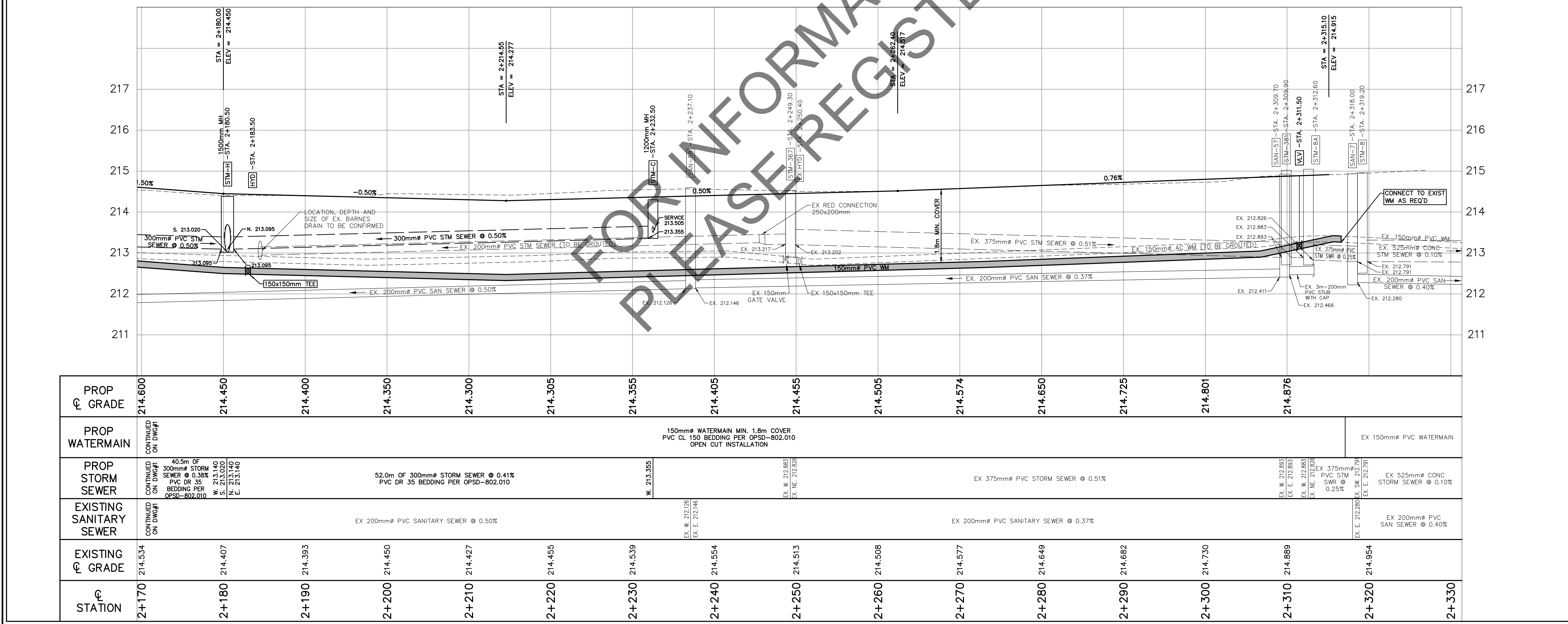


Goderich Mount Forest Sarnia



Town of Plympton-Wyoming (Wyoming)
Thames St East Reconstruction
Thames Street
Plan and Profile from
Sta. 2+170 to Sta. 2+330

Scale (24x36) Horizontal : 1:250 Vertical : 1:50	Project No. 23245
	Drawing No. 2 of 8



- NOTES:
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EXISTING C.B. DATA			
No.	Station	O/S	Material
CB-2	3+035.00	BLVD	CONC
CB-1	3+066.80	LT	CONC
CBMH-2	3+066.80	RT	CONC
CB-3	3+078.50	BLVD	CONC

PROPOSED C.B. DATA			
No.	Station	O/S	Material
DCB9	3+065.30	LT	705.020
DCB10	3+065.30	RT	705.020
CB11	3+111.00	LT	705.010
CB12	3+111.00	RT	705.010

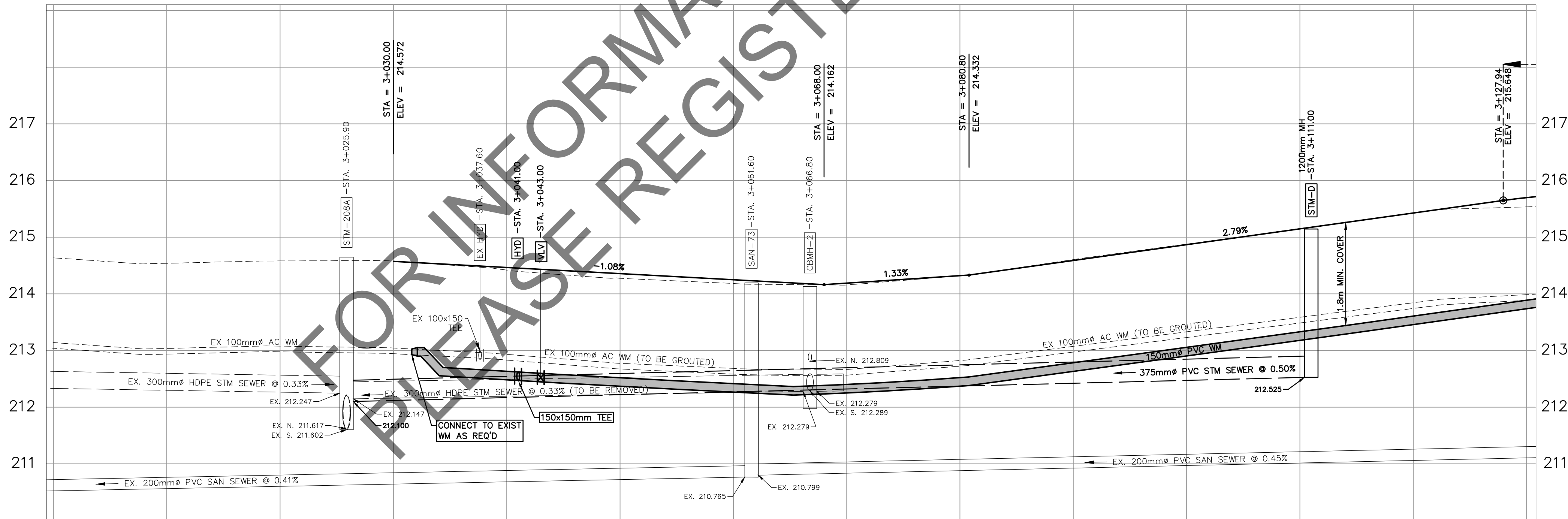
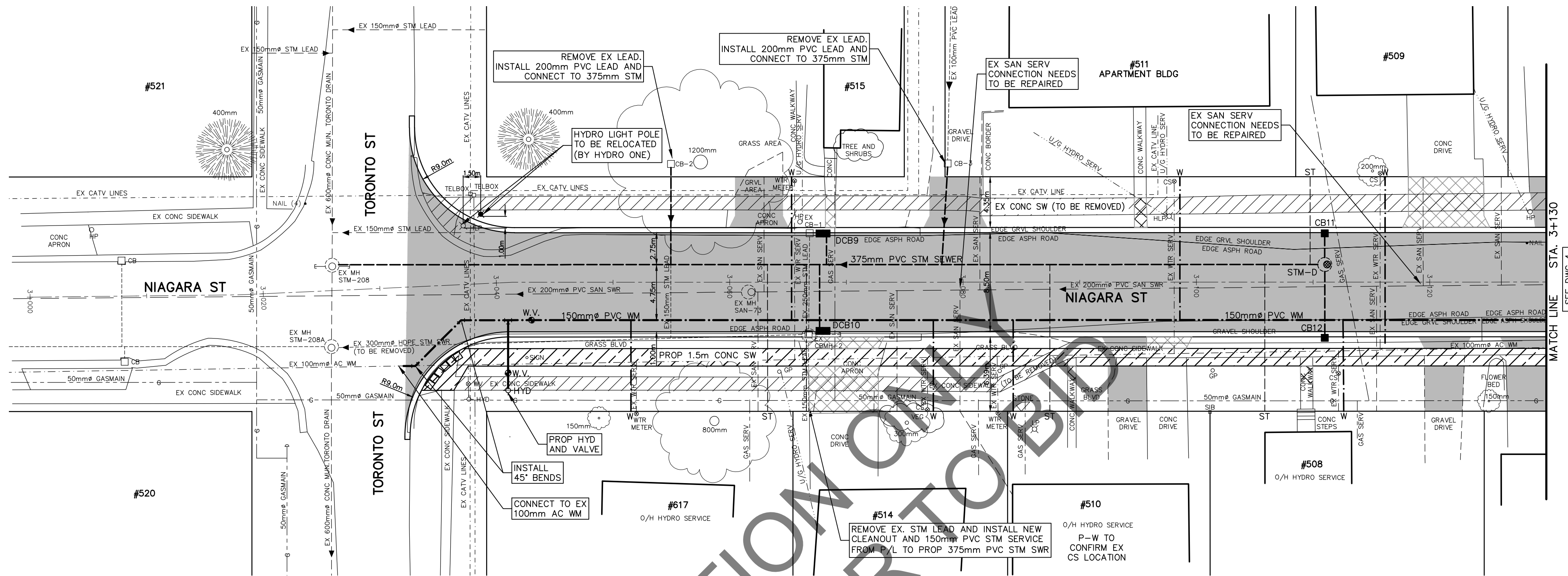
PROPOSED C.B. LEADS DATA			
No.	Size	Type	Length
DCB9	250mm	PVC	DR35
DCB10	250mm	PVC	DR35
CB11	200mm	PVC	DR28
CB12	200mm	PVC	DR28

EXISTING STORM M.H. DATA			
No.	Station	O/S	Material
STM-208	3+025.90	LT	CONC
STM-208A	3+025.90	RT	CONC

PROPOSED STORM M.H. DATA			
No.	Station	O/S	Material
STM-D	3+111.00	LT	701.010
STM-D	3+111.00	RT	701.010

EXISTING STORM SEWER DATA			
No. to	Size	Type	Length
STM-208	CBMH-2	300mm	HDPE

PROPOSED STORM SEWER DATA			
No. to	Size	Type	Length
STM-208	STM-D	375mm	PVC



PROP GRADE	214.572	214.464	214.356	214.248	214.189	214.321	214.589	214.868	215.147	215.426	215.699
PROP WATERMAIN	150mm WATERMAIN MIN. 1.8m COVER PVC CL 150 BEDDING PER OPSD-802.010 OPEN CUT INSTALLATION										
PROP STORM SEWER	85.1m OF 375mm STORM SEWER @ 0.50% PVC DR 35 BEDDING PER OPSD-802.010										
EXISTING SANITARY SEWER	EX 200mm PVC SANITARY SEWER @ 0.41%										
EXISTING GRADE	214.635	214.539	214.581	214.573	214.418	214.274	214.183	214.157	214.320	214.605	214.878
STATION	3+000	3+010	3+020	3+030	3+040	3+050	3+060	3+070	3+080	3+090	3+100

LEGEND

SEWERS, SANITARY or STORM
MANHOLE AND CATCHBASIN
WATERMAIN, FIRE HYDRANT
GASMAIN
UNDERGROUND TELEPHONE
UNDERGROUND HYDRO
UNDERGROUND T.V. CABLE
UTILITY POLES
TREE REMOVAL AND GRUBBING
REPLACE CONCRETE SIDEWALK
REPLACE CONCRETE DRIVEWAYS
REPLACE BRICK DRIVEWAYS
PLACE HOT MIX ASPHALT
(ROADS 40mm HL 3 & 50mm HL 4 HOT MIX)
(DRIVEWAYS 50mm HL 3 HOT MIX W/SG)

1:50
1:250

1m 0 1m 2m
5m 0 5m 10m

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BENCHMARK INFORMATION

B.M. Elev. 214.702
Top spindle of fire hydrant located in the south boulevard near Mun#494 Niagara St.

B.M. Elev. 215.578
Top spindle of fire hydrant located at the south-east corner of the intersection between Niagara St and Toronto St.

Design By: T.G.M. Checked By: A.E.M.

LICENCED PROFESSIONAL ENGINEER
FEB/15/2024
A.R. ESTRADA MORFIN
100221004
PROVINCE OF ONTARIO

LICENCED PROFESSIONAL ENGINEER
02-05-2025
T. G. MILLAR
100556914
PROVINCE OF ONTARIO

No.	DATE	REVISION
1	FEB-24	ISSUED FOR MEETING #1
2	JUL-25	ISSUED FOR REVIEW
3	JAN-26	ISSUED FOR DRAINAGE ACT
4	FEB-26	ISSUED FOR TENDER

BMROSS
engineering better communities

Goderich Mount Forest Sarnia

Town of Plympton-Wyoming
(Wyoming)
Niagara St East Reconstruction
Niagara Street
Plan and Profile from
Sta. 3+000 to Sta. 3+130

Project No.
23245

Scale (24x36)
Horizontal : 1:250
Vertical : 1:50

Drawing No.
3 of 8

- NOTES:
1. WATERMAIN AND SEWERS INSTALLED IN PARALLEL TO HAVE A MINIMUM SEPARATION FROM OF 2.5m HORIZONTAL FROM PIPE EDGE TO PIPE EDGE. FOR CROSSING LOCATIONS WATERMAINS SHALL PASS OVER SEWERS. WHERE WATERMAIN MUST PASS UNDER SEWER TO ACHIEVE FROST PROTECTION 0.5m VERTICAL SEPARATION IS REQUIRED.
 2. CONTRACTOR TO VERIFY THE EXACT LOCATION AND INVERT ELEVATION OF EXISTING UNDERGROUND SERVICES AND UTILITIES PRIOR TO STARTING CONSTRUCTION.
 3. CONTRACTOR SHALL FULLY PROTECT AND SUPPORT UTILITIES, POLES, SEWERS, WATERMAINS AND SERVICES DURING CONSTRUCTION.
 4. NO WATER SERVICE COUPLERS WILL BE PERMITTED BETWEEN MAIN STOP AND CURB STOP.
 5. PROPOSED WATER SERVICE SIZES ARE 25mm CTS PEX PIPE UNLESS NOTED OTHERWISE AND TO BE INSTALLED USING OPEN CUT TRENCHES UNLESS NOTED OTHERWISE.
 6. ENBRIDGE WILL DEFLECT SECTIONS OF GASMAIN AND SERVICES WHERE THESE ARE IDENTIFIED TO BE IN CONFLICT WITH THE INSTALLATION OF THE BARNES DRAIN AND STORM SEWERS. WORK IS SCHEDULE TO BEGIN IN APRIL 2026 AND IS TO BE COMPLETED BY EARLY MAY 2026.

EXISTING C.B. DATA			
No.	Station	O/S	Material
IPCB-3	3+181.60	BLVD	CONC

PROPOSED C.B. DATA				
No.	Station	O/S	Desc.	T/Grate
CB13	3+178.20	BLVD	705.010	400.020
CB14	3+183.70	BLVD	705.010	400.020
CB15	3+186.80	BLVD	705.010	400.020
DCB16	3+205.00	LT	705.020	400.020
DCB17	3+205.00	RT	705.020	400.020

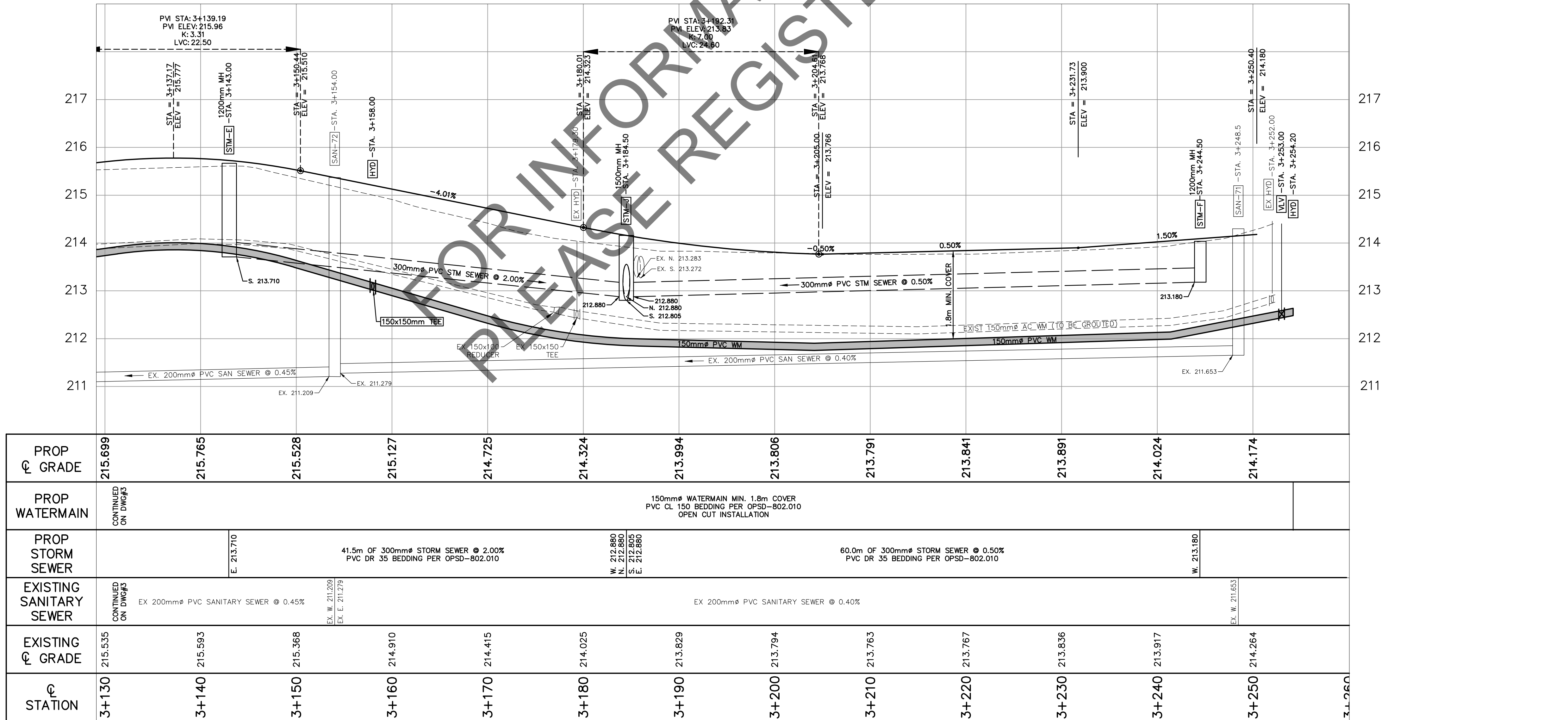
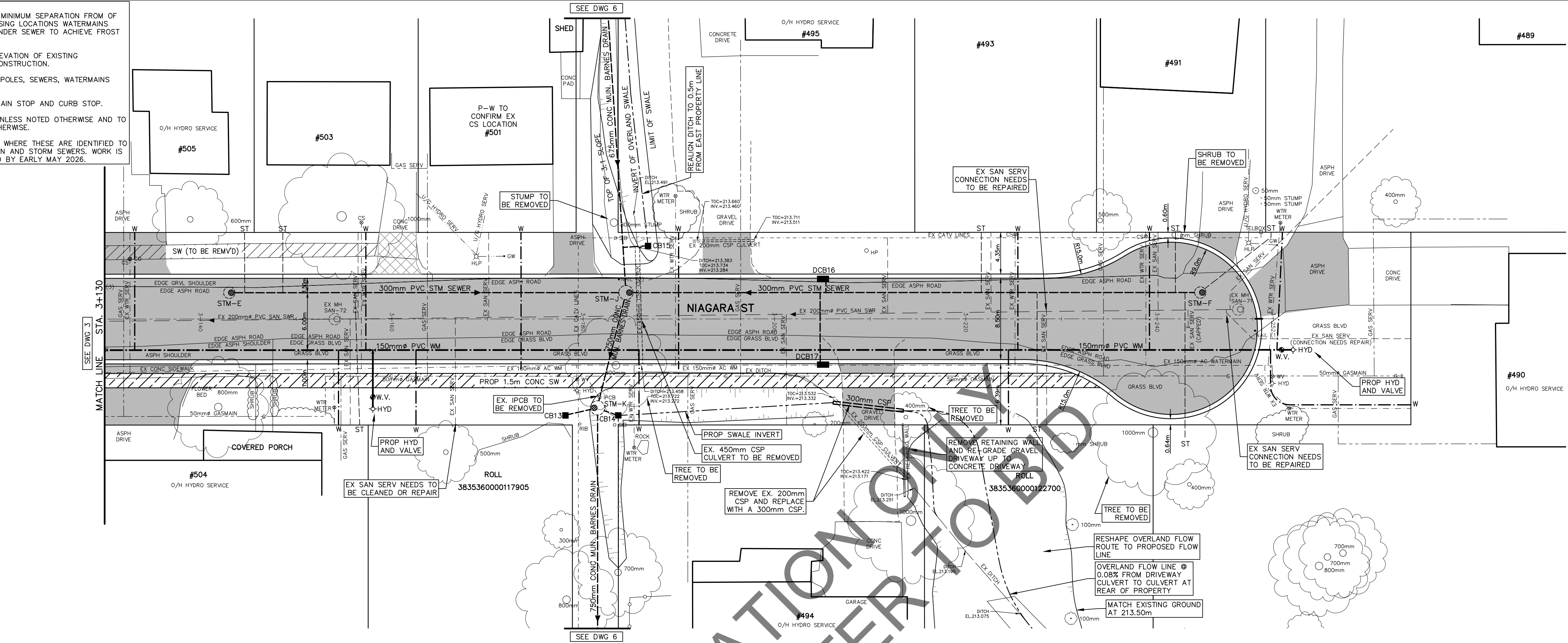
PROPOSED C.B. LEADS DATA				
No.	Size	Type	Class	Length
CB13	200mm	PVC	DR35	2.5m
CB14	200mm	PVC	DR35	1.5m
CB15	200mm	PVC	DR35	2.5m
DCB16	250mm	PVC	DR35	1.5m
DCB17	250mm	PVC	DR35	7.0m

PROPOSED STORM M.H. DATA				
No.	Station	O/S	Desc.	Grate
STM-E	3+143.00	LT	701.010	401.010
STM-J	3+181.50	LT	701.011	401.010
STM-F	3+245.50	LT	701.010	401.010
STM-K	3+181.50	BLVD	701.010	401.010

*ALL STORM MH'S TO BE BENCHMARKED

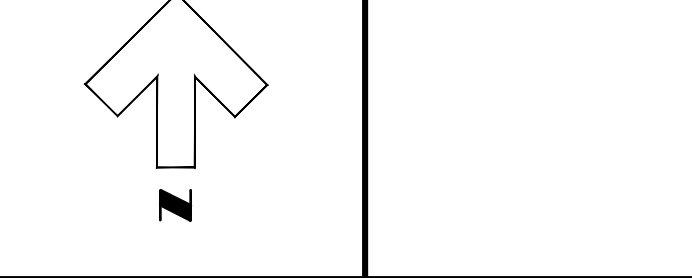
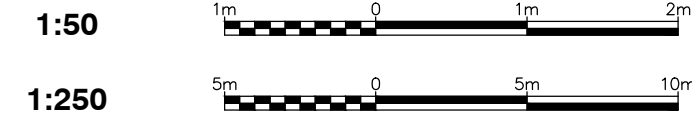
EXISTING STORM SEWER DATA				
No. to No.	Size	Type	Length	Info
CULVERT 1	450mm	CSP	12.5m	REMOVE
CULVERT 2	200mm	CSP	6.5m	REMOVE
CULVERT 3	200mm	CSP	11.5m	REMOVE

PROPOSED STORM SEWER DATA				
No. to No.	Size	Type	Class	Length
STM-E - STM-J	300mm	PVC	DR35	41.5m
STM-F - STM-J	300mm	PVC	DR35	60.0m
STM-J - STM-K	750mm	CONC	DR35	12.0m



PROP GRADE	215.699	215.765	215.528	215.127	214.725	214.324	213.994	213.806	213.791	213.841	213.891	214.024	214.174
PROP WATERMAIN	CONTINUED ON DWG#2												
PROP STORM SEWER													
EXISTING SANITARY SEWER	CONTINUED ON DWG#3												
EXISTING GRADE	215.535	215.593	215.368	214.910	214.415	214.025	213.829	213.794	213.763	213.767	213.836	213.917	214.264
STATION	3+130	3+140	3+150	3+160	3+170	3+180	3+190	3+200	3+210	3+220	3+230	3+240	3+250

- LEGEND
- SAN. or STM. (Symbol)
 - SEWERS, SANITARY or STORM (Symbol)
 - MANHOLE and CATCHBASIN (Symbol)
 - WATERMAIN, (Symbol)
 - FREE HYDRANT (Symbol)
 - GASMAIN (Symbol)
 - UNDERGROUND TELEPHONE (Symbol)
 - UNDERGROUND HYDRO (Symbol)
 - UNDERGROUND T.V. CABLE (Symbol)
 - UTILITY POLES (Symbol)
 - TREE REMOVAL AND GRUBBING (Symbol)
 - REPLACE CONCRETE SIDEWALK (Symbol)
 - REPLACE CONCRETE DRIVEWAYS (Symbol)
 - REPLACE BRICK DRIVEWAYS (Symbol)
 - PLACE HOT MIX ASPHALT (Symbol)



NOTE

The locations of existing underground utilities are shown in an approximate way only and have not been independently verified by the owner or its representative. The contractor shall determine the exact location of all existing utilities before commencing work and agrees to be fully responsible for any damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.

BENCHMARK INFORMATION

B.M. Elev. 214.702
Top spindle of fire hydrant located in the south boulevard near Mun#494 Niagara St.

B.M. Elev. 215.548
Top spindle of fire hydrant located at the the east end of the road near Mun. #490 Niagara St.

Design By: T.G.M. Checked By: A.E.M.



No.	DATE	REVISION
1	FEB-24	ISSUED FOR MEETING #1
2	JUL-25	ISSUED FOR REVIEW
3	JAN-26	ISSUED FOR DRAINAGE ACT
4	FEB-26	ISSUED FOR TENDER



Goderich Mount Forest Sarnia



Town of Plympton-Wyoming (Wyoming)
Niagara St East Reconstruction
Niagara Street
Plan and Profile from
Sta. 3+130 to Sta. 3+250

Project No. 23245
Scale (24x36)
Horizontal : 1:250
Vertical : 1:50
Drawing No. 4 of 8

- NOTES:
- CONTRACTOR TO VERIFY THE EXACT LOCATION AND INVERT ELEVATION OF EXISTING UNDERGROUND SERVICES AND UTILITIES PRIOR TO STARTING CONSTRUCTION.
 - CONTRACTOR SHALL FULLY PROTECT AND SUPPORT UTILITIES, POLES, SEWERS, WATERMAINS AND SERVICES DURING CONSTRUCTION.
 - ENBRIDGE WILL DEFLECT SECTIONS OF GASMAIN AND SERVICES WHERE THESE ARE IDENTIFIED TO BE IN CONFLICT WITH THE INSTALLATION OF THE BARNES DRAIN AND STORM SEWERS. WORK IS SCHEDULE TO BEGIN IN APRIL 2026 AND IS TO BE COMPLETED BY EARLY MAY 2026.
 - ACCORDING TO RECORDS, THE GAP BETWEEN THE BOTTOM OF THE NEW 750mm STM CONC (1m EXTERIOR PIPE DIAMETER) AND TOP OF 100mm PE FM PIPE WOULD BE SUFFICIENT. IF AFTER EXPOSING THE FORCEMAIN IT IS ENCOUNTERED THAT IT WILL BE IN CONFLICT WITH THE PATH OF THE BARNES DRAIN, THEN THE 100mm PE FORCEMAIN WILL HAVE TO BE DEFLECTED UNDER THE 750mm CONC PIPE WITH A MIN. CLEARANCE OF 0.2m

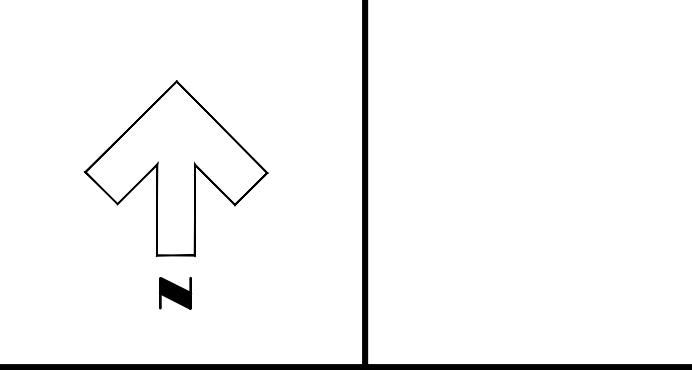
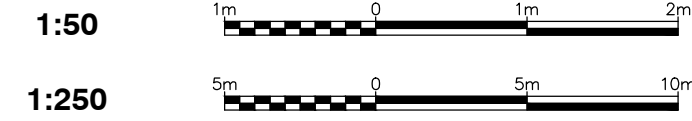
EXISTING STORM M.H. DATA				
No.	Station	O/S	Material	Info
STM-241	1+011.50	RT	CONC	KEEP
STM-44A	1+109.10	RT	CONC	KEEP

PROPOSED STORM M.H. DATA				
No.	Station	O/S	Desc.	T/Grate
STM-L	1+050.80	LT	701.011	401.010 214.725

•ALL STORM MH's TO BE BENCHED

PROPOSED STORM SEWER DATA					
No. to No.	Size	Type	Class	Length	
STM-L - STM-44A	750mm	CONC	65-D	57.8m	

LEGEND	
	SEWERS, SANITARY or STORM
	MANHOLE and CATCHBASIN
	WATERMAIN, FIRE HYDRANT
	GASMAIN
	UNDERGROUND TELEPHONE
	UNDERGROUND HYDRO
	UNDERGROUND T.V. CABLE
	UTILITY POLES
	TREE REMOVAL AND GRUBBING
	REPLACE CONCRETE SIDEWALK
	REPLACE CONCRETE DRIVEWAYS
	REPLACE BRICK DRIVEWAYS
	PLACE HOT MIX ASPHALT (ROADS 40mm HL 3 & 50mm HL 4 HOT MIX) (DRIVEWAYS 50mm HL 3 HOT MIX MISC.)



NOTE

The locations of existing underground utilities are shown in an approximate way only and have not been independently verified by the owner or its representative. The contractor shall determine the exact location of all existing utilities before commencing work and agrees to be fully responsible for any damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.

BENCHMARK INFORMATION

B.M. Elev. 214784
Nail on north edge of the road and east of the Municipal Easement.

Design By: T.G.M. Checked By: A.E.M.



No.	DATE	REVISION
1	FEB-24	ISSUED FOR MEETING #1
2	JUL-25	ISSUED FOR REVIEW
3	JAN-26	ISSUED FOR DRAINAGE ACT
4	FEB-26	ISSUED FOR TENDER



Goderich Mount Forest Sarnia

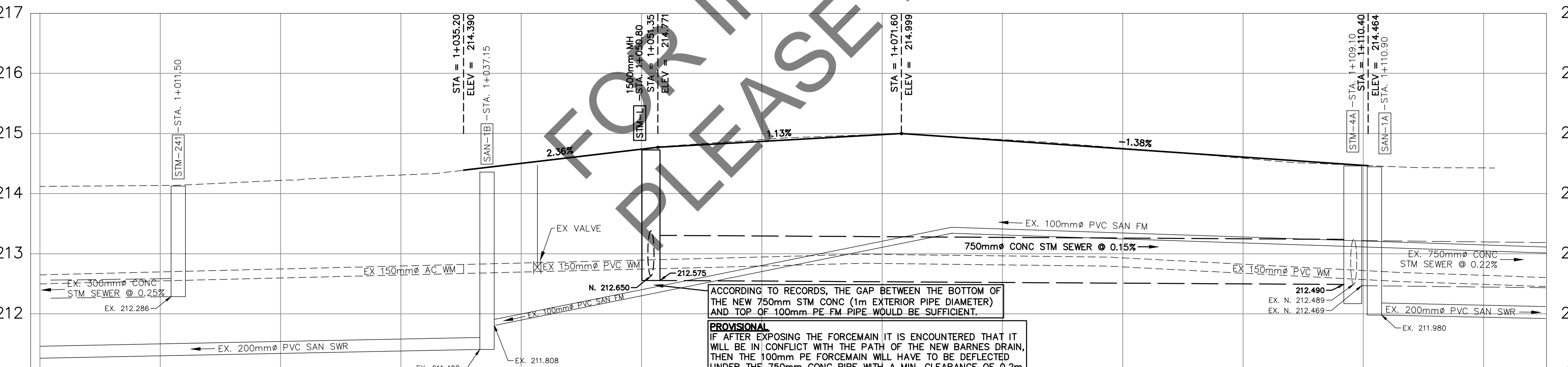
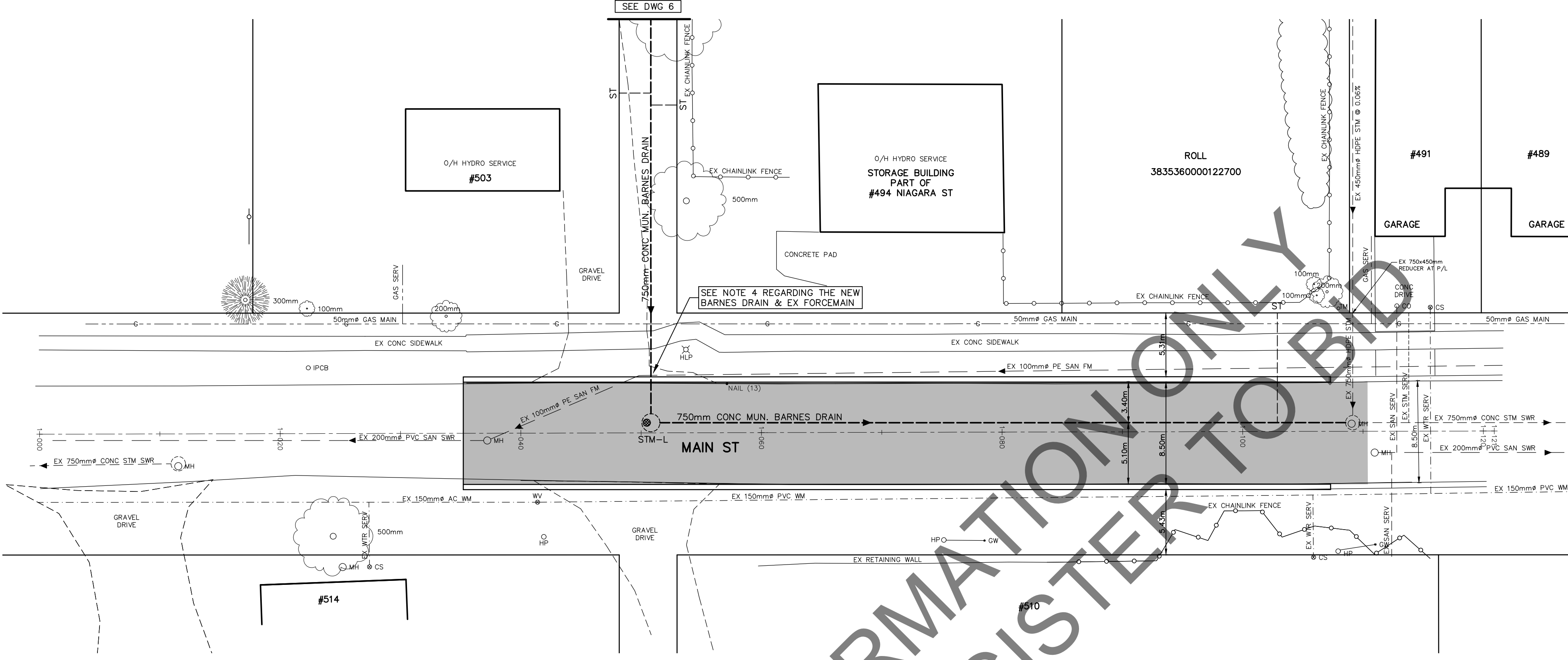


Town of Plympton-Wyoming (Wyoming)
Barnes Mun. Drain Replacement Main Street
Plan and Profile from Sta. 1+000 to Sta. 1+120

Project No. 23245

Scale (24x36)
Horizontal : 1:250
Vertical : 1:50

Drawing No. 5 of 8



PROP GRADE	PROP STORM SEWER	EXISTING SANITARY SEWER	EXISTING GRADE	GRADE STATION
214.119	EX. 300mm CONC STORM SEWER @ 0.25% EX. W. 212.286	EX. 200mm PVC SANITARY SEWER	214.119	1+000
214.135			214.135	1+010
214.220			214.220	1+020
214.310			214.310	1+030
214.506		EX. 211.408 EX. 211.808	214.506	1+040
214.746	N. 212.650 E. 212.575		214.746	1+050
214.899			214.899	1+060
214.987			214.987	1+070
214.899			214.899	1+080
214.756			214.756	1+090
214.588			214.588	1+100
214.468	EX. W. 212.490 EX. N. 212.489 EX. E. 212.469	EX. 200mm PVC SANITARY SEWER @ 0.43%	214.468	1+110
214.427	EX. 750mm CONC STORM SEWER @ 0.22%		214.427	1+120

- NOTES:
- CONTRACTOR TO VERIFY THE EXACT LOCATION AND INVERT ELEVATION OF EXISTING UNDERGROUND SERVICES AND UTILITIES PRIOR TO STARTING CONSTRUCTION.
 - CONTRACTOR SHALL FULLY PROTECT AND SUPPORT UTILITIES, POLES, SEWERS, WATERMAINS AND SERVICES DURING CONSTRUCTION.
 - ENBRIDGE WILL DEFLECT SECTIONS OF GASMAIN AND SERVICES WHERE THESE ARE IDENTIFIED TO BE IN CONFLICT WITH THE INSTALLATION OF THE BARNES DRAIN AND STORM SEWERS. WORK IS SCHEDULE TO BEGIN IN APRIL 2026 AND IS TO BE COMPLETED BY EARLY MAY 2026.

EXISTING C.B. DATA				
No.	Station	O/S	Material	Info
RYCB	0+175.40	LT	HDPE	KEEP
CB-138	0+332.70	RT	HDPE	KEEP

PROPOSED C.B. DATA				
No.	Station	O/S	Desc.	Grate
CB18	0+175.40	LT	705.010	400.020
CB19	0+373.10	LT	705.010	400.020
CB20	0+376.90	RT	705.010	400.020

PROPOSED C.B. LEADS DATA				
No.	Size	Type	Class	Length
CB18	200mm	PVC	DR35	2.0m
CB19	200mm	PVC	DR35	5.0m
CB20	200mm	PVC	DR35	2.0m

EXISTING STORM M.H. DATA				
No.	Station	O/S	Material	Info
CBMH-3	0+323.50	RT	CONC	KEEP
CBMH-4	0+330.50	RT	CONC	KEEP

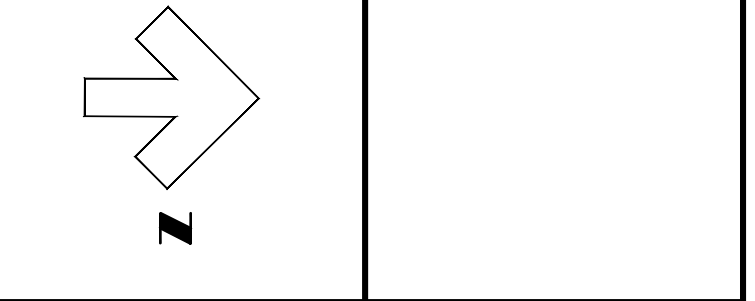
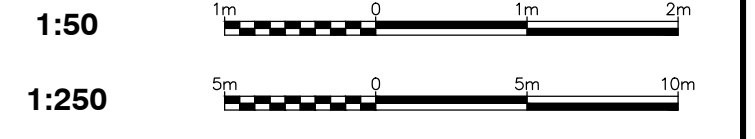
PROPOSED STORM M.H. DATA				
No.	Station	O/S	Desc.	Grate
STM-H	0+222.90	CT	701.011	401.010
STM-G	0+312.90	CT	701.011	401.010

EXISTING STORM SEWER DATA				
No. to	No.	Size	Type	Length
CBMH-3	CBMH-4	525mm	PVC	7.0m

PROPOSED STORM SEWER DATA				
No. to	No.	Size	Type	Length
STM-H	STM-G	600mm	CONC	65-D
STM-H	STM-G	600mm	CONC	65-D
STM-G	CBMH-3	525mm	CONC	65-D

LEGEND

SAN. or STM. ---
SEWERS, SANITARY or STORM
MANHOLE AND CATCHBASIN
WATERMAIN, ---
GASMAIN
UNDERGROUND TELEPHONE
UNDERGROUND HYDRO
UNDERGROUND T.V. CABLE
UTILITY POLES
TREE REMOVAL AND GRUBBING
REPLACE CONCRETE SIDEWALK
REPLACE CONCRETE DRIVEWAYS
REPLACE BRICK DRIVEWAYS
PLACE HOT MIX ASPHALT
(ROADS 40mm HL 3 & 50mm HL 4 HOT MIX)
(DRIVEWAYS 50mm HL 3 HOT MIX MSC)



NOTE

The locations of existing underground utilities are shown in an approximate way only and have not been independently verified by the owner or its representative. The contractor shall determine the exact location of all existing utilities before commencing work and agrees to be fully responsible for any damages which might be occasioned by the contractor's failure to exactly locate and preserve any and all underground utilities.

BENCHMARK INFORMATION

B.M. Elev. 216.084
Top spindle of fire hydrant located in the south boulevard between Mun#486 and #488 Thames St.

B.M. Elev. 215.580
Top spindle of fire hydrant located in the south boulevard between Mun#494 and #496 Thames St.

Design By: T.G.M. Checked By: A.E.M.

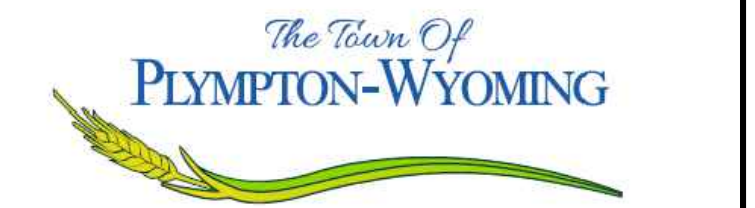
PROFESSIONAL ENGINEER
FEB/5/2026
A.R. ESTRADA MORFIN
100221004
PROVINCE OF ONTARIO

PROFESSIONAL ENGINEER
02-25-2026
T. G. MILLAR
100556914
PROVINCE OF ONTARIO

No.	DATE	REVISION
1	FEB-24	ISSUED FOR MEETING #1
2	JUL-25	ISSUED FOR REVIEW
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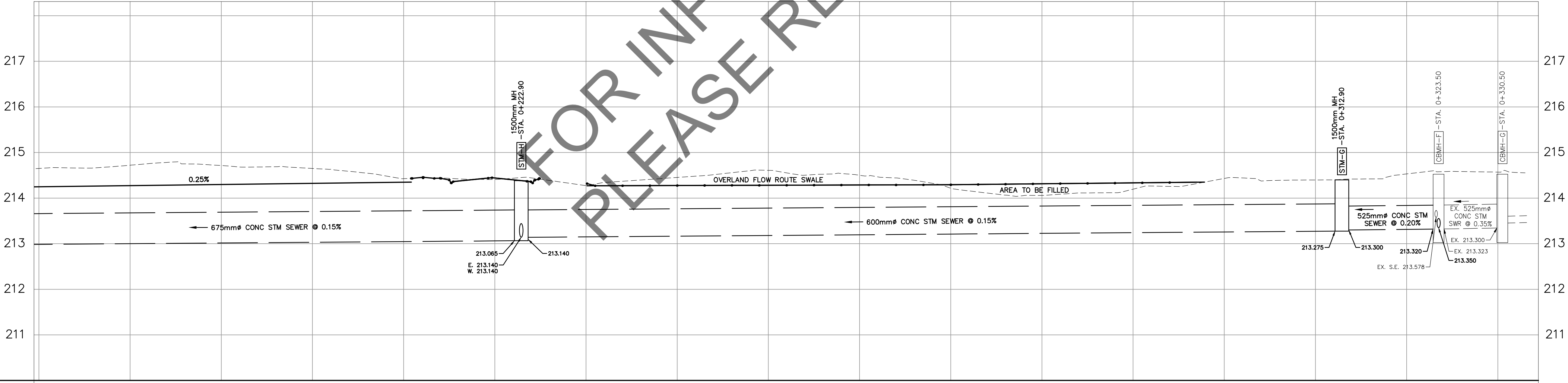
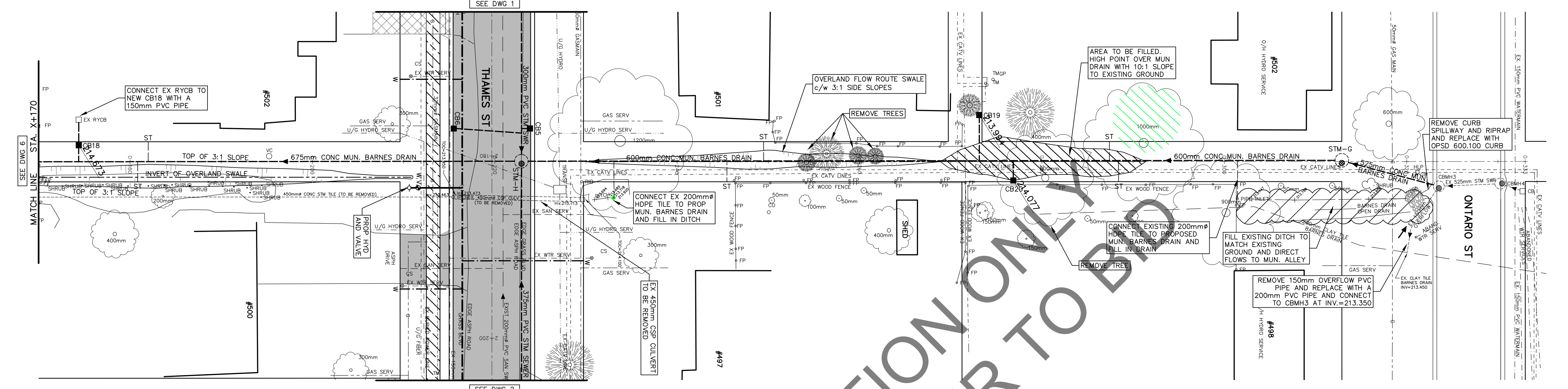
Goderich Mount Forest Sarnia



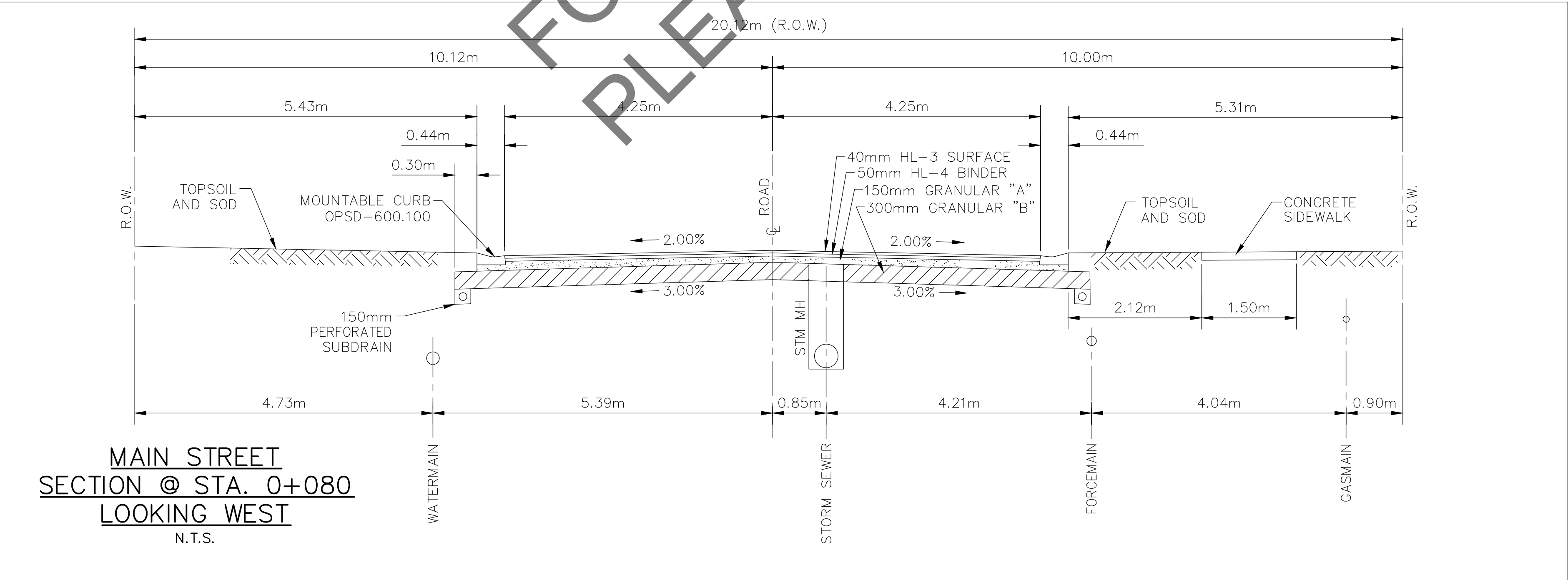
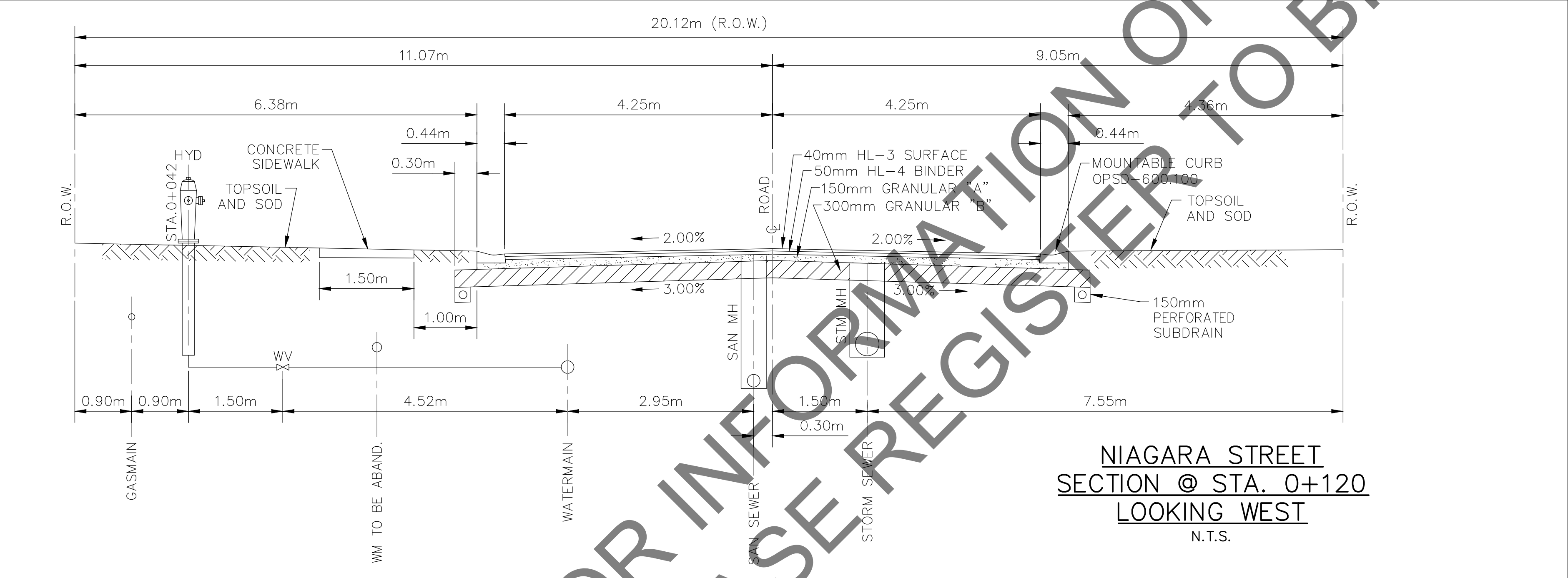
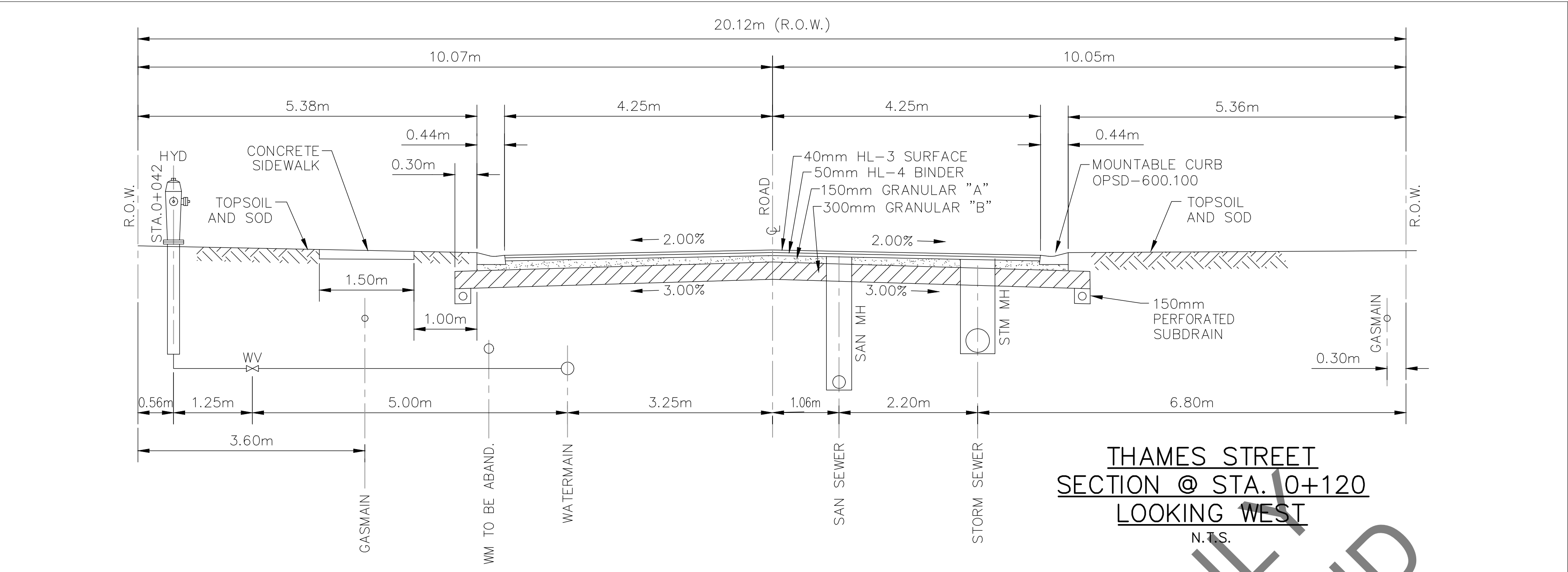
Town of Plympton-Wyoming (Wyoming)
Mun. Barnes Drain Replacement Municipal Easement
Plan and Profile from Sta. 0+170 to Sta. 0+330

Project No.
23245

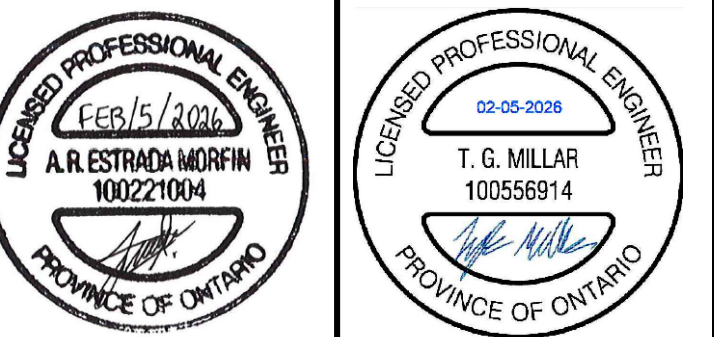
Drawing No.
7 of 8



PROPOSED GRADE	214.248	214.273	214.298	214.323	214.348	214.276	214.282	214.288	214.293	214.314	214.334	214.275	214.300	214.320	214.346	214.529
PROP MUN. DRAIN	CONTINUED ON DWG 6	56.6m OF 675mm ^Ø STORM SEWER @ 0.15% CONC CSA A257.2 65-D BEDDING PER OPSD-802.030					90.0m OF 600mm ^Ø STORM SEWER @ 0.15% CONC CSA A257.2 65-D BEDDING PER OPSD-802.030									
EXISTING GRADE	214.573	214.674	214.651	214.517	214.391	214.407	214.193	214.386	214.443	214.427	214.285	214.151	214.172	214.242	214.084	214.529
STATION	0+170	0+180	0+190	0+200	0+210	0+220	0+230	0+240	0+250	0+260	0+270	0+280	0+290	0+300	0+310	0+330



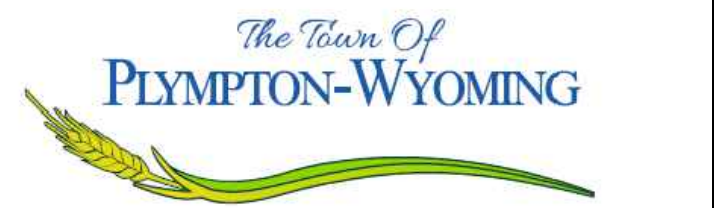
Design By: T.G.M. Checked By: A.E.M.



No.	DATE	REVISION
1	FEB-24	ISSUED FOR MEETING #1
2	JUL-25	ISSUED FOR REVIEW
3	JAN-26	ISSUED FOR DRAINAGE ACT
4	FEB-26	ISSUED FOR TENDER



Goderich Mount Forest Sarnia



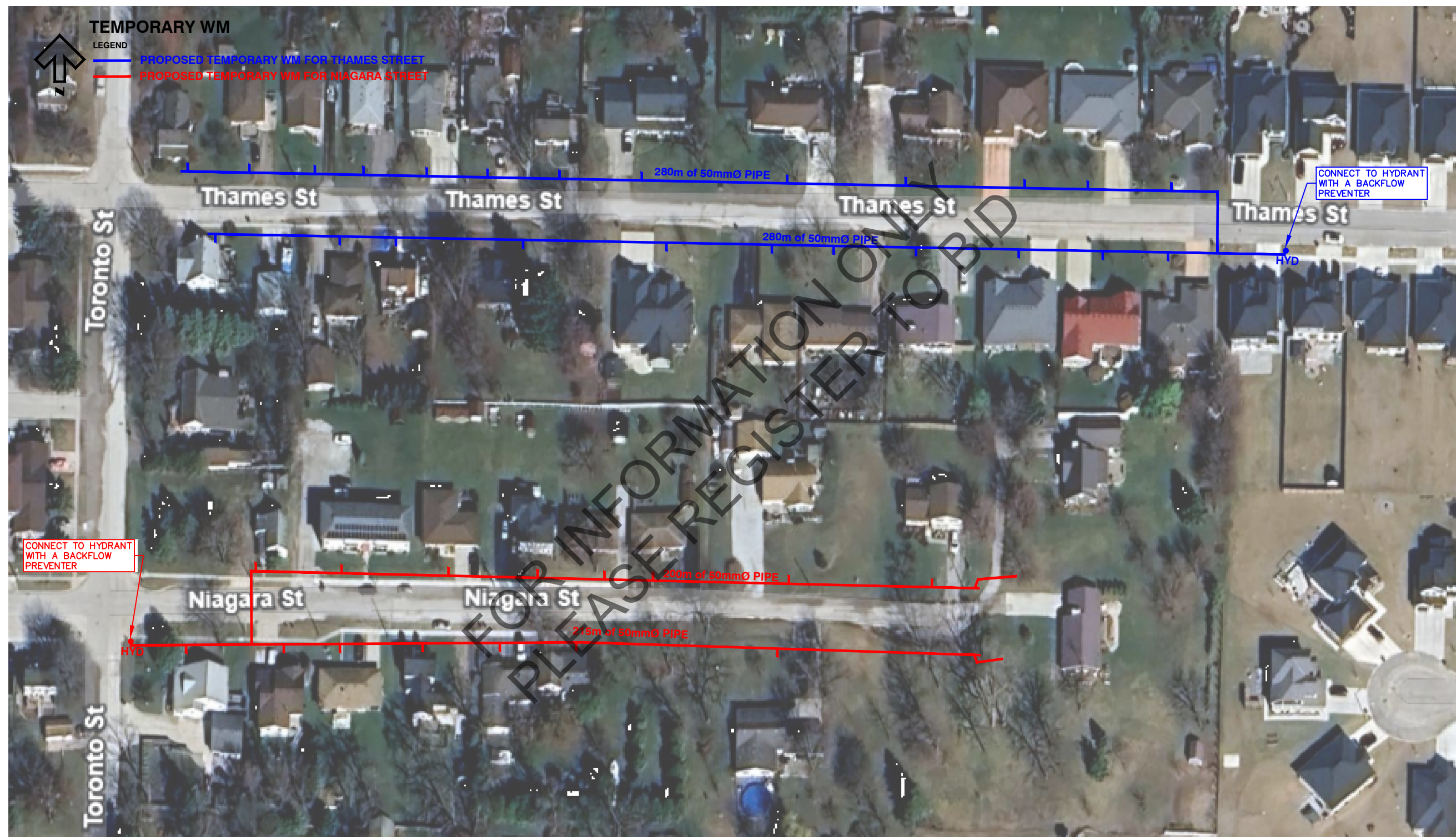
Town of Plympton-Wyoming
(Wyoming)
Thames St, Niagara St & Main St
Reconstruction
Sections & Details

Scale (24x36) Horizontal : 1:250 Vertical : 1:50	Project No. 23245 Drawing No. 8 of 8

APPENDIX A

Proposed Temporary Watermain Map

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

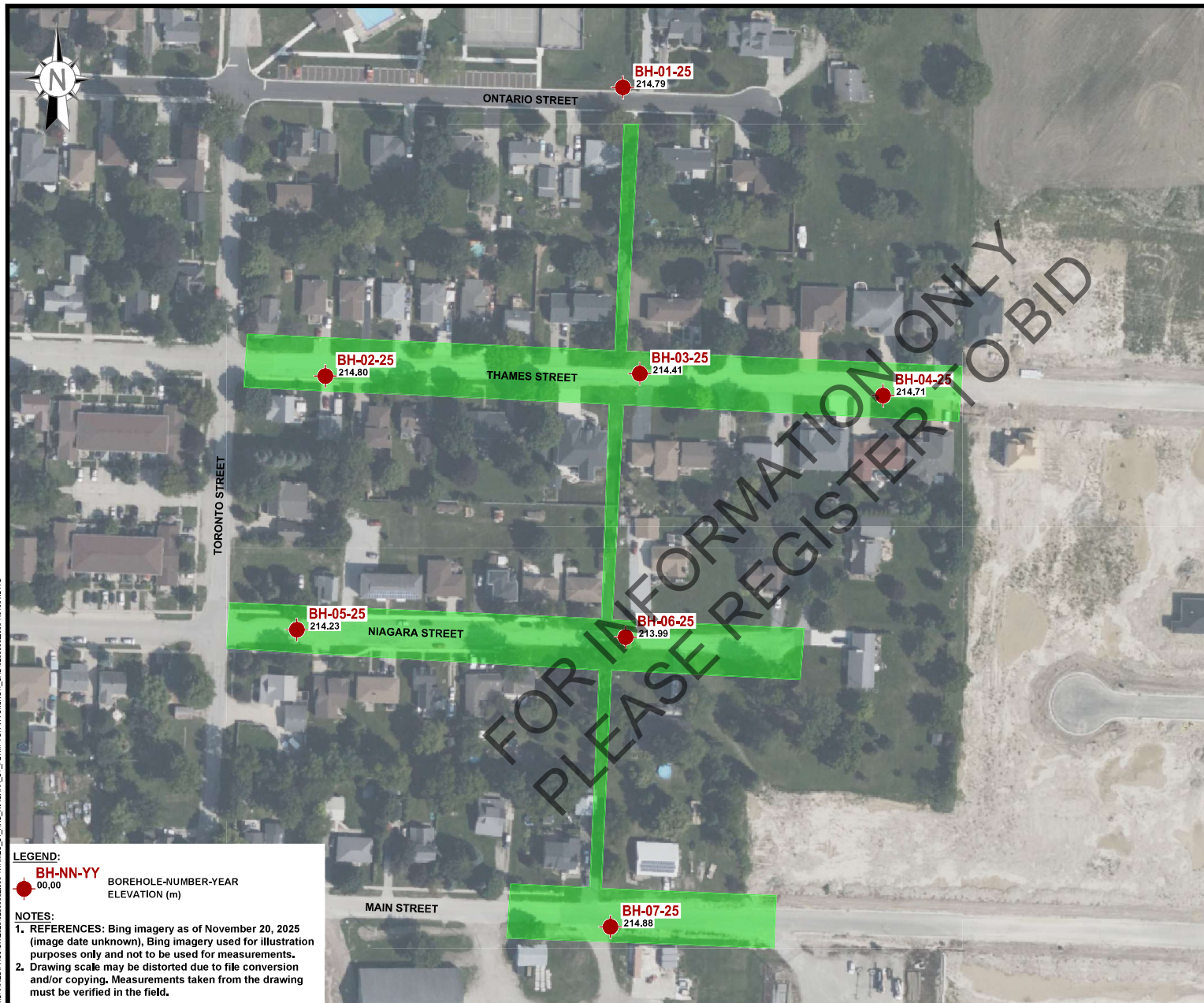


APPENDIX B

Boreholes Log

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

Y:\SHARED\PROJECTS\2025\02509562\00-THAMES_ST_AND_NIAGARA_ST_PLYMPTON-WYOMING\DWG_CAD\02509562\00-0101.DWG



LEGEND:
BH-NN-YY
00,00 BOREHOLE-NUMBER-YEAR
ELEVATION (m)

NOTES:
1. REFERENCES: Bing imagery as of November 20, 2025 (image date unknown), Bing imagery used for illustration purposes only and not to be used for measurements.
2. Drawing scale may be distorted due to file conversion and/or copying. Measurements taken from the drawing must be verified in the field.

This document must be used jointly with the recommendations formulated in the geotechnical study report

XX	REVISION	JJ/MM/AA	XX	XX	XX
No.	Version	Date	By	Check	Appr.

Seal

Scale



1:1 500

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Client

Town of
Plympton-Wyoming



Englobe Corp.
60 May Drive, Unit 12A
London, ON N6E 3T6
T 519 685-6400
F 519 685-0943

Project

Road Reconstruction and Utilities
Replacement

Multiple Streets, Wyoming, ON

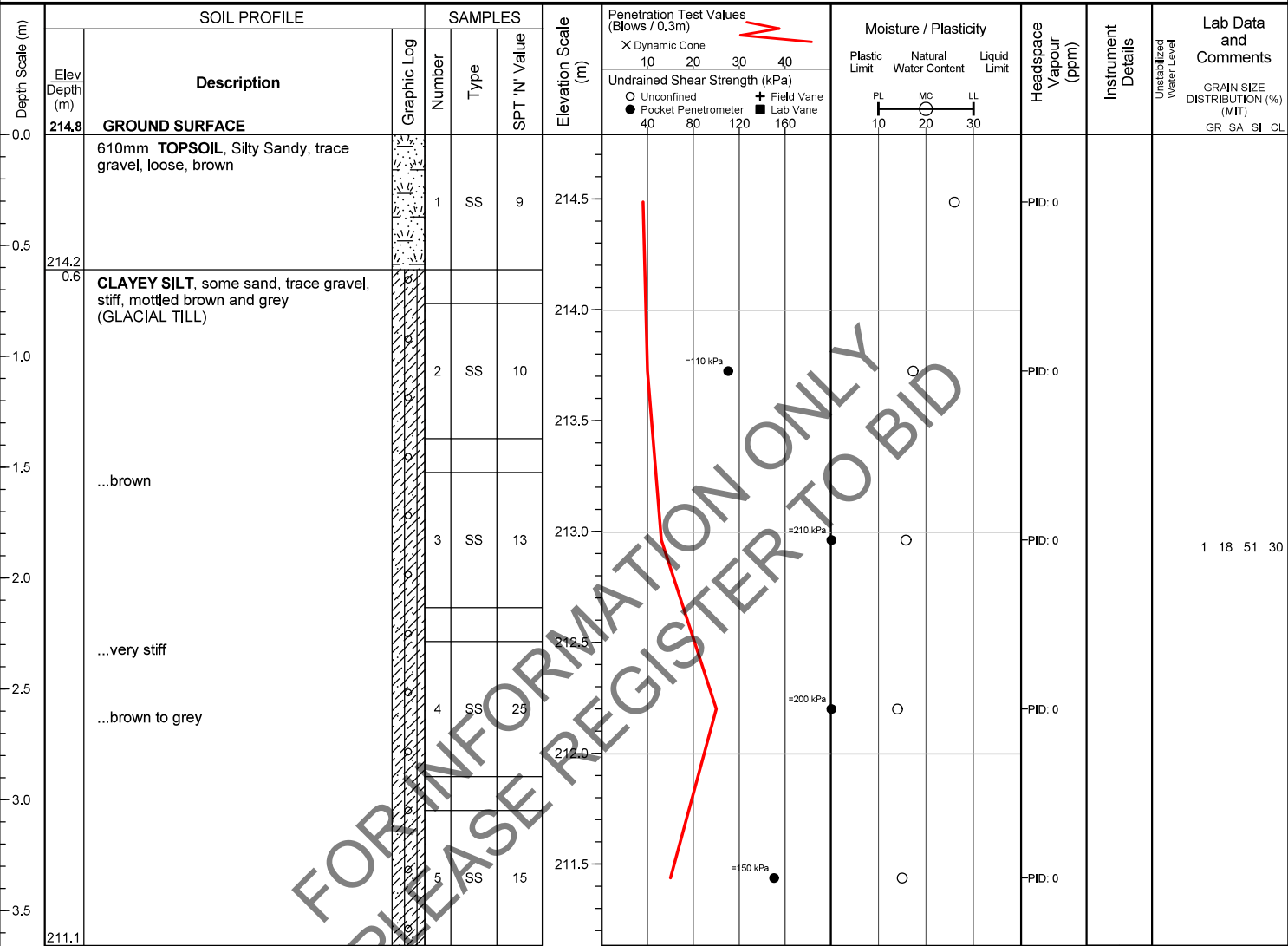
Title

Borehole Location Plan

Discipline:	Geosciences	Prepared by:	LK	Checked by:	MH
Scale:	1:1 500	Drawn by:	LK	Approved by:	ZB
Date:	05/01/2026	Figure N°:			02 of 02
Page setup:	Paper format: (ANSI full bleed 8 (17.00 x 11.00) inches)				
0002					
Resp.	Project	Phase	Disc.	Type	Drawing N°
00	02509562,000	0000	GS	D	0002 00

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Road Reconstruction & Utilities Replacement Compiled by : LK
 Sheet No. : 1 of 1 Location : Ontario Street, Wyoming, ON Checked by : MH

Position : E: 409060, N: 4756051 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

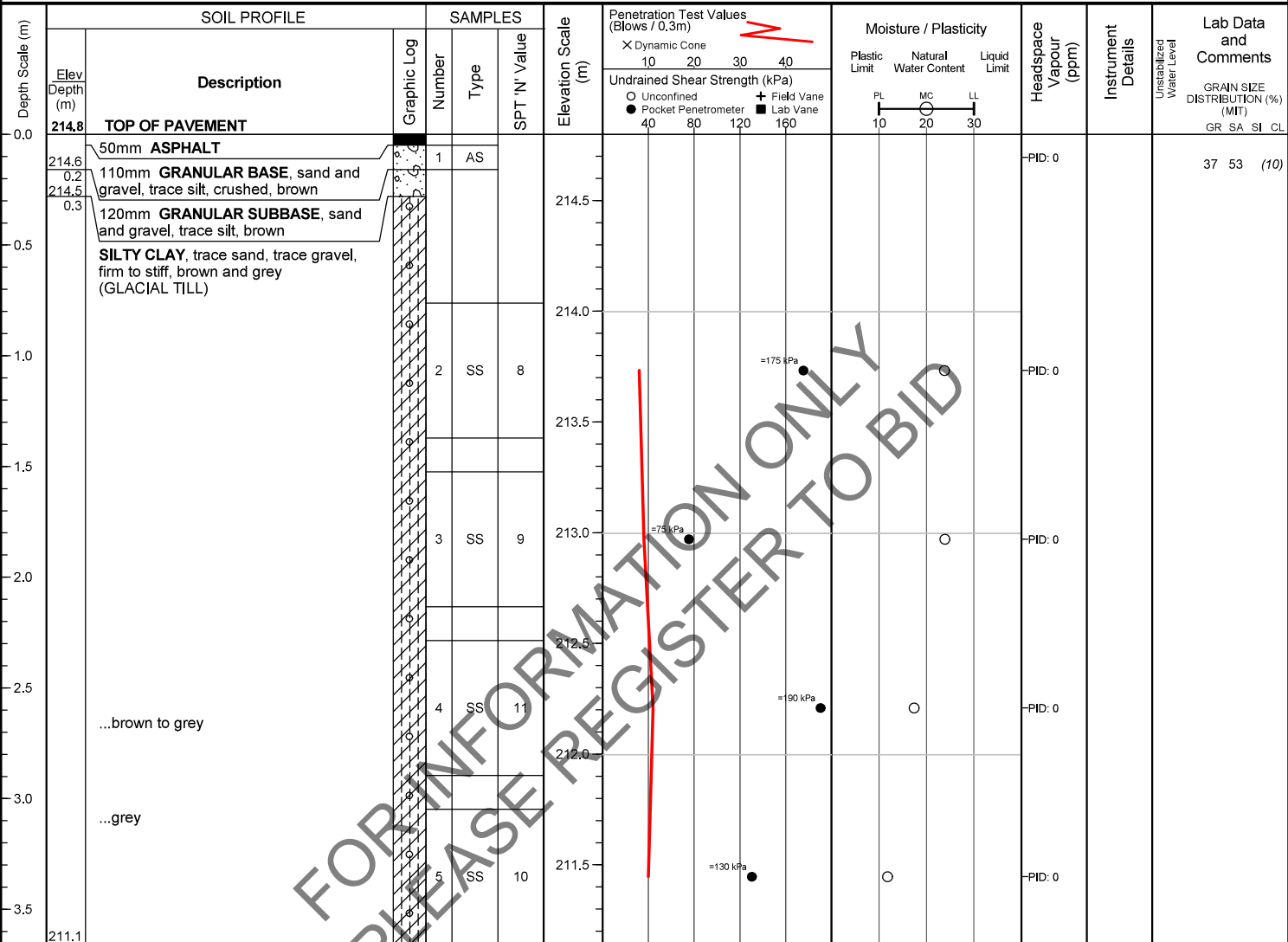


END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Road Reconstruction & Utilities Replacement Compiled by : LK
 Sheet No. : 1 of 1 Location : Thames Street, Wyoming, ON Checked by : MH

Position : E: 408944, N: 4755939 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

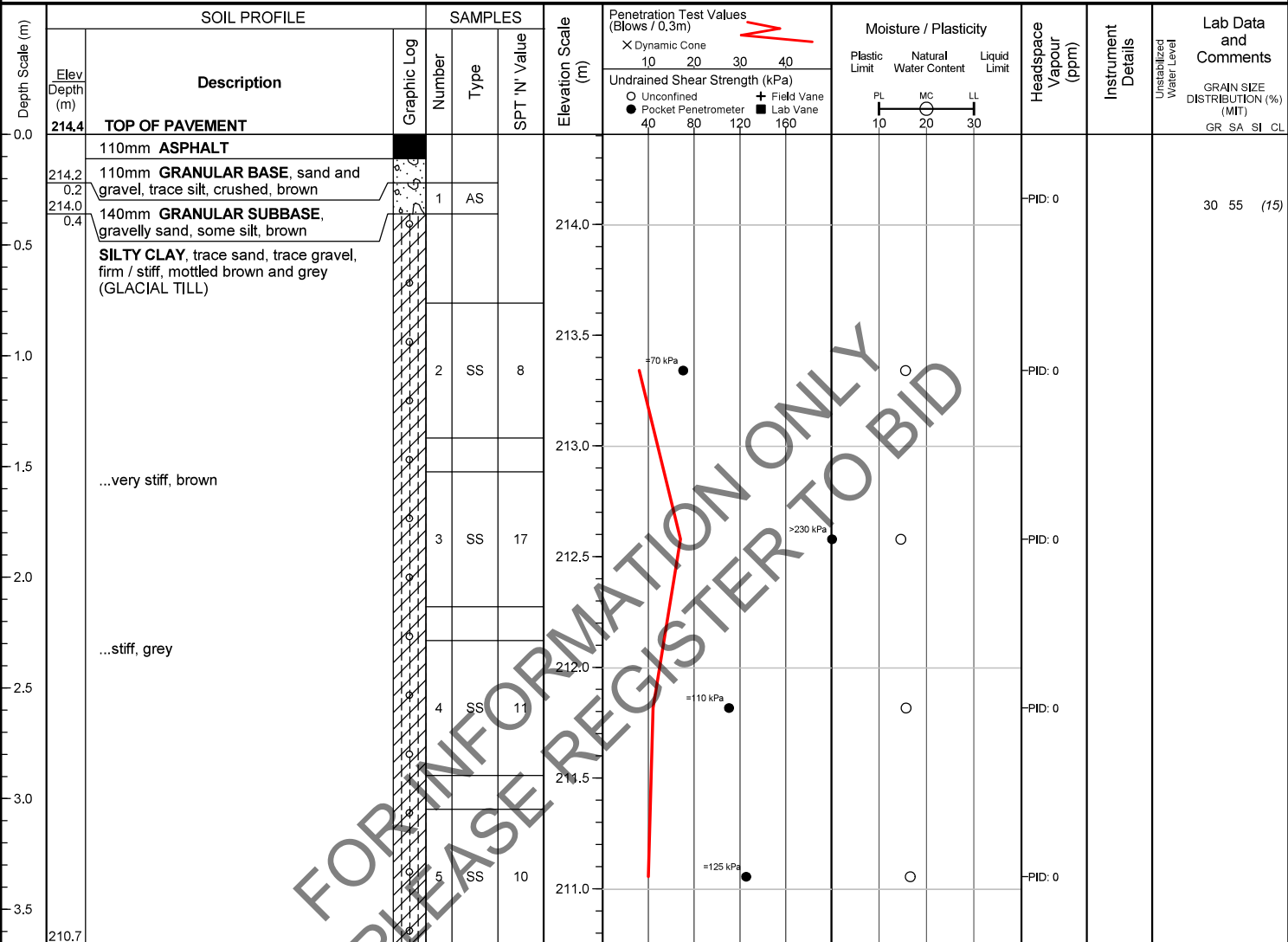


END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Road Reconstruction & Utilities Replacement Compiled by : LK
 Sheet No. : 1 of 1 Location : Thames Street, Wyoming, ON Checked by : MH

Position : E: 409066, N: 4755940 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers



Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Road Reconstruction & Utilities Replacement Compiled by : LK
 Sheet No. : 1 of 1 Location : Thames Street, Wyoming, ON Checked by : MH

Position : E: 409161, N: 4755931 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m)		Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value		10 20 30 40	40 80 120 160	Plastic Limit	Natural Water Content	Liquid Limit			
0.0	214.7	TOP OF PAVEMENT													
0.2	214.5	65mm ASPHALT		1	AS		214.5						PID: 0		37 53 (10)
0.5		160mm GRANULAR BASE, sand and gravel, trace silt, crushed, brown													
0.6	214.1	420mm GRANULAR SUBBASE, sand and gravel, trace silt, brown													
1.0		CLAYEY SILT, some sand, trace gravel, stiff, brown (GLACIAL TILL)		2	SS	11	214.0						PID: 0		0 17 52 31
1.5							213.5								
2.0				3	SS	13	213.0						PID: 0		
2.5		...very stiff					212.5								
3.0				4	SS	17	212.0						PID: 0		
3.5		...grey					211.5								
3.7	211.0			5	SS	16							PID: 0		
	3.7														

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Road Reconstruction & Utilities Replacement Compiled by : LK
 Sheet No. : 1 of 1 Location : Niagara Street, Wyoming, ON Checked by : MH

Position : E: 408933, N: 4755840 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

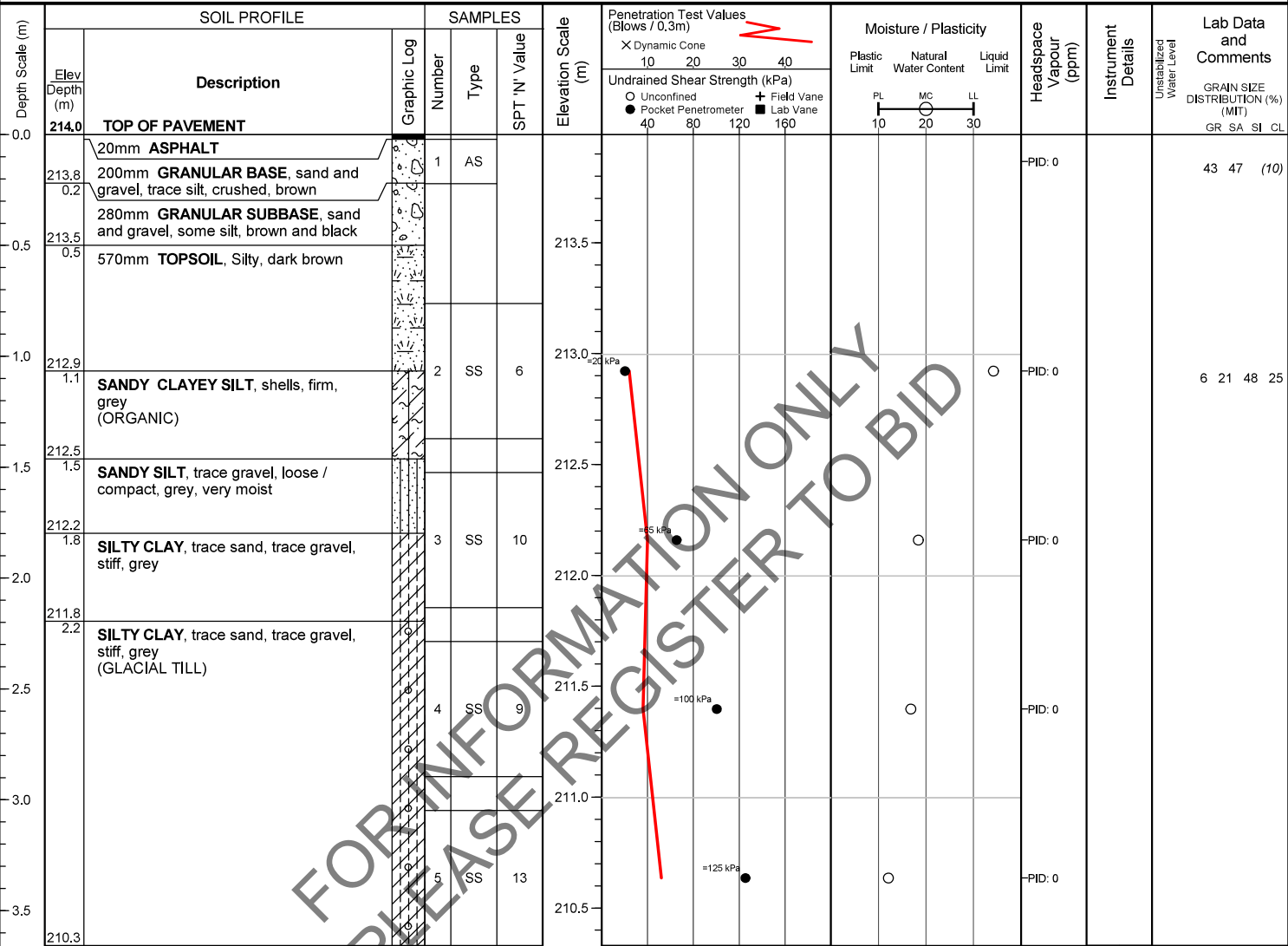
Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m)		Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value		10 20 30 40	40 80 120 160	Plastic Limit	Natural Water Content	Liquid Limit			
0.0	214.2	TOP OF PAVEMENT													
		85mm ASPHALT													
0.3	213.9	180mm GRANULAR BASE, sand and gravel, trace silt, crushed, brown		1	AS										
0.5		820mm GRANULAR SUBBASE, gravelly sand, some silt, brown													
1.0	213.1			2	SS	7									
1.1		FILL, sandy silt, trace topsoil, trace clay, loose, grey, moist													
1.4	212.8														
1.5		FILL, sandy silty clay, soft, grey													
1.7	212.5			3	SS	5									
2.0		SILTY CLAY, trace sand, trace gravel, firm, grey													
2.3	211.9			4	SS	11									
2.5		SILTY CLAY, trace sand, trace gravel, stiff, grey (GLACIAL TILL)													
3.0															
3.5				5	SS	12									
3.7	210.5														

END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Road Reconstruction & Utilities Replacement Compiled by : LK
 Sheet No. : 1 of 1 Location : Niagara Street, Wyoming, ON Checked by : MH

Position : E: 409061, N: 4755837 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

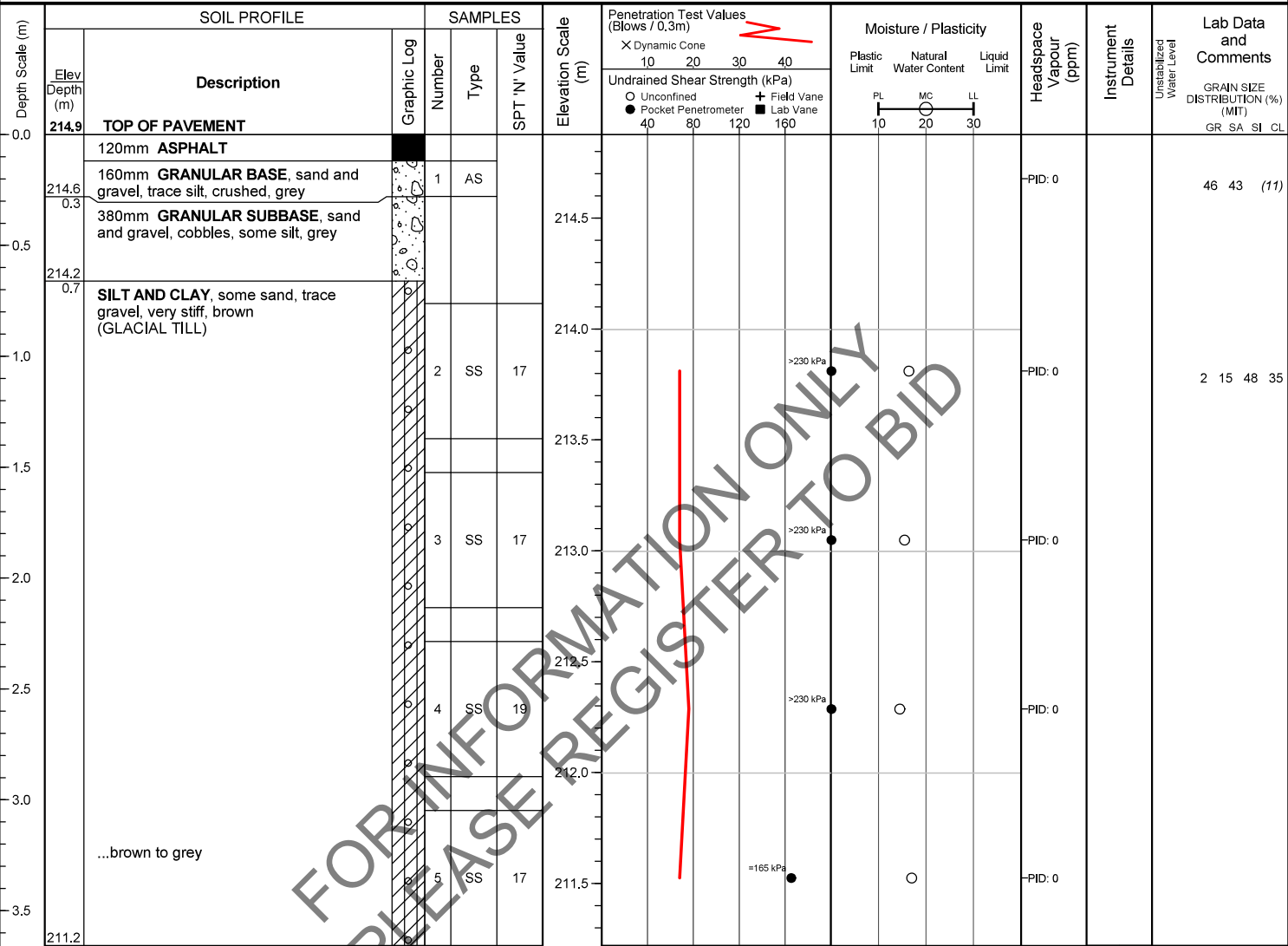


END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Road Reconstruction & Utilities Replacement Compiled by : LK
 Sheet No. : 1 of 1 Location : Main Street, Wyoming, ON Checked by : MH

Position : E: 409055, N: 4755725 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers



END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

APPENDIX C

Soil Characterization Report

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Soil Characterization Report

Proposed Reconstruction of Thames St., Niagara St.,
and Main St.

Wyoming, Ontario

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Town of Plympton-Wyoming

Draft Report | Version 0A

Reference no.

02509562.0100.EN.R.0003.00

January 5, 2026

Town of Plympton-Wyoming

Englobe Reference No.: 02509562.0100.EN.R.0003.00

Prepared by:



Emily Brook, P.Eng., QP_{ESA}
Environmental Engineer
Environment

Reviewed by:



Kevin Barendregt, C.E.T., EP
Team Lead
Environment

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The Town of Plympton-Wyoming

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Project Manager	Zaheer Babar, M.A.Sc., RMP
Drafting	Harkiran Kaur, MES, MA

Revisions and publications log

Version No.	Date	Description
0A	December 17, 2025	Preliminary version published for comments
00	January 5, 2026	Final version published

Distribution

1 PDF copy	Josh Booth

Summary

Englobe Corp. (Englobe) was retained by The Town of Plympton-Wyoming (hereinafter referred to as the “Client”) to complete a Soil Characterization Report for the proposed reconstruction of Thames Street, Niagara Street, Main Street and installation of storm sewer in the municipal alley in Wyoming, Ontario (hereinafter referred to as the “Project Area”). Englobe understands that the Project Area is to be reconstructed 2026 and that the volume of excess soil anticipated to be generated during the reconstruction activities is unknown at this time however for budgetary purposes an excess soil volume of 4,000 cubic metres (m³) has been used.

Purpose

Englobe understands that the scope of work described herein is to be completed for the Client to support the proposed reconstruction of Thames Street, Niagara Street, Main Street and installation of storm sewer in the municipal alley at the Project Area and that the work is to be completed in general accordance with Ontario Regulation (O.Reg.) 406/19: On-Site and Excess Soil Management. Furthermore, Englobe understands that the filing of a Record of Site Condition (RSC) with the Ontario Ministry of the Environment, Conservation and Parks (MECP) is not required at this time.

The purpose of this Soil Characterization Report is to present the findings of the Englobe 2025 Field Program completed to determine the concentration of contaminants of potential concern in the soil to be excavated. This Soil Characterization Report has been completed to document the field activities and methods used, review and evaluate the field data and analytical results generated, and to identify and categorize areas (or zones) of soils which are appropriate for reuse at the Project Area, and which would require off-site reuse/disposal.

Scope

The Englobe 2024 Field Program consisted of the advancement of seven boreholes (BH01-25 through BH07-25) on November 3, 2025. Overall, the Englobe 2025 Field Program consisted of the collection of the following samples:

- All seven (7) boreholes were advanced with a drill rig to a depth of 3.7 meters below ground surface (m bgs);
- A total of twenty-two (22) soil samples [including two (2) duplicate samples for quality assurance/quality control (QA/QC) purposes] for analysis of:
 - Petroleum hydrocarbons (PHC) fractions F1-F4, benzene, toluene, ethylbenzene and xylenes (BTEX), metals and hydride-forming metals, SAR, EC and pH;

- A total of seven (7) soil samples [including one (1) duplicate sample for quality assurance/quality control (QA/QC) purposes] for analysis of :
 - Volatile organic compounds (VOCs) and organochlorine pesticides (OC Pesticides);
- A total of seventeen (17) soil samples [including two (2) duplicate samples for quality assurance/quality control (QA/QC) purposes] for analysis of polycyclic aromatic hydrocarbons (PAHs)
- A total of five (5) soil samples for analysis of modified synthetic precipitate leaching procedure (mSPLP) for mSPLP metals.

The soil analytical results were compared to criteria presented in the MECP documents titled “Soil, Ground Water and Sediment Standards for use Under Part XV.1 of the Environmental Protection Act (O.Reg. 153/04),” dated April 2011 and “On-Site and Excess Soil Management for Use Under the Environmental Protection Act,” dated October 10, 2025 [hereinafter referred to as the MECP Excess Soil Quality Standards (ESQS)]. Based on the settings of potential re-use sites (i.e., potable groundwater conditions) and the anticipated quantity of excess soil to be excavated/managed (i.e., volume greater than 350 cubic metres therefore volume independent conditions apply), the soil analytical results were assessed using:

- On-Site Reuse:
 - Table 2: Full Depth Generic SCS in a Potable Ground Water Condition for Industrial/Commercial/Community (ICC) Property Use (MECP Table 2 ICC SCS);
- Off-Site Reuse:
 - Table 2.1: Full Depth Excess Soil Quality Standards (ESQS) in a Potable Ground Water Condition for Agricultural or other Property Use (MECP Table 2.1 Ag ESQS); and,
 - Table 3.1: Full Depth Excess Soil Quality Standards (ESQS) in a Non-Potable Ground Water Condition for ICC Property Use (MECP Table 2.1 ICC ESQS); and,
 - MECP Leachate Screening Levels (LSLs), Table 1: LSLs for Excess Soil Reuse for RPIICC Property Use (MECP Table 1 RPIICC LSLs) and the Table 2.1: Full Depth Excess Soil in a Potable Ground Water Condition for Ag Property Use (MECP Table 2.1 Ag LSLs).

Conclusions

Based on the analytical results, two (2) soil zones were identified within the Project Area where soils would be subject to a specific soil management program during the construction activities. Note that leachate results remain pending at the time of issue of this draft report. A summary of the soil management requirements for these soil zones are as follows:

Soil Zone 1: The soils specified in Soil Zone 1, if deemed geotechnically suitable, are appropriate for reuse within the Project Area (i.e., meet the Table 2 ICC SCS). However, if these soils are deemed as excess soil and require exportation from the Project Area, then these soils are considered to be suitable for reuse at an off-site location accepting soil meeting the MECP Table 2.1 Ag ESQS with variance for salt impacts.

Soil Zone 2: Soils specified in Soil Zone 2 at select locations within the Project Area exceeds the MECP Table 3.1 ICC ESQS at depths of 0.0 to 0.7 m bgs and meets the MECP Table 2.1 Ag ESQS at depths greater than 0.7 m bgs. As such, this zone has been split into the following 2 subzones:

Soil Zone 2A: Soils specified in Zone 2A include material at depths between 0.0 to 0.7 m bgs and exceed the MECP Table 3.1 ICC ESQS criteria. The soils specified in Soil Zone 2A exceed the applicable SCS criteria for the Project Area. Further, these soils are not considered to be suitable for reuse at an offsite location (i.e. exceed Table 3.1 ICC ESQS) and would require disposal at a suitable Class 1 Soil Management Site, licenced dump or landfill.

Soil Zone 2B: Soils specified in Zone 2B include material at depths greater than 0.7 m bgs if deemed geotechnically suitable, are appropriate for reuse within the Project Area (i.e., meet the Table 2 ICC SCS). However, if these soils are deemed as excess soil and require exportation from the Project Area, then these soils are considered to be suitable for reuse at an off-site location accepting soil meeting the MECP Table 2.1 Ag ESQS with variance for salt impacts.

If any soil from within the Project Area requires disposal at a dump or landfill, a TCLP analysis would be required prior to disposal.

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APPENDICES

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1 Introduction

Englobe Corp. (Englobe) was retained by the Town of Plympton-Wyoming (hereinafter referred to as the “Client”) to complete a Soil Characterization for the proposed reconstruction of Thames Street, Niagara Street, Main Street and installation of storm sewer in the municipal alley in Wyoming, Ontario (hereinafter referred to as the “Project Area”). The location of the Project Area is shown on the attached **Drawing 1, Appendix A**.

Englobe understands that the Project Area is to be reconstructed 2026 and that the volume of excess soil anticipated to be generated during the reconstruction activities is unknown at this time however for budgetary purposes an excess soil volume of 4,000 cubic metres (m³) has been used.

Englobe understands that the scope of work described herein is to be completed for the Client in preparation of the tender submission at the Project Area and that the work described herein is to be completed in general accordance with the document titled “Rules for Soil Management and Excess Soil Quality Standards,” dated October 10, 2025 (the “Soil Rules”), which was adopted by reference under Ontario Regulation (O.Reg.) 406/19: On-Site and Excess Soil Management, made under the Environmental Protection Act (EPA), R.S.O. 1990, c.E.19 (“O.Reg. 406/19”). Furthermore, Englobe understands that the filing of a Record of Site Condition (RSC) in accordance with O.Reg. 153/04: Records of Site Condition, Part XV.1 of the Act, made under EPA, R.S.O. 1990, c.E.19 (“O.Reg. 153/04”) is not required at this time.

Englobe previously completed an Assessment of Past Uses and Sampling and Analysis Plan for the Project Area which should be read in conjunction with this Soil Characterization Report.

The Soil Characterization Report, as per Section B (3) (1) of the Soil Rules, must include cross-sections, figures, tables and narrative descriptions. The purpose of this Soil Characterization Report is to present the findings of the Englobe 2024 Field Program completed to investigate any Potentially Contaminating Activities (PCAs) and/or Areas of Potential Environmental Concern (APECs) associated with the Project Area, as identified from the Assessment of Past Uses, which may have affected the soil quality within the areas where soil is to be excavated as part of the proposed construction activities. This Soil Characterization Report has

been completed to document the field activities and methods used, review and evaluate the field data and analytical results generated, and to identify and categorize areas (or zones) of soils which are appropriate for reuse at the Project Area and which would require off-site reuse/disposal.

1.1 Persons Involved in the Project

The name and contact details for the Project Leader for this project are provided in **Table 1-1**, below:

Table 1-1 Project Leader Details

Project Leader		
Project Leader Organization	Org. Name:	The Town of Plympton-Wyoming
	Address:	546 Niagara St. Wyoming ON N0N 1T0
Project Leader Representative	Name:	Josh Booth
	Title:	Engineering Coordinator
	Email:	jbooth@plympton-wyoming.ca
	Telephone No.:	519-845-3939

This Soil Characterization Report was supervised by Englobe's Qualified Person (QP_{ESA}) meeting the requirements of O.Reg. 153/04. The name and contact details for Englobe's QP are provided in **Table 1-2**, below:

Table 1-2 Qualified Person (QP) Details

Qualified Person (QP)		
QP Organization	Org. Name:	Englobe Corp.
	Address:	417 Exeter Road London, Ontario N6E 2Z3
QP Representative	Name:	Emily Brook, P.Eng., QP _{ESA}
	Title:	Environmental Engineer
	License Type:	Professional Engineer (P.Eng.)
	Email:	emily.brook@englobecorp.com
	Telephone No.:	519-680-3836

2

2 Background Information

2.1 Englobe: Assessment of Past Uses

Englobe completed an Assessment of Past Uses (APU) for the Project Area and the findings are summarized in a draft document titled:

- *“Assessment of Past Uses, Proposed Reconstruction of Thames St., Niagara St. and Main St., Wyoming, Ontario.”* Dated December 17, 2025.

Based on the information obtained and reviewed as part of the Assessment of Past Uses, current and/or historic PCAs associated with the Project Area and surrounding properties were identified, resulting in APECs within the Project Area. A summary of the PCA and associated APEC identified at the Project Area are summarized in **Table 2-1** and are shown on **Drawing 2** in **Appendix A**.

Table 2-1 Areas of Potential Environmental Concern

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	Entire Project Area	30. Importation of Fill Material of Unknown Quality.	Entire Project Area	PHCs F1 to F4, BTEX, PAHs, Metals and Inorganics	Soil
APEC 2	Road Right of Way	Unspecified PCA - Use of De-Icing Salt	Road Right of Way	EC. SAR	Soil
APEC 3	Main St.	22. Fertilizer Manufacturing, Processing and Bulk Storage. 58. Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners.	510/532 Main St.	PHCs F1 to F4, VOC, PAHs, Metals and Inorganics, OC Pesticides	Soil

APEC	Location of APEC	Potentially Contaminating Activity (PCA)	Location of PCA	Contaminants of Potential Concern	Media Potentially Impacted
		59. Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products. 12. Concrete, Cement and Lime Manufacturing			
Notes: APEC - Area of Potential Environmental Concern PHCs F1 to F4 - Petroleum Hydrocarbons Fractions F1 to F4 BTEX - Benzene, Toluene, Ethylbenzene and Xylenes VOCs - Volatile Organic Compounds SAR - Sodium Adsorption Ratio			PCA - Potentially Contaminating Activity PAHs - Polycyclic Aromatic Hydrocarbons EC - Electrical Conductivity		

2.2 Englobe: Sampling and Analysis Plan

Englobe completed a Sampling and Analysis Plan (SAP) for the Project Area and the findings are summarized in a draft document titled:

- *“Sampling and Analysis Plan, Proposed Reconstruction of Thames St., Niagara St., and Main St. Wyoming”* Dated December 17, 2025.

The Sampling and Analysis Plan outlines the Englobe 2025 Field Program developed to investigate the soil quality with respect to the APECs identified at the Project Area. A summary of the borehole nomenclature, sampling intervals, sample frequency, and associated analytical test parameters which were included in the Sampling and Analysis Plan are summarized in **Table 2-2**, below.

Table 2-2 Sampling and Analysis Plan – Englobe 2025 Field Program

Borehole ID ¹	Associated APEC(s)	Location	Approx. Borehole Depth	Soil Sample Collection Intervals ^{2,3}	Parameters for Submission
BH01-25	APEC 1 APEC 2	Intersection of the storm sewer municipal alley and Ontario St.	3 m	Fill - 1 sample	PHCs F1 to F4, VOCs, SVOCs O.Reg. 153/04 Metals, EC, SAR, pH
				Native - 1 sample	PHCs F1 to F4, VOCs, SVOCs O.Reg. 153/04 Metals, EC, SAR, pH
BH02-25	APEC 1 APEC 2	Across from municipal address 511 Thames St.	3 m	Fill - 1 sample	PHCs F1 to F4, BTEX, PAHs O.Reg. 153/04 Metals, EC, SAR, pH
				Native - 2 samples	PHCs F1 to F4, BTEX, O.Reg. 153/04 Metals, EC, SAR, pH
BH03-25	APEC 1 APEC 2	Intersection of the storm sewer municipal alley and Thames St.	3 m	Fill - 1 sample	PHCs F1 to F4, BTEX, PAHs O.Reg. 153/04 Metals, EC, SAR, pH
				Native - 2 samples	PHCs F1 to F4, BTEX, O.Reg. 153/04 Metals, EC, SAR, pH
BH04-25	APEC 1 APEC 2	Across from municipal address 491 Thames St.	3 m	Fill - 1 sample	PHCs F1 to F4, BTEX, PAHs O.Reg. 153/04 Metals, EC, SAR, pH
				Native - 2 samples	PHCs F1 to F4, BTEX, O.Reg. 153/04 Metals, EC, SAR, pH
BH05-25		Across from municipal	3 m	Fill - 1 sample	PHCs F1 to F4, BTEX, PAHs O.Reg. 153/04 Metals, EC, SAR, pH

Borehole ID ¹	Associated APEC(s)	Location	Approx. Borehole Depth	Soil Sample Collection Intervals ^{2, 3}	Parameters for Submission
	APEC 1 APEC 2	address 515 Niagara St.		Native - 2 samples	PHCs F1 to F4, BTEX, O.Reg. 153/04 Metals, EC, SAR, pH
BH06-25	APEC 1 APEC 2	Intersection of the storm sewer municipal alley and Niagara St.	3 m	Fill - 1 sample	PHCs F1 to F4, BTEX, PAHs O.Reg. 153/04 Metals, EC, SAR, pH
				Native - 2 samples	PHCs F1 to F4, BTEX, O.Reg. 153/04 Metals, EC, SAR, pH
BH07-25	APEC 1 APEC 2 APEC 3	Intersection of the storm sewer municipal alley and Main St.	3 m	Fill - 1 sample	PHCs F1 to F4, VOC, PAHs, OC Pesticides, O.Reg. 153/04 Metals, EC, SAR, pH
				Native - 2 samples	PHCs F1 to F4, VOC, PAHs, OC Pesticides,, O.Reg. 153/04 Metals, EC, SAR, pH

NOTES:

APEC - Area of Potential Environmental Concern

PHCs F1 - F4 - Petroleum Hydrocarbons, Fractions F1 to F4

PAHs - Polycyclic Aromatic Hydrocarbons

SAR - Sodium Adsorption Ratio

VOC - Volatile Organic Compounds

mbgs - metres below ground surface

BTEX - Benzene, Toluene, Ethylbenzene and Xylenes

EC - Electrical Conductivity

OC Pesticides - Organochlorine Pesticides

¹ The proposed borehole locations are shown on **Drawing 3** in **Appendix A**.

² Soil samples will be collected at regular intervals using split-spoon samplers to the termination depth of each borehole. Soil samples submitted for analysis will be determined based on 'worst-case' visual/olfactory evidence, total organic vapours (TOVs) and to properly characterize the full depth of soil anticipated to be excavated during construction.

³ Fill material that does not meet the definition of 'soil' and/or 'crushed rock' within O.Reg. 406/19 will not be analyzed. Englobe's QP, in consultation with the Englobe field staff, will make a determination on the material definition(s).

3

3 Scope of Work

3.1 Overview of the Englobe 2025 Field Program

The scope of work for the Englobe 2025 Field Program was developed to characterize the environmental quality of soil within the Project Area and consisted of the following tasks:

- Coordinate the mobilization and demobilization of all personnel and equipment required to complete the work;
- Review public and private utility locates completed by the Client;
- Oversee the drilling of seven (7) boreholes to maximum depths of 3.7 metres below grade (mbg).
- Collect soil samples from each borehole for field screening to identify visual/olfactory evidence of impacts and measure total organic vapours (TOVs) using a hand-held gas meter;
- Submit select soil samples from each borehole to an accredited laboratory for chemical analysis of petroleum hydrocarbons (PHCs) fractions F1 to F4, including benzene, toluene, ethylbenzene and xylenes (BTEX), metals and electrical conductivity (EC), sodium adsorption ratio (SAR), pH, volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and organochlorine pesticides (OC Pesticides);
- Analyze select soil samples for leachate analysis of modified Synthetic Precipitation Leaching Procedure (mSPLP);
- Prepare and submit field duplicate soil samples for quality assurance/quality control (QA/QC) purposes. Duplicate samples submitted at a frequency of one (1) for every 10 samples for each parameter analyzed;
- Evaluate and interpret the field data and analytical results; and,

- Prepare a summary report documenting the field methodologies and the findings of the Englobe 2025 Field Program.

3.2 Deviations from Scope of Work

An increased frequency of PAH, VOC and OC Pesticide samples were submitted for laboratory analysis due to the anticipated volume of excess soil to result from each of the corresponding APECs.

3.3 Media Investigated

Media investigated as part of this Soil Characterization Report consisted of soil collected during the Englobe 2025 Field Program completed by Englobe in November 2025. The Englobe 2025 Field Program consisted of the collection of the following samples:

Table 3-1 Media Investigated

Chemical Testing Parameters	Minimum No. of Samples as presented in SAP (Actual No. of Samples Collected)	Minimum No. of Field Duplicate Samples as presented in SAP (Actual No. of Samples Collected)
Metals & Inorganics, including EC, SAR, pH	20 (20)	2 (2)
PHCs and BTEX	20 (20)	2 (2)
PAHs	10 (17)	1 (1)
VOCs	3 (6)	1 (1)
OC Pesticides	3 (6)	1 (1)
mSPLP Metals	5 ¹ (5 ¹)	-
Notes: SAP - Sampling and Analysis Plan PHCs F1 to F4 - Petroleum Hydrocarbons Fractions F1 to F4 BTEX - Benzene, Toluene, Ethylbenzene and Xylenes SAR - Sodium Adsorption Ratio EC - Electrical Conductivity PAHs - Polycyclic Aromatic Hydrocarbons VOCs - Volatile Organic Compounds OC Pesticides - Organochlorine Pesticides SPLP - Synthetic Precipitation Leaching Procedure ¹ As required by O.Reg.406/19, leachate must be analyzed for contaminants for which soil to groundwater component values are not derived, and for contaminants with analytical limitations.		

In general, Englobe followed the procedures for sampling soil as specified the MECP document titled “Guidance on Sampling and Analytical Methods for Use at Contaminated Sites in Ontario,” dated December 1996, and in general accordance with O.Reg. 153/04, as amended.

3.4 Physical Impediments

There were no significant physical impediments encountered during the completion of the Englobe 2025 Field Program

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4 Methodology

Following clearance of public and private utility locates, a total of seven (7) boreholes (BH01-25 to BH07-25) were advanced throughout the Project Area on November 3, 2025. The boreholes were advanced to a depth of approximately 3.7 m bgs. The approximate borehole locations are shown on the attached **Drawing 3**, contained in **Appendix A**.

The Englobe 2025 Field Program was overseen by a member of Englobe's field staff who documented the following:

- Soil descriptions and stratigraphy details for each borehole;
- Visual and/or olfactory evidence of impacts (i.e. odours, staining, deleterious matter);
- Field screening results, including measurements of total organic vapours (TOVs) using a hand-held gas meter (i.e. Mini Rae 3000);
- Sampling intervals and parameters selected for analysis;
- Evidence of groundwater, including depth to groundwater measurements (if applicable); and,
- The presence (or absence) of free-flowing product encountered in each borehole.

4.1 Collection, Handling, Storage and Analysis of Soil Samples

The collection, handling, storage and analysis of soil samples was completed in accordance with Section 47 of O.Reg. 153/04 and the Ministry of Environment, Conservation and Parks (MECP) document titled *"Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality,"* dated March 9, 2004 and amended February 19, 2021 ("Analytical Protocol").

4.1.1 Sample Collection

During the borehole drilling activities, soil samples were collected at various depth interval for visual and olfactory screening, TOV headspace measurements, and laboratory chemical analysis. Disposable nitrile gloves were worn when handling soil and were changed between samples.

Soil vapour headspace readings were completed on all soil samples using a MiniRae 3000 Portable Gas Detector (Type 101) set to methane-response elimination mode and calibrated with hexane and isobutylene reference gases. The soil samples were allowed to equilibrate to the ambient air temperature prior to measurement.

Samples selected for laboratory chemical analysis were collected into clean, laboratory-supplied containers provided with necessary preservatives and placed in an ice-chilled cooler to minimize the potential for chemical degradation and volatilization. Sample containers were labelled with a unique sample number, project reference, date, and time of sampling.

Soil samples were selected for laboratory chemical analysis on the basis of olfactory evidence of odours, physical evidence of staining or deleterious matter, headspace readings, and/or evaluation of analytical test groups associated with specific APECs.

4.1.2 Soil Analysis

The soil samples selected for laboratory chemical testing were submitted to Bureau Veritas (BV) of Mississauga, Ontario. BV is recognized as a Standards Council of Canada (SCC) accredited laboratory that conforms to the requirements of International Standard ISO/IEC 17025:2017 and conditions for accreditation established by the SCC.

4.2 Borehole Mapping and Elevation Surveying

The Universal Transverse Mercator (UTM) coordinates and elevation survey of the ground surface and top of the newly installed monitoring well casing was completed using Real Time Kinematic (RTK) Global Positioning System (GPS) survey equipment. The survey locations and elevations are based on real-time coordinates acquired by first setting up a base station, running a static survey and then using the Canadian Spatial Reference System (CSRS) Precise Point Positioning (PPP) tool (provided by Natural Resources Canada) to compute a higher accuracy position of the raw Global Navigation Satellite System (GNSS) data. All UTM coordinates are based in Zone 17U.

The geodetic coordinates and ground surface elevations obtained for each borehole advanced as part of the Englobe 2025 Field Program are shown on the attached Borehole Logs, contained in **Appendix B**.

4.3 Quality Assurance/Quality Control (QA/QC)

QA/QC measures were incorporated into the field sampling and laboratory analytical programs to evaluate the field and analytical data for acceptable accuracy, precision, representativeness, and comparability. Specific QA/QC measures were followed in relation to equipment decontamination, equipment calibration, sample collection and handling, field documentation, and contractor provision.

The borehole drilling was undertaken by an MECP-licensed drilling contractor in accordance with O.Reg. 903 using appropriate equipment, methodologies, and materials as documented by Englobe field personnel. Specific procedures pertaining to the characterization and description of soil cores and, by extension, subsurface conditions were followed by trained field personnel.

Decontamination procedures were followed during the soil sampling activities, including:

- All drilling and sampling equipment having potential to come into contact with contaminated soil and/or groundwater was decontaminated prior to and following each sample. Decontamination consisted of washing equipment with a non-phosphate detergent and distilled water mixture.
- New disposable chemical resistant nitrile gloves were worn for the handling and collection of soil samples from each retrieved core to minimize the potential for cross-contamination.

Specific procedures were followed for the documentation, handling, and transport of the soil samples, including:

- Soil samples upon collection were placed directly in ice-chilled coolers;
- Soil samples were assigned unique identification numbers and submitted by the sampler to the contractual laboratory following chain of custody protocols within required holding times; and,
- Quality control soil samples were collected to provide a quantitative evaluation of the accuracy of the field sampling and laboratory analytical procedures. Duplicate soil samples at a general frequency of one (1) for every ten (10) samples for each parameter analyzed were submitted to the contractual laboratory to evaluate the precision and reproducibility of the field sampling and laboratory analytical procedures. Field quality control results were compared to applicable alert criteria.

The laboratory, BV, performed chemical analyses following referenced methods incorporating QA/QC protocols as provided by the MECP and Canada Wide Standards for Petroleum Hydrocarbons. Chemical analyses for specific analytical test groups were performed in general accordance with the Analytical Protocol document.

Analytical test group specific quality control samples were prepared and analyzed by the laboratory, including:

- Laboratory duplicate samples to evaluate method reproducibility and sample homogeneity;
- Method blanks to evaluate potential bias;
- Spike blanks to evaluate method accuracy;
- Surrogate compounds to evaluate extraction efficiency;
- Matrix spikes to evaluate extraction efficiency and matrix interferences; and,
- QC standards to evaluate method accuracy.

Quality control results reported by the contractual laboratory were compared to applicable alert and control criteria and were presented in the quality control reports accompanying the certificates of analysis (COAs). The laboratory QA/QC results are discussed in **Section 5.6**.



5 Results

5.1 Topography, Geology and Hydrology

Englobe reviewed a copy of the 2019 Ontario Base Map (OBM) provided by Ministry of Natural Resources (MNR) online mapping. Based on a review of the contour lines from the OBM, the topography of the Project Area is generally flat with a slight downward slope to the south. The Project Area is located at approximately 215 metres above sea level (masl).

The Project Area is located within the physiographic region identified as the Till Moraines (Chapman and Putnam, 2007). The Project Area is anticipated to consist of clay to silt-textured till glaciolacustrine deposits. There are scattered areas of sand, gravel and minor silt and clay deposits through the area (Ontario Geological Survey, 2010). The bedrock geology consists of shale of the Kettle Point Formation, which was deposited during the Upper Devonian Period (Ontario Geological Survey, 2011). Based on borehole logs in the area, bedrock is located approximately 35-42 metres below the surface.

The closest waterbody is the Stonehouse Drain which flows southward and is located approximately 50 metres from the Main St. portion of the Project Area. Given the flow direction of the drain, local groundwater flow direction is expected to be south. It should be noted that the underground utility infrastructure located in the Project Area (if any) may influence the groundwater flow direction(s) as utility corridors may act as preferential flow pathways. However, an intrusive subsurface investigation(s) would be required to confirm the groundwater flow direction at the Project Area.

Based on the Englobe 2025 Field Program described herein and a review of the borehole logs, the stratigraphy within the Project Area was comprised of predominantly granular fill underlain by silty clay. No visual and/or olfactory evidence of impacts were observed during the advancement of the boreholes as part of the Englobe 2025 Field Program. The stratigraphic profile is shown in the Borehole Logs provided in **Appendix B**, for reference.

5.2 Depth to Groundwater

Groundwater was not encountered during the Englobe 2025 Field program. It is noted that groundwater levels may fluctuate during different seasons of the year and can be expected to rise during wet periods of the year.

5.3 Chemical Analysis

Representative soil samples were selected from each borehole for chemical analysis based on TOV headspace readings and visual/olfactory evidence of potential contamination, or at locations where potential contaminants may be expected (i.e. fill materials or soil near the water table, etc.). Selected soil samples collected from the boreholes were submitted to BV for analysis of one or more of the following parameters:

- PHCs F1 to F4;
- BTEX;
- VOCs;
- PAHs;
- OC Pesticides;
- Metals and Inorganics, including EC, SAR and pH; and,
- mSPLP Metals.

5.4 Applicable Standards

5.4.1 On-Site Soil Reuse Quality Assessment Criteria

The soil analytical results were compared to the criteria presented in the MECP document titled “Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act,” dated July 1, 2011 (hereinafter referred to as the MECP Site Condition Standards).

The soil analytical results were assessed using the MECP Site Condition Standards (SCS), –Table 2: Full Depth Generic Site Condition Standards (SCS) in a Potable Ground Water Condition, Industrial/Commercial/Community (ICC) Property Use)- Coarse-Grained Soils (MECP Table 2 ICC SCS).

The rationale for the selection of the MECP Table 2 ICC SCS is as follows:

- The current land use of the Project Area is a road right of way and municipal alley;
- There were four (4) domestic water supply wells located within a 250 m radius of the Project Area;
- Soil pH analysis completed on all soil samples collected as part of this investigation were within the range specified by O. Reg. 153/04 (5 to 9 for surface soil). Therefore, the Project Area is not considered to be an environmentally sensitive site due to soil pH;
- There are no “environmentally-sensitive areas” within 30 m of the Project Area;
- There are no endangered or threatened species identified by the Species at Risk in Ontario (SARO) database; and,
- There are no surface water bodies within 30 m of the Project Area.

5.4.2 Off-Site Soil Reuse Quality Assessment Criteria

The soil analytical results were compared to the criteria presented in the MECP document titled *“Rules for Soil Management and Excess Soil Quality Standards,”* dated October 10, 2025 (hereinafter referred to as the MECP ESQS). Based on the preliminary anticipated quantity of 4,000 m³ of excess soil to be excavated/managed (i.e. volume greater than 350 cubic metres) the volume-independent MECP ESQS were selected to assess the soil quality at the Project Area. Furthermore, based on the settings of potential reuse sites (i.e. non-potable groundwater conditions), to determine appropriate off-site reuse of the excess soil, the MECP ESQS for use in shallow soils in a potable groundwater condition were selected for assessment purposes.

The soil analytical results were assessed using the MECP SCS, Table 2.1: Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Ag Property Use (MECP Table 2.1 ICC ESQS) and Table 3.1: Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for ICC Property Use (MECP Table 3.1 ICC ESQS);

5.4.3 Leachate Assessment Criteria

The analytical results for the samples submitted for leachable metals using SPLP were compared to the volume independent MECP Leachate Screening Levels (LSLs), Table 1: Leachate Screening Levels for Excess Soil Reuse for RPIICC Property Use (MECP Table 1 RPIICC LSLs), the Table 2.1: Leachate Screening Levels for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Ag Property Use (MECP Table 2.1 Ag LSLs) and the Table 3.1: Leachate Screening Levels for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for ICC Property Use (MECP Table 3.1 ICC LSLs), presented in the Soil Rules.

5.5 Soil Quality

The location of the boreholes advanced during the work program are illustrated on **Drawing 3** and a summary of soil quality results is presented on **Drawings 4 and 5** of **Appendix A**. Borehole logs are provided in **Appendix B**. The analytical results for PHCs F1-F4, BTEX, metals and inorganics, VOCs, PAHs, and OC Pesticides from the Englobe 2025 Field Program are summarized in **Tables 101 to 105** respectively in **Appendix C**. The mSPLP results for metals are summarized in **Table 106** in **Appendix C**. The laboratory certificates of analysis provided by BV for soil samples collected during the work program are provided in **Appendix D**.

5.5.1 Assessment to MECP Table 2 ICC SCS

Based on a review of the laboratory analytical results, the following exceedances of the MECP Table 2 ICC SCS were noted:

- PHC fraction F4G-SG, and SAR was detected at concentrations exceeding the MECP Table 2 ICC SCS in a soil sample collected from BH03-25 at depths ranging from 0.0-0.7 m bgs;
- SAR was detected at concentrations exceeding the MECP Table 2 ICC SCS in a soil sample collected from BH06-25 at depths ranging from 0.0-0.7 m bgs;

All other samples met the MECP Table 2 ICC SCS for all analyzed parameters.

5.5.2 Assessment to MECP Table 2.1 Ag ESQS

Based on a review of the laboratory analytical results, the following exceedances of the MECP Table 2.1 Ag ESQS were noted:

- PHC fraction F2 was detected at a level exceeding the MECP Table 2.1 Ag ESQS a soil sample collected from BH02-25 at a depth ranging from 0.0 to 0.7 m bgs;
- PHC fractions F2, F3 and F4G-SG was detected at levels exceeding the MECP Table 2.1 Ag ESQS a soil sample collected from BH03-25 at a depth ranging from 0.0 to 0.7 m bgs;
- EC and SAR were detected at levels exceeding the MECP Table 2.1 Ag ESQS in all soil samples collected from BH02-25 and BH03-25, and in BH05-25 at depths ranging from 0.0 to 1.5 m bgs, and in BH06-25 at depths ranging from 0.0 to 0.7 m bgs.

All other samples met the MECP Table 2.1 Ag ESQS for all analyzed parameters.

5.5.3 Assessment to MECP Table 3.1 ICC ESQS

Based on a review of the laboratory analytical results, the following exceedances of MECP Table 3.1 ICC ESQS were noted:

- PHC fraction F2 was detected at a level exceeding the MECP Table 3.1 ICC ESQS a soil sample collected from BH02-25 at a depth ranging from 0.0 to 0.7 m bgs;
- PHC fractions F2, F4G-SG and SAR were detected at levels exceeding the MECP Table 3.1 ICC ESQS a soil sample collected from BH03-25 at a depth ranging from 0.0 to 0.7 m bgs; and,
- SAR was detected at concentrations exceeding the MECP Table 3.1 ICC SCS in a soil sample collected from BH06-25 at depths ranging from 0.0-0.7 m bgs;

All other samples met the MECP Table 3.1 ICC ESQS for all analyzed parameters.

5.5.4 Assessment to MECP Table 1 RPIICC and Table 3.1 ICC LSLs

Englobe notes that mSPLP analysis is not required if the bulk analysis meets the MECP Table 1 RPIICC SCS, and the MECP Table 1 RPIICC SCS value is based on background concentrations, and not the analytical reporting limit. As a result, only select parameters were included in Englobe's assessment.

Table 5-1 Summary of mSPLP Analysis Selection

Parameter(s)	mSPLP Required?	Reasoning
PHCs F1 to F4 and BTEX	No	No LSLs exist for these parameters.
PAHs	No	No LSLs exist for these parameters.
VOCs	No	Bulk analysis results meet the MECP Table 1 SCS and the MECP Table 1 SCS value is based on background concentrations for these parameters. ¹

Parameter(s)	mSPLP Required?	Reasoning
OC Pesticides	No	Bulk analysis results meet the MECP Table 1 SCS and the MECP Table 1 SCS value is based on background concentrations for these parameters. ¹
Molybdenum	Yes	Bulk analysis results exceeded the MECP Table 1 RPIICC SCS for Molybdenum for the soil samples generally throughout the Project Area.
Silver	Yes	Bulk analysis of all samples met the MECP Table 1 SCS, however the MECP Table 1 SCS value is based on the analytical reporting limit. ¹
Thallium		
All other metals and inorganics	No	Bulk analysis results meet the MECP Table 1 SCS and the MECP Table 1 SCS value is based on background concentrations for these parameters. ¹
Notes: MECP - Ministry of Environment, Conservation and Parks mSPLP - modified Synthetic Precipitation Leaching Procedure SCS - Site Condition Standards PHCs F1 to F4 - Petroleum Hydrocarbons Fractions F1 to F4 BTEX - Benzene, Toluene, Ethylbenzene and Xylenes SAR - Sodium Adsorption Ratio EC - Electrical Conductivity PAHs - Polycyclic Aromatic Hydrocarbons VOCs - Volatile Organic Compounds OC Pesticides - Organochlorine Pesticides LSLs - Leachate Screening Levels ¹ Determined as per Section A(1)(7) of the Soil Rules.		

Englobe's Qualified Person (QP) selected soil samples for mSPLP analysis after determining the sampling locations where 90% (or higher) of the highest contaminant concentrations were found.

5.6 Quality Assurance/Quality Control

Soil sampling undertaken during the Englobe 2025 Field Program followed written procedures to ensure sample integrity and the collection of reliable data. Soil samples were collected into pre-cleaned test group specific containers prepared with any necessary preservatives by the contractual laboratory, BV. Sample integrity was maintained by placing containerized samples immediately upon collection into ice chilled insulated coolers to minimize chemical activity and delivered to the laboratory within test group specific holding times. Decontamination protocols were followed and new disposable sampling equipment (i.e. gloves) was used to minimize the potential for sample cross contamination and bias.

Certificates of analysis prepared by the contractual laboratory were received for all soil samples analyzed. Review of the certificates of analysis indicated that they were prepared in a manner consistent with the requirements of O.Reg. 153/04 and O.Reg. 406/19. Copies of the laboratory certificates of analysis are presented in **Appendix D**, for reference.

QA/QC samples were collected and analyzed as part of the Englobe 2025 Field Program to ensure the reliability of the analytical data. The QA/QC samples included the collection of soil duplicates to evaluate the precision/reproducibility of the field and analytical procedures. A summary of the field duplicates is provided in **Table 5-2**, below.

Table 5-2 Summary of QA/QC Program

Sample Location	Sample ID	Duplicate Sample ID	Media	Analysis Performed
BH07	DUP-1	BH07-25 SA2	Soil	PHCs, VOCs, PAHs, OC Pesticides, Metals and Hydride-Forming Metals, EC, SAR and pH
BH04	DUP-2	BH04-25 SA1	Soil	PHCs, BTEX, PAHs Metals and Hydride-Forming Metals, EC, SAR and pH
Notes: PHCs F1 to F4 - Petroleum Hydrocarbons Fractions F1 to F4 BTEX - Benzene, Toluene, Ethylbenzene and Xylenes SAR - Sodium Adsorption Ratio EC - Electrical Conductivity PAHs - Polycyclic Aromatic Hydrocarbons VOCs - Volatile Organic Compounds OC Pesticides - Organochlorine Pesticides				

A quantitative evaluation of the soil duplicate sample results was completed by calculating the relative percent difference (RPD) and comparing the results to applicable alert criteria. The calculation of RPDs is only valid if an analyte is detected in both samples at a concentration at least five times the method detection limit (MDL). Alert criteria are matrix and test group specific. For parameters analyzed in the soil duplicate samples, considering matrix heterogeneity, an alert criterion of 60% was applied.

The results of the calculation of RPDs are summarized as follows:

- For BTEX/VOCs, PAHs and OC Pesticides none of the assessed parameters were detected at concentrations at least five times the laboratory MDLs and, as such, RPDs could not be calculated;
- For PHCs, and metals and inorganics parameters, the RPDs, where calculable, were all below the 60% alert criteria;

Based on review of the field and laboratory QA/QC sample results, no data qualifications were required, and the quality of the analytical data was deemed acceptable to meet the objectives of the Englobe 2025 Field Program and did not affect decision making related to the findings of this report.



6 Review and Evaluation

Based on the analytical results obtained during the Englobe 2025 Field Program, as documented in this Soil Characterization Report, two (2) distinct soil zones were identified within the Project Area where soils would be subject to a specific soil management program during the construction activities. When determining specific reuse sites and/or disposal sites for this soil during construction, soil may be required to be compared to other criteria. The approximate spatial extent of Soil Zones have generally been delineated at the borehole location(s) and the limits of the Project Area as shown in the attached **Drawing 5**, contained in **Appendix A**.

6.1 Soil Zone 1: Soil Meeting the MECP Table 2.1 Ag ESQS/LSL (except EC/SAR) and MECP Table 2 ICC SCS

A review of the laboratory analytical results indicates that the soil quality in select locations at the Project Area meets the MECP Table 2.1 Ag ESQS/LSL (except EC/SAR) for all assessed parameters.

The soils specified in Soil Zone 1, if deemed geotechnically suitable, are appropriate for reuse within the Project Area (i.e., meet the Table 2 ICC SCS). However, if these soils are deemed as excess soil and require exportation from the Project Area, then these soils are considered to be suitable for reuse at an off-site location accepting soil meeting the MECP Table 2.1 Ag ESQS/LSL with variance for salt impacts and should be managed under the following conditions, as outlined in Section D (1) (3) of the Soil Rules:

- Salt impacted soil is finally placed at the Project Area at one (1) of the following locations:
 - Where it is reasonable to expect that the soil will be affected by the same chemicals as a result of continued application of a substance for the safety of vehicular or pedestrian traffic under conditions of snow or ice;
 - At an industrial or commercial property use and to which non-potable standards would be applicable; or

- At least 1.5 m below the surface of the soil.
- Salt impacted soil is not finally placed at the Project Area at any of the following locations:
 - Within 30 metres of a waterbody; or
 - Within 100 metres of a potable well / an area intended for future potable well; or
 - Where crops / pasture activities are occurring / planned (unless the soil is placed 1.5 m or greater below the soil surface).

Further, if required to be disposed of at a dump or landfill, a TCLP analysis would be required prior to disposal.

6.2 Soil Zone 2: Soil Exceeding the MECP Table 3.1 ICC ESQS/LSL and MECP Table 2 ICC SCS

A review of the laboratory analytical results indicates that the soil quality at select locations within the Project Area exceeds the MECP Table 3.1 ICC ESQS/LSL at depths of 0.0 to 0.7 m bgs and meets the MECP Table 2.1 Ag ESQS/LSLs (except EC/SAR) at depths greater than 0.7 m bgs. As such, this zone has been split into the following 2 subzones:

Soil Zone 2A: Soils specified in Zone 2A include material at depths between 0.0 to 0.7 m bgs and exceed the MECP Table 3.1 ICC ESQS criteria. The soils specified in Soil Zone 2A exceed the applicable SCS criteria for the Project Area. Further, these soils are not considered to be suitable for reuse at an offsite location (i.e. exceed Table 3.1 ICC ESQS) and would require disposal at a suitable Class 1 Soil Management Site, licenced dump or landfill.

Soil Zone 2B: Soils specified in Zone 2B include material at depths greater than 0.7 m bgs if deemed geotechnically suitable, are appropriate for reuse within the Project Area (i.e., meet the Table 2 ICC SCS). However, if these soils are deemed as excess soil and require exportation from the Project Area, then these soils are considered to be suitable for reuse at an off-site location accepting soil meeting the MECP Table 2.1 Ag ESQS/LSLs with variance for salt impacts and should be managed as outlined in Section D (1) (3) of the Soil Rules:

- Salt impacted soil is finally placed at the Project Area at one (1) of the following locations:
 - Where it is reasonable to expect that the soil will be affected by the same chemicals as a result of continued application of a substance for the safety of vehicular or pedestrian traffic under conditions of snow or ice;
 - At an industrial or commercial property use and to which non-potable standards would be applicable; or
 - At least 1.5 m below the surface of the soil.
- Salt impacted soil is not finally placed at the Project Area at any of the following locations:
 - Within 30 metres of a waterbody; or
 - Within 100 metres of a potable well / an area intended for future potable well; or
 - Where crops / pasture activities are occurring / planned (unless the soil is placed 1.5 m or greater below the soil surface).

Further, if any soil from within the Project Area requires disposal at a dump or landfill, a TCLP analysis would be required prior to disposal.

6.3 Construction Recommendations

In accordance with O.Reg. 406/19, excess soil must meet the applicable ESQS of a reuse site to be deposited on a reuse site, unless an exemption for specific parameters applies at the reuse site. It is recommended that the Contractor select a suitable reuse site (where an undertaking with a beneficial reuse has been identified (i.e., backfilling excavation, grading)) for the soil characterized at the Project Area. Soil meeting the ESQS should not be sent for disposal at a licensed landfill or dump.

Each specific reuse site should be evaluated by a QP prior to off-site removal of the excess soil from the Project Area and final deposit of the excess soil at the reuse/disposal site.

Based on the sampling and chemical testing frequencies completed as part of the QP's in-situ soil characterisation at the Project Area, some of the estimated excess soil volume of 4,000 m³ may be reused on-site or exported from the Project Area for either reuse or disposal (based on the applicable soil quality). However, some of the estimated excess soil volume of 4,000 m³ is not suitable for reuse on-site and cannot be exported to a reuse site. The soil zones illustrated on **Drawing 4 in Appendix A** should be generally adhered to during construction.

Under O.Reg. 406/19, written acceptance of the excess soil is required to be provided by the owner or operator of the reuse site to the Project Leader or their representative (such as the Contractor) prior to receipt of the excess soil from the Project Area. Furthermore, an acceptable "beneficial reuse" (i.e. backfilling excavation, grading) must be identified for the undertaking at the reuse site to permit the deposit of excess soil at the reuse site.

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7 Closure and Qualified Person (QP) Declaration

This Soil Characterization Report was completed by Emily Brook, P.Eng., QP_{ESA} and reviewed by Kevin Barendregt, C.E.T., in general accordance with the requirements of O.Reg. 406/19 and the Soil Rules Document.

The QP is of the opinion that the Project Leader has provided all the necessary information, access to the Project Area, and authorized the QP to make any inquiries of the Project Leader and operator's employees and agents, for the purpose of assisting in overseeing the preparation of the Soil Characterization Report. The QP has overseen the preparation of the Soil Characterization Report and is of the opinion that the Soil Characterization Report is complete and accurate and meets the requirements of the O.Reg. 406/19 and the Soil Rules Document to the best of the QP's knowledge.

This report is subject to the Statement of Limitations provided in **Appendix E**.

References

Englobe Corp., 2025a *Proposed Reconstruction of Thames St., Niagara St., and Main St., Wyoming, Ontario. December 17, 2025*

Englobe Corp., 2025b *Sampling and Analysis Plan, Thames St., Niagara St., and Main St., Wyoming, Ontario. December 17, 2025*

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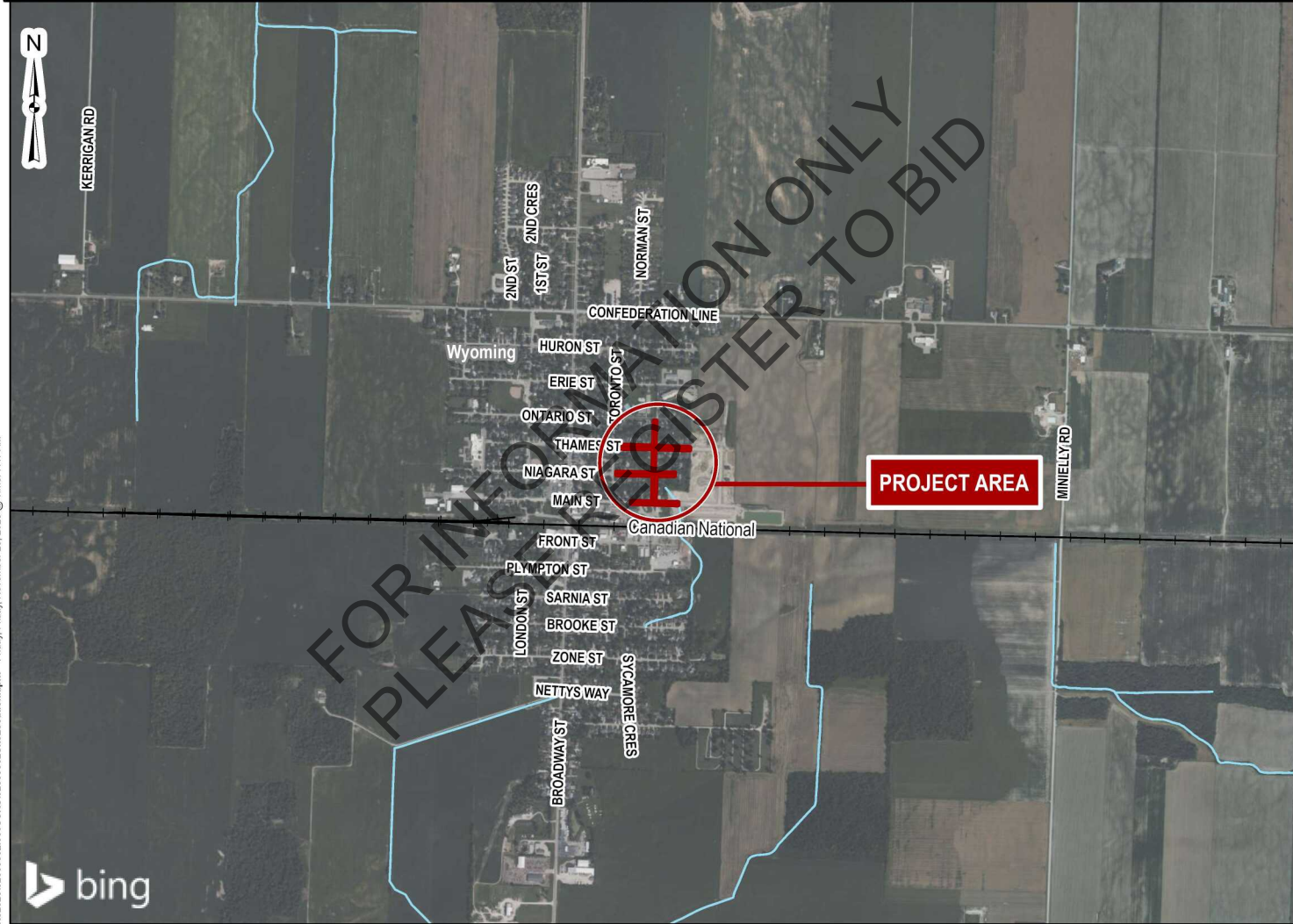
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Appendix A Drawings

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eNGLOBE



Note
This drawing shall be read in conjunction with the associated technical report.

A	11/28/2025	Draft	E.B.
Revision	Date	Issue	Approval

Client	Town of Plympton-Wyoming	Site	Thames Street and Niagara Street, Plympton-Wyoming, ON	
	Report Title	Soil Characterization Report		
	Drawing Title	Site Location Map		
	Designed By	E.B.	Date	Nov 2025
	Drawn By	H.K.	Project No.	02509562.000
	Approved By	E.B.	Figure No.	
	Scale	1:25,000		1



APEC	Potentially Contaminating Activity (PCA)	Contaminants of Potential Concern	Media Potentially Impacted
APEC 1	30. Importation of Fill Material of Unknown Quality.	PHCs F1 to F4, BTEX, PAHs, Metals and Inorganics	Soil
APEC 2	Unspecified PCA - Use of De-Icing Salt	EC. SAR	Soil
APEC 3	22. Fertilizer Manufacturing, Processing and Bulk Storage. 58. Waste Disposal and Waste Management, including thermal treatment, landfilling and transfer of waste, other than use of biosoils as soil conditioners. 59. Wood Treating and Preservative Facility and Bulk Storage of Treated and Preserved Wood Products. 12. Concrete, Cement and Lime Manufacturing	PHCs F1 to F4, VOC, PAHs, Metals and Inorganics, OC Pesticides	Soil



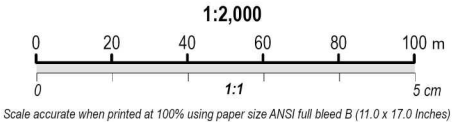
- Notes**
1. This drawing shall be read in conjunction with the associated technical report.
 2. Coordinate System: NAD 1983 CSRS UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983 CSRS
 3. Source: Google Maps Aerial (used for Illustrative Purposes only)
 4. APEC-Area of Potential Environmental Concern

Legend

- Watercourse
- Approximate Project Extent

Area of Potential Environmental Concern

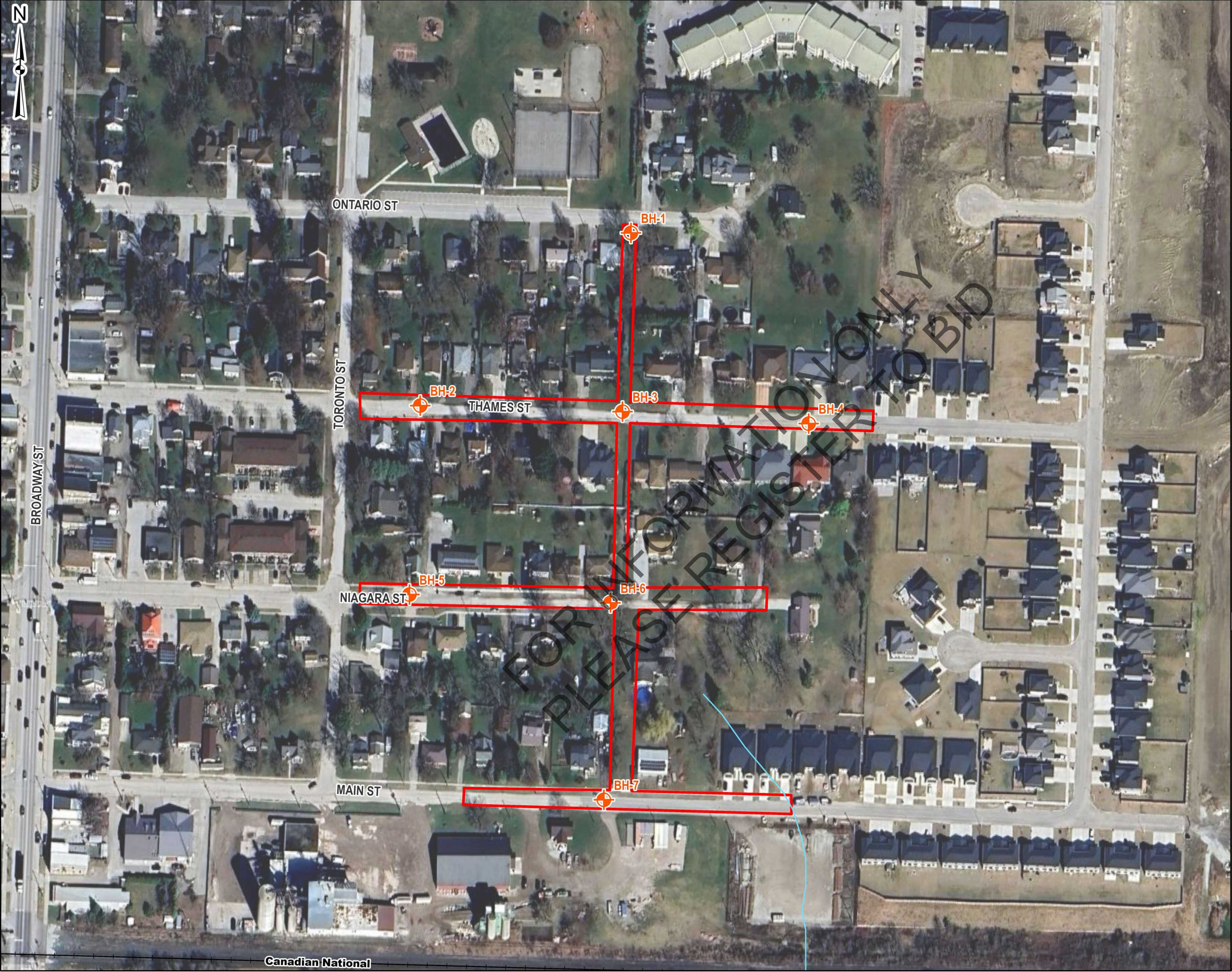
- APEC 1 and 2
- APEC 3



A	11/28/2025	Draft	E.B.
Revision	Date	Issue	Approval
Client			
Town of Plympton-Wyoming			
Site			
Thames Street and Niagara Street, Plympton-Wyoming, ON			
Report Title			
Soil Characterization Report			
Drawing Title			
Area of Potential Environmental Concern			
Designed By		Scale	
E.B.		1:2,000	
Drawn By		Date	
H.K.		Nov 2025	
Approved By		Project No.	
E.B.		02509562.000	
Figure No.		2	

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APPROX. DATE OF IMAGERY: 2025

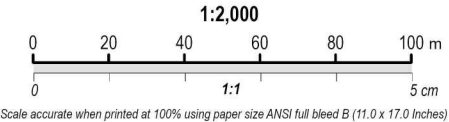


Notes

- 1. This drawing shall be read in conjunction with the associated technical report.
- 2. Coordinate System: NAD 1983 CSRS UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983 CSRS
- 3. Source: Google Maps Aerial (used for Illustrative Purposes only)
- 4. APEC-Area of Potential Environmental Concern

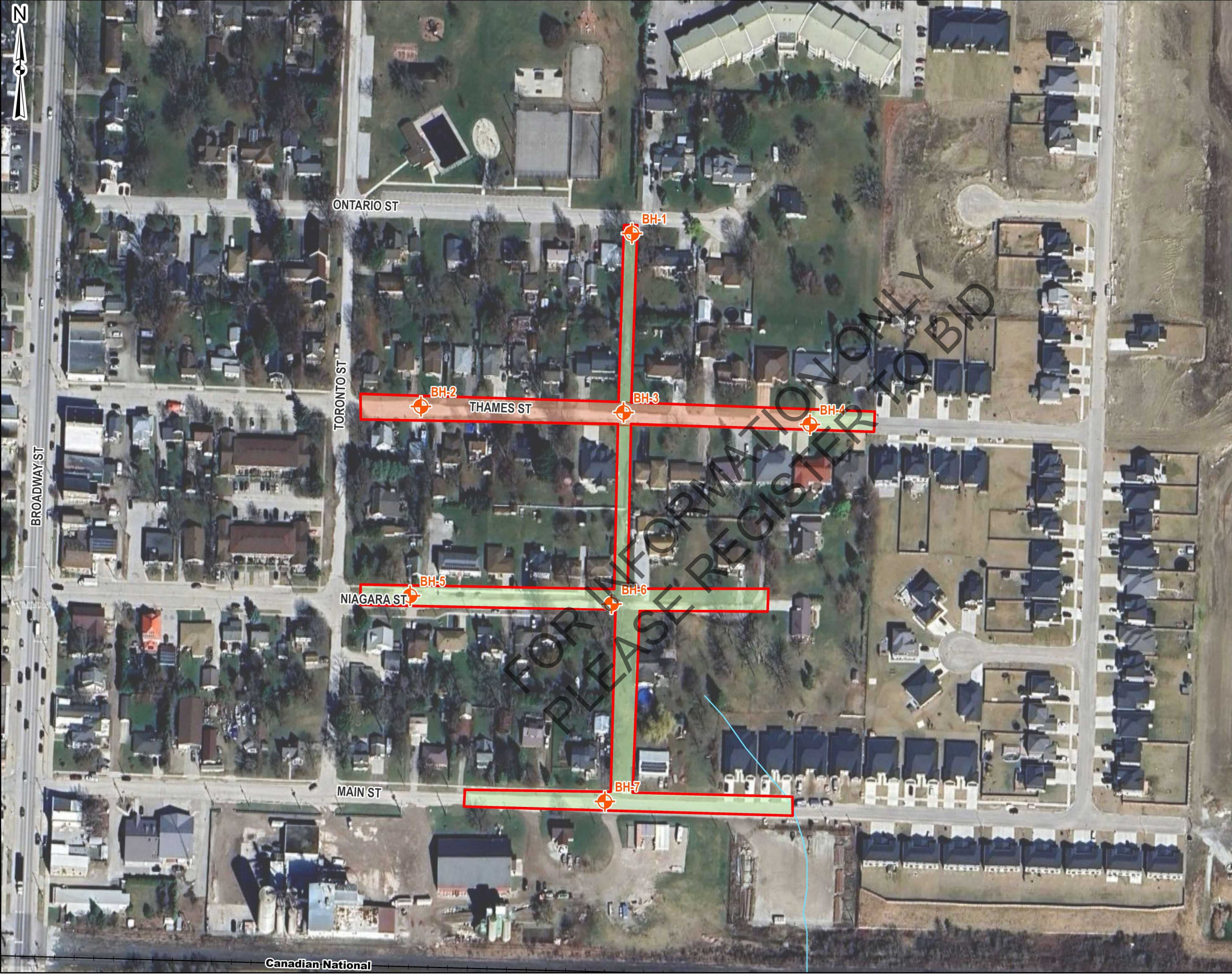
Legend

- Approximate Borehole Location (Englobe, 2025)
- Watercourse
- Approximate Project Extent



A	11/28/2025	Draft	E.B.
Revision	Date	Issue	Approval
Client			
Town of Plympton-Wyoming			
Site			
Thames Street and Niagara Street, Plympton-Wyoming, ON			
Report Title			
Soil Characterization Report			
Drawing Title			
Borehole Location Plan			
Designed By		Scale	1:2,000
E.B.		Date	Nov 2025
Drawn By		Project No.	
H.K.		02509562.000	
Approved By		Figure No.	
E.B.		3	

APPROX. DATE OF IMAGERY: 2025
Drawing: 02509562SoilZones
Folder: D:\Englobe\Projects\2025\02509562_000\SCRS\02509562SoilZones.aprx
Monday, December 1, 2025 @ Time: 1:50 PM



Notes

1. This drawing shall be read in conjunction with the associated technical report.
2. Coordinate System: NAD 1983 CSRS UTM Zone 17 T
Projection: Transverse Mercator
Datum: North American 1983 CSRS
3. Source: Google Maps Aerial (used for Illustrative Purposes only)

Legend

- Approximate Borehole Location (Englobe, 2025)
- Watercourse
- Approximate Project Extent

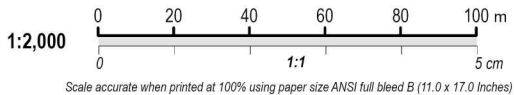
Soil Zones

Soil Zone 1 : Meets MECP Table 2.1 Ag ESQS/LSLs and MECP Table 2 ICC SCS

Soil Zone 2

Soil Zone 2A: Exceeds the MECP Table 3.1 ICC ESQS/LSLs and MECP Table 2 ICC SCS at depths between 0-0.7 mbgs

Soil Zone 2B: Meets MECP Table 2.1 Ag ESQS/LSLs and MECP Table 2 ICC SCS at depths >0.7 mbgs



A	11/28/2025	Draft	E.B.
Revision	Date	Issue	Approval

Client
Town of Plympton-Wyoming

Site
Thames Street and Niagara Street, Plympton-Wyoming, ON

Report Title
Soil Characterization Report

Drawing Title
Soil Zones

Designed By	E.B.	Scale	1:2,000
Drawn By	H.K.	Date	Nov 2025
Approved By	E.B.	Project No.	02509562.000
Figure No.	4		

Appendix B

Borehole Logs

FOR INFORMATION ONLY
PLEASE REGISTER TO BID



eNGLOBE

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Proposed Reconstruction of Thames Street, Niagara Street, Main Street and installation of storm water infrastructure Location : Wyoming, ON Completed by : MA
 Sheet No. : 1 of 1 Location : Wyoming, ON Checked by : MH

Position : E: 409060, N: 4756051 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m) X Dynamic Cone Undrained Shear Strength (kPa) ○ Unconfined ● Pocket Penetrometer + Field Vane ■ Lab Vane	Moisture / Plasticity Plastic Limit Natural Water Content Liquid Limit PL MC LL	Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments Unstabilized Water Level GRAIN SIZE DISTRIBUTION (%) (MIT) GR SA SI CL
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value						
0	214.8	GROUND SURFACE										
0.6	214.2	SILTY SANDY TOPSOIL, trace gravel, loose, brown, moist		1	SS	9				PID: 0		
1		SILTY CLAY, trace sand, trace gravel, stiff to very stiff, brown and grey (GLACIAL TILL)		2	SS	10		≈10 kPa		PID: 0		
2				3	SS	13		≈210 kPa		PID: 0		
3				4	SS	25		≈200 kPa		PID: 0		
3.7	211.1			5	SS	15		≈50 kPa		PID: 0		

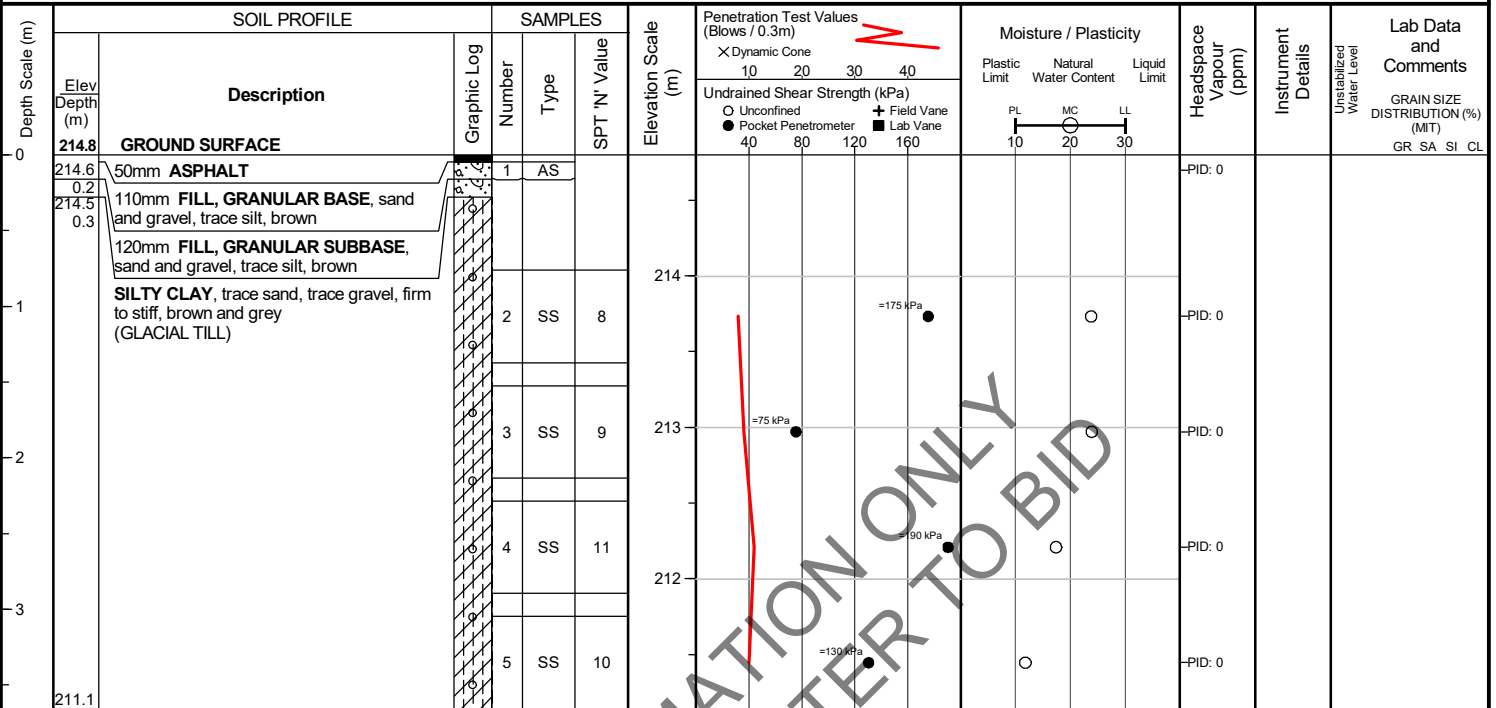
END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

FOR INFORMATION ONLY
 PLEASE REGISTER TO BID

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Proposed Reconstruction of Thames Street, Niagara Street, Main Street and installation of storm water management system
 Sheet No. : 1 of 1 Location : Wyoming, ON Checked by : MH

Position : E: 408944, N: 4755939 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers



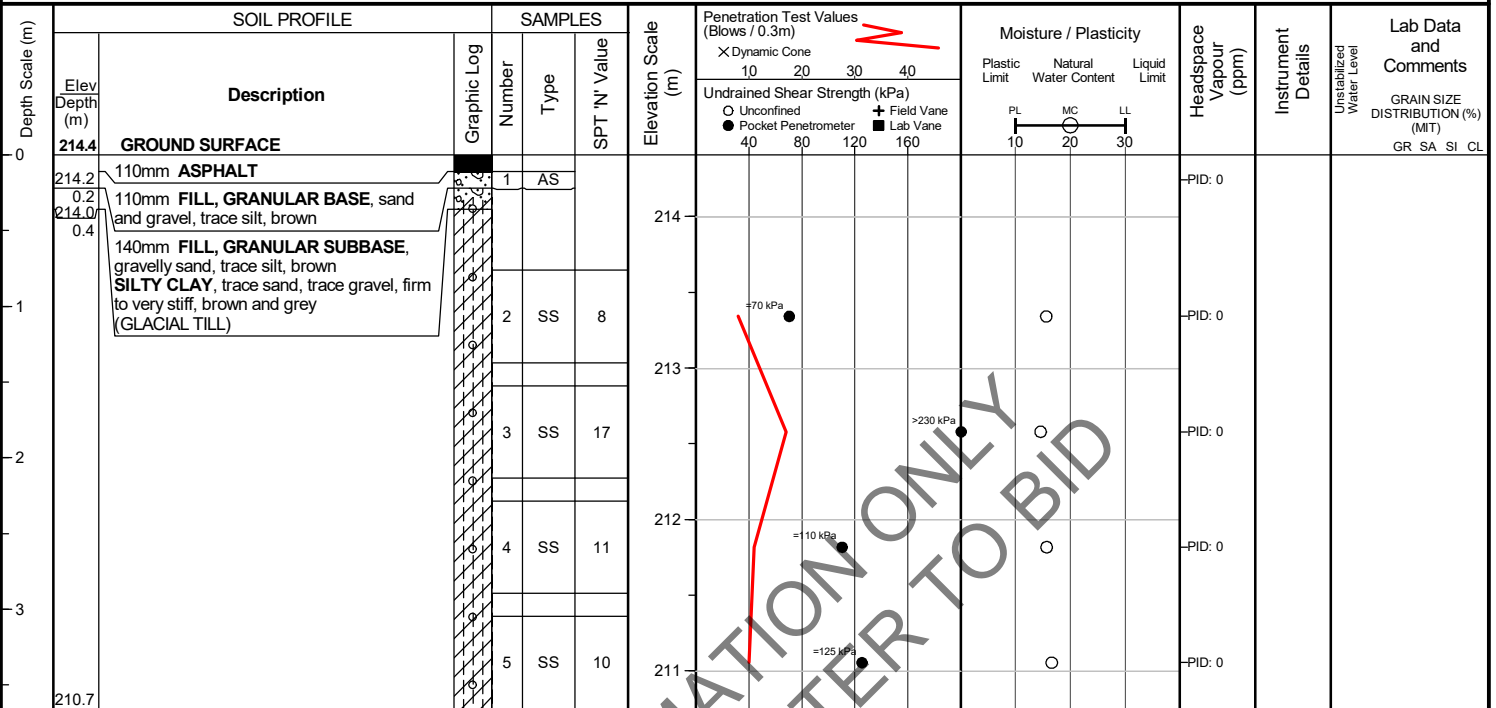
END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

FOR INFORMATION ONLY
 PLEASE REGISTER TO BID

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Proposed Reconstruction of Thames Street, Niagara Street, Main Street and installation of storm water infrastructure Location : Wyoming, ON Completed by : MA
 Sheet No. : 1 of 1 Location : Wyoming, ON Checked by : MH

Position : E: 409066, N: 4755940 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers



Borehole was dry and open upon completion of drilling.

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Proposed Reconstruction of Thames Street, Niagara Street, Main Street and installation of storm water infrastructure Location : Wyoming, ON Completed by : MA
 Sheet No. : 1 of 1 Location : Wyoming, ON Checked by : MH

Position : E: 409161, N: 4755931 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m)		Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value		Dynamic Cone	Undrained Shear Strength (kPa)	Plastic Limit	Natural Water Content	Liquid Limit			
0	214.7	GROUND SURFACE													
0.2	214.5	65mm ASPHALT		1	AS								PID: 0		
0.6	214.1	155mm FILL, GRANULAR BASE, sand and gravel, trace silt, brown													
		420mm FILL, GRANULAR SUBBASE, sand and gravel, trace silt, brown													
1		SILTY CLAY, trace sand, trace gravel, stiff to very stiff, brown to grey (GLACIAL TILL)		2	SS	11			>230 kPa				PID: 0		
2				3	SS	13			>230 kPa				PID: 0		
				4	SS	17			>230 kPa				PID: 0		
3				5	SS	16			≈220 kPa				PID: 0		
3.7	211.0	END OF BOREHOLE													

Borehole was dry and open upon completion of drilling.

FOR INFORMATION ONLY
 PLEASE REGISTER TO BID

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Proposed Reconstruction of Thames Street, Niagara Street, Main Street and installation of storm water infrastructure Location : Wyoming, ON Checked by : MH
 Sheet No. : 1 of 1

Position : E: 408933, N: 4755840 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m)		Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value		Dynamic Cone	Undrained Shear Strength (kPa)	Plastic Limit	Natural Water Content	Liquid Limit			
0	214.2	GROUND SURFACE													
0.3	213.9	85mm ASPHALT		1	AS		214						PID: 0		
		175mm FILL, GRANULAR BASE, sand and gravel, trace silt, brown													
		820mm FILL, GRANULAR SUBBASE, gravelly sand, trace silt, loose, brown, moist													
1.1	213.1	FILL, sandy silt, trace topsoil, trace clay, loose, grey, moist		2	SS	7	213						PID: 0		
1.4	212.8	FILL, sandy silty clay, soft													
1.7	212.5	SILTY CLAY		3	SS	5	212						PID: 0		
2.3	211.9	SILTY CLAY, trace sand, trace gravel, stiff, grey (GLACIAL TILL)		4	SS	11	211						PID: 0		
3.7	210.5	END OF BOREHOLE		5	SS	12							PID: 0		

Borehole was dry and open upon completion of drilling.

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Proposed Reconstruction of Thames Street, Niagara Street, Main Street and installation of storm water infrastructure Location : Wyoming, ON Completed by : MA
 Sheet No. : 1 of 1 Location : Wyoming, ON Checked by : MH

Position : E: 409061, N: 4755837 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers

Depth Scale (m)	SOIL PROFILE			SAMPLES			Elevation Scale (m)	Penetration Test Values (Blows / 0.3m)		Moisture / Plasticity			Headspace Vapour (ppm)	Instrument Details	Lab Data and Comments
	Elev Depth (m)	Description	Graphic Log	Number	Type	SPT 'N' Value		Dynamic Cone	Undrained Shear Strength (kPa)	Plastic Limit	Natural Water Content	Liquid Limit			
0	214.0	GROUND SURFACE													
0.2	213.8	20mm ASPHALT		1	AS								PID: 0		
0.5	213.5	200mm FILL, GRANULAR BASE, sand and gravel, trace silt, brown													
1.1	212.9	280mm FILL, GRANULAR SUBBASE, sand and gravel, some silt, brown and black		2	SS	6	213.2						PID: 0		
1.5	212.5	SILTY TOPSOIL, loose, dark brown, moist													
1.8	212.2	SILT, shells, firm, grey (ORGANIC)		3	SS	10	212.2						PID: 0		
2.2	211.8	SANDY SILT, trace gravel, loose to compact, grey, moist		4	SS	9	211.8						PID: 0		
3.7	210.3	SILTY CLAY, trace sand, trace gravel, stiff, grey (GLACIAL TILL)		5	SS	13	210.3						PID: 0		

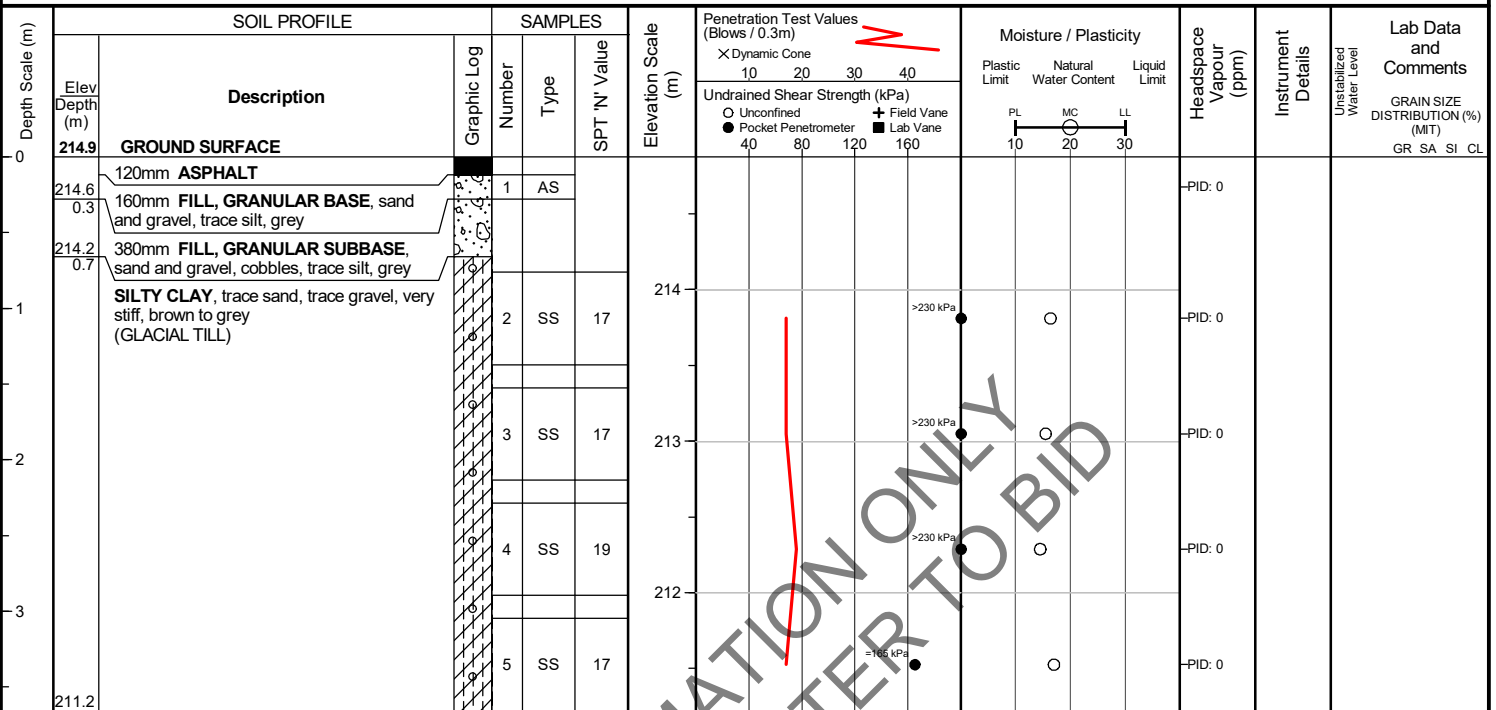
END OF BOREHOLE

Borehole was dry and open upon completion of drilling.

FOR INFORMATION ONLY
 PLEASE REGISTER TO BID

Project No. : 02509562.000 Client : Town of Plympton-Wyoming Originated by : MA
 Date started : 2025 November 3 Project : Proposed Reconstruction of Thames Street, Niagara Street, Main Street and installation of storm water infrastructure Location : Wyoming, ON Completed by : MA
 Sheet No. : 1 of 1 Location : Wyoming, ON Checked by : MH

Position : E: 409055, N: 4755725 (UTM 17T) Elevation Datum : Geodetic
 Rig type : D50, track-mounted Drilling Method : Solid stem augers



Borehole was dry and open upon completion of drilling.

FOR INFORMATION ONLY
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Appendix C

Analytical Results

FOR INFORMATION ONLY
PLEASE REGISTER TO BID



eNGLOBE

TABLE 101
PETROLEUM HYDROCARBON (PHC) FRACTIONS F1 to F4 AND BTEX ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	BH01-25 SA2	BH01-25 SA3	BH02-25 SA1
					Date and Time	3-Nov-2025	3-Nov-2025	3-Nov-2025
					Laboratory ID	AXJE28	AXJE29	AXJE30
					Sample Depth (mbgs)	0.7-1.3	1.5-2.1	0.0-0.6
					Laboratory Units			
Benzene	0.02	0.32	0.034	0.02	ug/g	<0.020	<0.020	<0.020
Ethylbenzene	0.05	1.1	1.9	0.02	ug/g	<0.020	<0.020	<0.020
Toluene	0.2	6.4	7.8	0.02	ug/g	<0.020	<0.020	<0.020
Xylenes (Total)	0.091	26	3	0.04	ug/g	<0.040	<0.040	<0.040
F1 (C6-C10)	17	55	25	10	ug/g	<10	<10	<10
F1-BTEX	17	55	25	10	ug/g	<10	<10	<10
F2 (C10-C16)	10	230	26	7	ug/g	<7.0	<7.0	33
F3 (C16-C34)	240	1700	1700	50	ug/g	<50	<50	240
F4 (C34-C50)	2800	3300	3300	50	ug/g	<50	<50	520
Chrom. to baseline at nC50	-	-	-	-	-	YES	YES	NO
F4G-SG (GHH-Silica)	2800	3300	3300	100	ug/g	-	-	2400

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
 - Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

-
- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
 - Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
 - Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
 - Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
 - Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
 - All Standards and results shown in µg/g.
 - "-" Standard not available or parameter not analyzed.
 - "NC" RPD not calculable / not valid.
 - mbgs - metres below ground surface.
 - Tests carried out by: Bureau Veritas

TABLE 101
PETROLEUM HYDROCARBON (PHC) FRACTIONS F1 to F4 AND BTEX ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	BH02-25 SA2	BH02-25 SA3	BH03-25 SA1
					Date and Time	3-Nov-2025	3-Nov-2025	3-Nov-2025
					Laboratory ID	AXJE31	AXJE32	AXHV76
					Sample Depth (mbgs)	0.7-1.3	1.5-2.1	0.0-0.6
					Laboratory Units			
Benzene	0.02	0.32	0.034	0.02	ug/g	<0.020	<0.020	<0.020
Ethylbenzene	0.05	1.1	1.9	0.02	ug/g	<0.020	<0.020	<0.020
Toluene	0.2	6.4	7.8	0.02	ug/g	<0.020	<0.020	<0.020
Xylenes (Total)	0.091	26	3	0.04	ug/g	<0.040	<0.040	<0.040
F1 (C6-C10)	17	55	25	10	ug/g	<10	<10	<10
F1-BTEX	17	55	25	10	ug/g	<10	<10	<10
F2 (C10-C16)	10	230	26	7	ug/g	<7.0	8.5	96
F3 (C16-C34)	240	1700	1700	50	ug/g	<50	<50	1300
F4 (C34-C50)	2800	3300	3300	50	ug/g	<50	<50	2800
Chrom. to baseline at nC50	-	-	-	-	-	YES	YES	NO
F4G-SG (GHH-Silica)	2800	3300	3300	100	ug/g	-	-	9800

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
 - Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

-
- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
 - Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
 - Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
 - Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
 - Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
 - All Standards and results shown in µg/g.
 - "-" Standard not available or parameter not analyzed.
 - "NC" RPD not calculable / not valid.
 - mbgs - metres below ground surface.
 - Tests carried out by: Bureau Veritas

TABLE 101
PETROLEUM HYDROCARBON (PHC) FRACTIONS F1 to F4 AND BTEX ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	BH03-25 SA2	BH03-25 SA3	BH04-25 SA1
					Date and Time	3-Nov-2025	3-Nov-2025	3-Nov-2025
					Laboratory ID	AXHV77	AXHV78	AXHV79
					Sample Depth (mbgs)	0.7-1.3	1.5-2.1	0.0-0.6
					Laboratory Units			
Benzene	0.02	0.32	0.034	0.02	ug/g	<0.020	<0.020	<0.020
Ethylbenzene	0.05	1.1	1.9	0.02	ug/g	<0.020	<0.020	<0.020
Toluene	0.2	6.4	7.8	0.02	ug/g	<0.020	<0.020	<0.020
Xylenes (Total)	0.091	26	3	0.04	ug/g	<0.040	<0.040	<0.040
F1 (C6-C10)	17	55	25	10	ug/g	<10	<10	<10
F1-BTEX	17	55	25	10	ug/g	<10	<10	<10
F2 (C10-C16)	10	230	26	7	ug/g	<7.0	<7.0	<7.0
F3 (C16-C34)	240	1700	1700	50	ug/g	<50	<50	240
F4 (C34-C50)	2800	3300	3300	50	ug/g	<50	<50	600
Chrom. to baseline at nC50	-	-	-	-	-	YES	YES	NO
F4G-SG (GHH-Silica)	2800	3300	3300	100	ug/g	-	-	2000

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
 - Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

-
- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
 - Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
 - Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
 - Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
 - Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
 - All Standards and results shown in µg/g.
 - "-" Standard not available or parameter not analyzed.
 - "NC" RPD not calculable / not valid.
 - mbgs - metres below ground surface.
 - Tests carried out by: Bureau Veritas

TABLE 101
PETROLEUM HYDROCARBON (PHC) FRACTIONS F1 to F4 AND BTEX ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	DUP2	RPD (%)	BH04-25 SA2
					Date and Time	3-Nov-2025		3-Nov-2025
					Laboratory ID	Field Duplicate		AXHV80
					Sample Depth (mbgs)			0.7-1.3
					Laboratory Units			
Benzene	0.02	0.32	0.034	0.02	ug/g	<0.020	ND	<0.020
Ethylbenzene	0.05	1.1	1.9	0.02	ug/g	<0.020	ND	<0.020
Toluene	0.2	6.4	7.8	0.02	ug/g	<0.020	ND	<0.020
Xylenes (Total)	0.091	26	3	0.04	ug/g	<0.040	ND	<0.040
F1 (C6-C10)	17	55	25	10	ug/g	<10	ND	<10
F1-BTEX	17	55	25	10	ug/g	<10	ND	<10
F2 (C10-C16)	10	230	26	7	ug/g	<7.0	NC	<7.0
F3 (C16-C34)	240	1700	1700	50	ug/g	210	NC	<50
F4 (C34-C50)	2800	3300	3300	50	ug/g	500	18.18	<50
Chrom. to baseline at nC50	-	-	-	-	-	NO	NC	YES
F4G-SG (GHH-Silica)	2800	3300	3300	100	ug/g	1400	35.29	-

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
 - Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

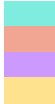
-
- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
 - Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
 - Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
 - Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
 - Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
 - All Standards and results shown in µg/g.
 - "-" Standard not available or parameter not analyzed.
 - "NC" RPD not calculable / not valid.
 - mbgs - metres below ground surface.
 - Tests carried out by: Bureau Veritas

TABLE 101
PETROLEUM HYDROCARBON (PHC) FRACTIONS F1 to F4 AND BTEX ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	BH04-25 SA3	BH05-25 SA1	BH05-25 SA2
					Date and Time	3-Nov-2025	3-Nov-2025	3-Nov-2025
					Laboratory ID	AXHV81	AXHV82	AXHV83
					Sample Depth (mbgs)	1.5-2.1	0.0-0.6	0.7-1.3
					Laboratory Units			
Benzene	0.02	0.32	0.034	0.02	ug/g	<0.020	<0.020	<0.020
Ethylbenzene	0.05	1.1	1.9	0.02	ug/g	<0.020	<0.020	<0.020
Toluene	0.2	6.4	7.8	0.02	ug/g	<0.020	<0.020	<0.020
Xylenes (Total)	0.091	26	3	0.04	ug/g	<0.040	<0.040	<0.040
F1 (C6-C10)	17	55	25	10	ug/g	<10	<10	<10
F1-BTEX	17	55	25	10	ug/g	<10	<10	<10
F2 (C10-C16)	10	230	26	7	ug/g	<7.0	<7.0	<7.0
F3 (C16-C34)	240	1700	1700	50	ug/g	<50	<50	<50
F4 (C34-C50)	2800	3300	3300	50	ug/g	<50	65	<50
Chrom. to baseline at nC50	-	-	-	-	-	YES	YES	YES
F4G-SG (GHH-Silica)	2800	3300	3300	100	ug/g	-	-	-

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
 - Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.



- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 101
PETROLEUM HYDROCARBON (PHC) FRACTIONS F1 to F4 AND BTEX ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	BH05-25 SA3	BH06-25 SA1	BH06-25 SA2
					Date and Time	3-Nov-2025	3-Nov-2025	3-Nov-2025
					Laboratory ID	AXHV84	AXHV85	AXHV86
					Sample Depth (mbgs)	1.5-2.1	0.0-0.6	0.7-1.3
					Laboratory Units			
Benzene	0.02	0.32	0.034	0.02	ug/g	<0.020	-	-
Ethylbenzene	0.05	1.1	1.9	0.02	ug/g	<0.020	-	-
Toluene	0.2	6.4	7.8	0.02	ug/g	<0.020	-	-
Xylenes (Total)	0.091	26	3	0.04	ug/g	<0.040	-	-
F1 (C6-C10)	17	55	25	10	ug/g	<10	<10	<10
F1-BTEX	17	55	25	10	ug/g	<10	<10	<10
F2 (C10-C16)	10	230	26	7	ug/g	<7.0	<7.0	<7.0
F3 (C16-C34)	240	1700	1700	50	ug/g	<50	83	58
F4 (C34-C50)	2800	3300	3300	50	ug/g	<50	180	<50
Chrom. to baseline at nC50	-	-	-	-	-	YES	NO	YES
F4G-SG (GHH-Silica)	2800	3300	3300	100	ug/g	-	930	-

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
 - Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

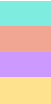
-
- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
 - Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
 - Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
 - Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
 - Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
 - All Standards and results shown in µg/g.
 - "-" Standard not available or parameter not analyzed.
 - "NC" RPD not calculable / not valid.
 - mbgs - metres below ground surface.
 - Tests carried out by: Bureau Veritas

TABLE 101
PETROLEUM HYDROCARBON (PHC) FRACTIONS F1 to F4 AND BTEX ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	BH06-25 SA3	BH07-25 SA1	BH07-25 SA2
					Date and Time	3-Nov-2025	3-Nov-2025	3-Nov-2025
					Laboratory ID	AXHV87	AXHV88	AXHV89
					Sample Depth (mbgs)	1.5-2.1	0.0-0.6	0.7-1.3
					Laboratory Units			
Benzene	0.02	0.32	0.034	0.02	ug/g	-	-	-
Ethylbenzene	0.05	1.1	1.9	0.02	ug/g	-	-	-
Toluene	0.2	6.4	7.8	0.02	ug/g	-	-	-
Xylenes (Total)	0.091	26	3	0.04	ug/g	-	-	-
F1 (C6-C10)	17	55	25	10	ug/g	<10	<10	<10
F1-BTEX	17	55	25	10	ug/g	<10	<10	<10
F2 (C10-C16)	10	230	26	7	ug/g	<7.0	<7.0	<7.0
F3 (C16-C34)	240	1700	1700	50	ug/g	<50	110	<50
F4 (C34-C50)	2800	3300	3300	50	ug/g	<50	200	<50
Chrom. to baseline at nC50	-	-	-	-	-	YES	YES	YES
F4G-SG (GHH-Silica)	2800	3300	3300	100	ug/g	-	-	-

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
 - Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.



- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 101
PETROLEUM HYDROCARBON (PHC) FRACTIONS F1 to F4 AND BTEX ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	DUP1	RPD (%)	BH07-25 SA3
					Date and Time	3-Nov-2025		3-Nov-2025
					Laboratory ID	Field Duplicate		AXHV90
					Sample Depth (mbgs)			1.5-2.1
					Laboratory Units			
Benzene	0.02	0.32	0.034	0.02	ug/g	-	NC	-
Ethylbenzene	0.05	1.1	1.9	0.02	ug/g	-	NC	-
Toluene	0.2	6.4	7.8	0.02	ug/g	-	NC	-
Xylenes (Total)	0.091	26	3	0.04	ug/g	-	NC	-
F1 (C6-C10)	17	55	25	10	ug/g	<10	NC	<10
F1-BTEX	17	55	25	10	ug/g	<10	NC	<10
F2 (C10-C16)	10	230	26	7	ug/g	<7.0	NC	<7.0
F3 (C16-C34)	240	1700	1700	50	ug/g	<50	NC	<50
F4 (C34-C50)	2800	3300	3300	50	ug/g	<50	NC	<50
Chrom. to baseline at nC50	-	-	-	-	-	YES	NC	YES
F4G-SG (GHH-Silica)	2800	3300	3300	100	ug/g	-	NC	-

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
 - Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

-
- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
 - Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
 - Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
 - Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
 - Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
 - All Standards and results shown in µg/g.
 - "-" Standard not available or parameter not analyzed.
 - "NC" RPD not calculable / not valid.
 - mbgs - metres below ground surface.
 - Tests carried out by: Bureau Veritas

TABLE 102
O.REG. 153/04 METALS AND INORGANICS ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	Sample ID	BH01-25 SA2	BH01-25 SA3	BH02-25 SA1	BH02-25 SA2
					Date and Time	3-Nov-2025	3-Nov-2025	3-Nov-2025	3-Nov-2025
					Laboratory ID	AXJE28	AXJE29	AXJE30	AXJE31
					Sample Depth (mbgs)	0.7-1.3	1.5-2.1	0.0-0.6	0.7-1.3
					Laboratory Units				
Calculated Parameters									
SAR	5	12	12	-	N/A	1.8	1.3	10	4.6
Inorganics									
Conductivity	0.7	1.4	1.4	0.002	mS/cm	0.23	0.2	0.44	0.94
pH*	5 to 9 and 5 to 11	5 to 9 and 5 to 11	5 to 9 and 5 to 11	-	%	7.63	7.66	7.81	7.77
Cyanide, Weak Acid Dissociabl	0.051	0.051	0.051	0.01	ug/g	<0.01	<0.01	<0.01	<0.01
Chromium, Hexavalent	8	8	8	0.18	ug/g	<0.18	<0.18	<0.18	<0.18
Metals									
Boron (B), Hot Water Ext.	1.5	2	2	0.05	ug/g	0.095	0.084	0.096	0.15
Antimony (Sb)	7.5	40	40	0.2	ug/g	0.33	0.26	<0.20	0.29
Arsenic (As)	11	18	18	1	ug/g	5.4	4	2	5.5
Barium (Ba)	390	670	670	0.5	ug/g	59	71	15	69
Beryllium (Be)	4	8	8	0.2	ug/g	0.64	0.59	<0.20	0.62
Boron (B)	120	120	120	-	-	-	-	-	-
Cadmium (Cd)	1	1.9	1.9	0.1	ug/g	0.18	0.2	<0.10	0.13
Chromium (Cr)	160	160	160	1	ug/g	25	23	6.2	23
Cobalt (Co)	22	80	80	0.1	ug/g	9.3	11	2.5	9.1
Copper (Cu)	140	230	230	0.5	ug/g	20	20	7.7	18
Lead (Pb)	45	120	120	1	ug/g	9.2	8.6	7	13
Mercury (Hg)	0.24	3.9	0.27	0.05	ug/g	<0.050	<0.050	<0.050	<0.050
Molybdenum (Mo)	6.9	40	40	0.5	ug/g	2.2	3.6	0.58	3.2
Nickel (Ni)	100	270	270	0.5	ug/g	29	30	6.5	27
Selenium (Se)	2.4	5.5	5.5	0.5	ug/g	<0.50	<0.50	<0.50	<0.50
Silver (Ag)	20	40	40	0.2	ug/g	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	1	3.3	3.3	0.05	ug/g	0.24	0.23	0.082	0.21
Uranium (U)	23	33	33	0.05	ug/g	1	1	0.52	0.99
Vanadium (V)	86	86	86	5	ug/g	31	26	12	28
Zinc (Zn)	340	340	340	5	ug/g	51	54	19	42

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
- Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- *The RPD for pH is an absolute difference and shown in pH units.
- All Standards and results shown in µg/g [exceptions, SAR (unitless), pH (pH units) and Conductivity (mS/cm)].
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- pH criteria refers to surface and subsurface soils, respectively.
- Tests carried out by: Bureau Veritas

TABLE 102
O.REG. 153/04 METALS AND INORGANICS ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	BH02-25 SA3	BH03-25 SA1	BH03-25 SA2	BH03-25 SA3	BH04-25 SA1
					3-Nov-2025	3-Nov-2025	3-Nov-2025	3-Nov-2025	3-Nov-2025
					AXJE32	AXHV76	AXHV77	AXHV78	AXHV79
					1.5-2.1	0.0-0.6	0.7-1.3	1.5-2.1	0.0-0.6
Calculated Parameters									
SAR	5	12	12	-	7	21	5.4	3.9	2.9
Inorganics									
Conductivity	0.7	1.4	1.4	0.002	1	0.82	1	0.63	0.37
pH*	5 to 9 and 5 to 11	5 to 9 and 5 to 11	5 to 9 and 5 to 11	-	7.75	7.49	7.58	7.77	8.06
Cyanide, Weak Acid Dissociabl	0.051	0.051	0.051	0.01	<0.01	-	-	-	-
Chromium, Hexavalent	8	8	8	0.18	<0.18	-	-	-	-
Metals									
Boron (B), Hot Water Ext.	1.5	2	2	0.05	0.11	-	-	-	-
Antimony (Sb)	7.5	40	40	0.2	0.36	0.21	0.43	0.25	<0.20
Arsenic (As)	11	18	18	1	5.5	2.9	7.8	5.6	2
Barium (Ba)	390	670	670	0.5	60	24	75	58	14
Beryllium (Be)	4	8	8	0.2	0.56	0.28	0.8	0.54	<0.20
Boron (B)	120	120	120	-	-	-	-	-	-
Cadmium (Cd)	1	1.9	1.9	0.1	0.14	0.17	0.15	0.12	<0.10
Chromium (Cr)	160	160	160	1	23	13	28	21	4.8
Cobalt (Co)	22	80	80	0.1	9.3	4.3	11	8.8	2.1
Copper (Cu)	140	230	230	0.5	21	17	22	17	6.3
Lead (Pb)	45	120	120	1	9.8	15	11	8.1	4.1
Mercury (Hg)	0.24	3.9	0.27	0.05	<0.050	-	-	-	-
Molybdenum (Mo)	6.9	40	40	0.5	3.7	1	3.6	3.8	0.53
Nickel (Ni)	100	270	270	0.5	28	13	34	26	6.2
Selenium (Se)	2.4	5.5	5.5	0.5	0.59	<0.50	<0.50	<0.50	<0.50
Silver (Ag)	20	40	40	0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	1	3.3	3.3	0.05	0.21	0.13	0.22	0.2	0.063
Uranium (U)	23	33	33	0.05	0.99	0.75	1.3	1.1	0.59
Vanadium (V)	86	86	86	5	28	19	36	25	8.7
Zinc (Zn)	340	340	340	5	44	47	63	44	21

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
- Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- *The RPD for pH is an absolute difference and shown in pH units.
- All Standards and results shown in µg/g [exceptions, SAR (unitless), pH (pH units) and Conductivity (mS/cm)].
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- pH criteria refers to surface and subsurface soils, respectively.
- Tests carried out by: Bureau Veritas

TABLE 102
O.REG. 153/04 METALS AND INORGANICS ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	DUP2	RPD (%)	BH04-25 SA2	BH04-25 SA3	BH05-25 SA1
					3-Nov-2025		3-Nov-2025	3-Nov-2025	3-Nov-2025
					Field Duplicate		AXHV80	AXHV81	AXHV82
							0.7-1.3	1.5-2.1	0.0-0.6
Calculated Parameters									
SAR	5	12	12	-	3	NC	0.69	0.48	7.1
Inorganics									
Conductivity	0.7	1.4	1.4	0.002	0.46	21.69	0.34	0.3	0.6
pH*	5 to 9 and 5 to 11	5 to 9 and 5 to 11	5 to 9 and 5 to 11	-	8.16	NC	7.83	7.92	8.04
Cyanide, Weak Acid Dissociabl	0.051	0.051	0.051	0.01	-	NC	-	-	-
Chromium, Hexavalent	8	8	8	0.18	-	NC	-	-	-
Metals									
Boron (B), Hot Water Ext.	1.5	2	2	0.05	-	NC	-	-	-
Antimony (Sb)	7.5	40	40	0.2	<0.20	NC	0.29	0.26	0.24
Arsenic (As)	11	18	18	1	2.1	NC	6.4	5.8	4.1
Barium (Ba)	390	670	670	0.5	16	13.33	63	57	12
Beryllium (Be)	4	8	8	0.2	<0.20	NC	0.53	0.48	<0.20
Boron (B)	120	120	120	-	-	NC	-	-	-
Cadmium (Cd)	1	1.9	1.9	0.1	<0.10	NC	0.13	0.14	0.1
Chromium (Cr)	160	160	160	1	5.6	NC	21	20	8
Cobalt (Co)	22	80	80	0.1	2.3	9.09	9.8	8.2	2.5
Copper (Cu)	140	230	230	0.5	6.9	9.09	17	17	8.1
Lead (Pb)	45	120	120	1	4.4	NC	7.4	7.9	4.6
Mercury (Hg)	0.24	3.9	0.27	0.05	-	NC	-	-	-
Molybdenum (Mo)	6.9	40	40	0.5	0.61	NC	3.9	3.4	1.7
Nickel (Ni)	100	270	270	0.5	6.7	7.75	26	23	8.9
Selenium (Se)	2.4	5.5	5.5	0.5	<0.50	NC	<0.50	<0.50	<0.50
Silver (Ag)	20	40	40	0.2	<0.20	NC	<0.20	<0.20	<0.20
Thallium (Tl)	1	3.3	3.3	0.05	0.075	NC	0.23	0.21	0.15
Uranium (U)	23	33	33	0.05	0.68	14.17	1.1	1.1	1.4
Vanadium (V)	86	86	86	5	9.3	NC	25	24	11
Zinc (Zn)	340	340	340	5	23	NC	40	39	22

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
- Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- *The RPD for pH is an absolute difference and shown in pH units.
- All Standards and results shown in µg/g [exceptions, SAR (unitless), pH (pH units) and Conductivity (mS/cm)].
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- pH criteria refers to surface and subsurface soils, respectively.
- Tests carried out by: Bureau Veritas

TABLE 102
O.REG. 153/04 METALS AND INORGANICS ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	BH05-25 SA2	BH05-25 SA3	BH06-25 SA1	BH06-25 SA2	BH06-25 SA3
					3-Nov-2025	3-Nov-2025	3-Nov-2025	3-Nov-2025	3-Nov-2025
					AXHV83	AXHV84	AXHV85	AXHV86	AXHV87
					0.7-1.3	1.5-2.1	0.0-0.6	0.7-1.3	1.5-2.1
Calculated Parameters									
SAR	5	12	12	-	6.4	3.4	14	4.9	2.6
Inorganics									
Conductivity	0.7	1.4	1.4	0.002	0.58	0.66	0.52	0.59	0.42
pH*	5 to 9 and 5 to 11	5 to 9 and 5 to 11	5 to 9 and 5 to 11	-	7.49	7.56	8.03	7.65	7.49
Cyanide, Weak Acid Dissociabl	0.051	0.051	0.051	0.01	-	-	-	-	-
Chromium, Hexavalent	8	8	8	0.18	-	-	-	-	-
Metals									
Boron (B), Hot Water Ext.	1.5	2	2	0.05	-	-	-	-	-
Antimony (Sb)	7.5	40	40	0.2	<0.20	0.3	<0.20	0.37	0.21
Arsenic (As)	11	18	18	1	3.3	7.7	1.6	2	4.4
Barium (Ba)	390	670	670	0.5	19	53	11	48	19
Beryllium (Be)	4	8	8	0.2	0.22	0.45	<0.20	0.47	0.26
Boron (B)	120	120	120	-	-	-	-	-	-
Cadmium (Cd)	1	1.9	1.9	0.1	<0.10	0.12	<0.10	0.22	<0.10
Chromium (Cr)	160	160	160	1	8	18	5.9	18	11
Cobalt (Co)	22	80	80	0.1	3.8	8.5	2.2	6.6	4.2
Copper (Cu)	140	230	230	0.5	9.4	19	7.1	18	11
Lead (Pb)	45	120	120	1	5.4	7.3	9.2	9.5	5.1
Mercury (Hg)	0.24	3.9	0.27	0.05	-	-	-	-	-
Molybdenum (Mo)	6.9	40	40	0.5	2	6.5	0.5	1.6	6.5
Nickel (Ni)	100	270	270	0.5	10	24	5.8	21	12
Selenium (Se)	2.4	5.5	5.5	0.5	<0.50	<0.50	<0.50	0.83	<0.50
Silver (Ag)	20	40	40	0.2	<0.20	<0.20	<0.20	<0.20	<0.20
Thallium (Tl)	1	3.3	3.3	0.05	0.12	0.17	0.059	0.16	0.1
Uranium (U)	23	33	33	0.05	0.98	1.5	0.54	1.4	1.5
Vanadium (V)	86	86	86	5	13	24	11	23	16
Zinc (Zn)	340	340	340	5	23	42	25	43	20

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
- Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- *The RPD for pH is an absolute difference and shown in pH units.
- All Standards and results shown in µg/g [exceptions, SAR (unitless), pH (pH units) and Conductivity (mS/cm)].
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- pH criteria refers to surface and subsurface soils, respectively.
- Tests carried out by: Bureau Veritas

TABLE 102
O.REG. 153/04 METALS AND INORGANICS ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use Coarse Soils	MECP Table 3.1 ESQS Industrial / Commercial / Community Property Use	Laboratory Detection Limit	BH07-25 SA1	BH07-25 SA2	DUP1	RPD (%)	BH07-25 SA3
					3-Nov-2025	3-Nov-2025	3-Nov-2025		3-Nov-2025
					AXHV88	AXHV89	Field Duplicate		AXHV90
					0.0-0.6	0.7-1.3			1.5-2.1
Calculated Parameters									
SAR	5	12	12	-	0.22	0.48	0.34	NC	0.24
Inorganics									
Conductivity	0.7	1.4	1.4	0.002	0.27	0.44	0.49	10.75	0.4
pH*	5 to 9 and 5 to 11	5 to 9 and 5 to 11	5 to 9 and 5 to 11	-	8.39	7.85	7.84	NC	7.8
Cyanide, Weak Acid Dissociabl	0.051	0.051	0.051	0.01	-	-	-	NC	-
Chromium, Hexavalent	8	8	8	0.18	-	-	-	NC	-
Metals									
Boron (B), Hot Water Ext.	1.5	2	2	0.05	-	-	-	NC	-
Antimony (Sb)	7.5	40	40	0.2	<0.20	0.24	0.31	NC	0.27
Arsenic (As)	11	18	18	1	<1.0	4.9	5.8	NC	5.7
Barium (Ba)	390	670	670	0.5	2.6	67	80	17.69	75
Beryllium (Be)	4	8	8	0.2	<0.20	0.57	0.66	NC	0.62
Boron (B)	120	120	120	-	-	-	-	NC	-
Cadmium (Cd)	1	1.9	1.9	0.1	<0.10	0.12	0.12	NC	0.14
Chromium (Cr)	160	160	160	1	5.4	22	25	12.77	25
Cobalt (Co)	22	80	80	0.1	0.32	8.2	12	37.62	12
Copper (Cu)	140	230	230	0.5	0.6	17	20	16.22	19
Lead (Pb)	45	120	120	1	1.3	7.2	9.9	31.58	10
Mercury (Hg)	0.24	3.9	0.27	0.05	-	-	-	NC	-
Molybdenum (Mo)	6.9	40	40	0.5	<0.50	2.1	2.5	NC	3
Nickel (Ni)	100	270	270	0.5	1.1	25	35	33.33	35
Selenium (Se)	2.4	5.5	5.5	0.5	<0.50	<0.50	<0.50	NC	<0.50
Silver (Ag)	20	40	40	0.2	<0.20	<0.20	<0.20	NC	<0.20
Thallium (Tl)	1	3.3	3.3	0.05	<0.050	0.22	0.27	NC	0.27
Uranium (U)	23	33	33	0.05	0.11	0.91	0.94	3.24	1
Vanadium (V)	86	86	86	5	<5.0	26	29	10.91	28
Zinc (Zn)	340	340	340	5	<5.0	42	50	17.39	50

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
- Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Non-Potable Ground Water Condition for Industrial/Commercial/Community Property Use.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3.1 ICC ESQS.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- *The RPD for pH is an absolute difference and shown in pH units.
- All Standards and results shown in µg/g [exceptions, SAR (unitless), pH (pH units) and Conductivity (mS/cm)].
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- pH criteria refers to surface and subsurface soils, respectively.
- Tests carried out by: Bureau Veritas

TABLE 103
VOLATILE ORGANIC COMPOUNDS (VOCs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	Sample ID	BH06-25 SA1	BH06-25 SA2	BH06-25 SA3	BH07-25 SA1	BH07-25 SA2
					Date and Time	3-Nov-2025	3-Nov-2025	3-Nov-2025	3-Nov-2025	3-Nov-2025
					Laboratory ID	C5E4282	C5E4282	C5E4282	C5E4282	C5E4282
					Sample Depth (mbgs)	0.0-0.6	0.7-1.3	1.5-2.1	0.0-0.6	0.7-1.3
					Laboratory Units					
Calculated Parameters										
1,3-Dichloropropene (cis+trans)	0.05	0.05	0.059	0.05	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050
Volatile Organics										
Acetone	0.5	0.5	16	0.49	ug/g	<0.49	<0.49	<0.49	<0.49	<0.49
Benzene	0.02	0.02	0.32	0.006	ug/g	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
Bromodichloromethane	0.05	0.05	1.5	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Bromoform	0.05	0.05	0.61	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Bromomethane	0.05	0.05	0.05	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Carbon tetrachloride	0.05	0.05	0.21	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Chlorobenzene	0.083	0.05	2.4	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Chloroform	0.05	0.05	0.47	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Dibromochloromethane	0.05	0.05	2.3	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichlorobenzene	3.4	0.05	1.2	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,3-Dichlorobenzene	0.26	0.05	9.6	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,4-Dichlorobenzene	0.05	0.05	0.2	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Dichlorodifluoromethane	1.5	0.05	16	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,1-Dichloroethane	0.05	0.05	0.47	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichloroethane	0.05	0.05	0.05	0.049	ug/g	<0.049	<0.049	<0.049	<0.049	<0.049
1,1-Dichloroethylene	0.05	0.05	0.064	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
cis-1,2-Dichloroethylene	0.05	0.05	1.9	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
trans-1,2-Dichloroethylene	0.05	0.05	1.3	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,2-Dichloropropane	0.05	0.05	0.16	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
cis-1,3-Dichloropropene	0.05	0.05	0.059	0.03	ug/g	<0.030	<0.030	<0.030	<0.030	<0.030
trans-1,3-Dichloropropene	0.05	0.05	0.059	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Ethylbenzene	0.05	0.05	1.1	0.01	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010
1,2-Dibromoethane	0.05	0.05	0.05	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
n-Hexane	2.5	0.05	46	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Methylene Chloride	0.05	0.05	70	0.049	ug/g	<0.049	<0.049	<0.049	<0.049	<0.049
Methyl Ethyl Ketone	0.5	0.5	31	0.4	ug/g	<0.40	<0.40	<0.40	<0.40	<0.40
Methyl Isobutyl Ketone	0.5	0.5	1.6	0.4	ug/g	<0.40	<0.40	<0.40	<0.40	<0.40
MTBE	0.05	0.05	1.6	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Styrene	0.05	0.05	34	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,1,2-Tetrachloroethane	0.05	0.05	0.087	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,2,2-Tetrachloroethane	0.05	0.05	0.05	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Tetrachloroethylene	0.05	0.05	1.9	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Toluene	0.2	0.2	6.4	0.02	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020
1,1,1-Trichloroethane	0.11	0.05	6.1	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
1,1,2-Trichloroethane	0.05	0.05	0.05	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Trichloroethylene	0.05	0.05	0.55	0.01	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010
Trichlorofluoromethane	0.17	0.25	4	0.04	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040
Vinyl chloride	0.02	0.02	0.032	0.019	ug/g	<0.019	<0.019	<0.019	<0.019	<0.019
Xylenes (Total)	0.091	0.05	26	0.02	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.
- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 103
VOLATILE ORGANIC COMPOUNDS (VOCs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	DUP2	RPD (%)	BH07-25 SA3
					3-Nov-2025		3-Nov-2025
					Field Duplicate		C5E4282
							1.5-2.1
Calculated Parameters							
1,3-Dichloropropene (cis+trans)	0.05	0.05	0.059	0.05	<0.050	ND	<0.050
Volatile Organics							
Acetone	0.5	0.5	16	0.49	<0.49	ND	<0.49
Benzene	0.02	0.02	0.32	0.006	<0.0060	ND	<0.0060
Bromodichloromethane	0.05	0.05	1.5	0.04	<0.040	ND	<0.040
Bromoform	0.05	0.05	0.61	0.04	<0.040	ND	<0.040
Bromomethane	0.05	0.05	0.05	0.04	<0.040	ND	<0.040
Carbon tetrachloride	0.05	0.05	0.21	0.04	<0.040	ND	<0.040
Chlorobenzene	0.083	0.05	2.4	0.04	<0.040	ND	<0.040
Chloroform	0.05	0.05	0.47	0.04	<0.040	ND	<0.040
Dibromochloromethane	0.05	0.05	2.3	0.04	<0.040	ND	<0.040
1,2-Dichlorobenzene	3.4	0.05	1.2	0.04	<0.040	ND	<0.040
1,3-Dichlorobenzene	0.26	0.05	9.6	0.04	<0.040	ND	<0.040
1,4-Dichlorobenzene	0.05	0.05	0.2	0.04	<0.040	ND	<0.040
Dichlorodifluoromethane	1.5	0.05	16	0.04	<0.040	ND	<0.040
1,1-Dichloroethane	0.05	0.05	0.47	0.04	<0.040	ND	<0.040
1,2-Dichloroethane	0.05	0.05	0.05	0.049	<0.049	ND	<0.049
1,1-Dichloroethylene	0.05	0.05	0.064	0.04	<0.040	ND	<0.040
cis-1,2-Dichloroethylene	0.05	0.05	1.9	0.04	<0.040	ND	<0.040
trans-1,2-Dichloroethylene	0.05	0.05	1.3	0.04	<0.040	ND	<0.040
1,2-Dichloropropane	0.05	0.05	0.16	0.04	<0.040	ND	<0.040
cis-1,3-Dichloropropene	0.05	0.05	0.059	0.03	<0.030	ND	<0.030
trans-1,3-Dichloropropene	0.05	0.05	0.059	0.04	<0.040	ND	<0.040
Ethylbenzene	0.05	0.05	1.1	0.01	<0.010	ND	<0.010
1,2-Dibromoethane	0.05	0.05	0.05	0.04	<0.040	ND	<0.040
n-Hexane	2.5	0.05	46	0.04	<0.040	ND	<0.040
Methylene Chloride	0.05	0.05	70	0.049	<0.049	ND	<0.049
Methyl Ethyl Ketone	0.5	0.5	31	0.4	<0.40	ND	<0.40
Methyl Isobutyl Ketone	0.5	0.5	1.6	0.4	<0.40	ND	<0.40
MTBE	0.05	0.05	1.6	0.04	<0.040	ND	<0.040
Styrene	0.05	0.05	34	0.04	<0.040	ND	<0.040
1,1,1,2-Tetrachloroethane	0.05	0.05	0.087	0.04	<0.040	ND	<0.040
1,1,2,2-Tetrachloroethane	0.05	0.05	0.05	0.04	<0.040	ND	<0.040
Tetrachloroethylene	0.05	0.05	1.9	0.04	<0.040	ND	<0.040
Toluene	0.2	0.2	6.4	0.02	<0.020	ND	<0.020
1,1,1-Trichloroethane	0.11	0.05	6.1	0.04	<0.040	ND	<0.040
1,1,2-Trichloroethane	0.05	0.05	0.05	0.04	<0.040	ND	<0.040
Trichloroethylene	0.05	0.05	0.55	0.01	<0.010	ND	<0.010
Trichlorofluoromethane	0.17	0.25	4	0.04	<0.040	ND	<0.040
Vinyl chloride	0.02	0.02	0.032	0.019	<0.019	ND	<0.019
Xylenes (Total)	0.09	0.05	26	0.02	<0.020	ND	<0.020

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.



- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas



TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.

Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	Sample ID	BH01-25 SA2
					Date and Time	3-Nov-2025
					Laboratory ID	C5E4917
					Sample Depth (mbgs)	0.7-1.3
					Laboratory Units	
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	ug/g	<0.0071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	ug/g	<0.0050
Acenaphthylene	0.093	0.093	0.15	0.005	ug/g	<0.0050
Anthracene	0.058	0.16	0.67	0.005	ug/g	<0.0050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	ug/g	<0.0050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	ug/g	<0.0050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	ug/g	<0.0050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	ug/g	<0.0050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	ug/g	<0.0050
Chrysene	7	2.8	9.6	0.005	ug/g	<0.0050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	ug/g	<0.0050
Fluoranthene	0.69	0.56	9.6	0.005	ug/g	<0.0050
Fluorene	6.8	0.12	62	0.005	ug/g	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	ug/g	<0.0050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	ug/g	<0.0050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	ug/g	<0.0050
Naphthalene	0.2	0.09	30	0.005	ug/g	<0.0050
Phenanthrene	6.2	0.69	9.6	0.005	ug/g	<0.0050
Pyrene	28	1	12	0.005	ug/g	<0.0050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	BH02-25 SA1	BH02-25 SA2
					3-Nov-2025	3-Nov-2025
					C5E4917	C5E4917
					0.0-0.6	0.7-1.3
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	0.011	<0.0071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	0.036	<0.0050
Acenaphthylene	0.093	0.093	0.15	0.005	<0.0050	<0.0050
Anthracene	0.058	0.16	0.67	0.005	<0.0050	<0.0050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	<0.0050	<0.0050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	0.0058	<0.0050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	0.0085	<0.0050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	0.013	<0.0050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	<0.0050	<0.0050
Chrysene	7	2.8	9.6	0.005	<0.0050	<0.0050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	<0.0050	<0.0050
Fluoranthene	0.69	0.56	9.6	0.005	0.0085	<0.0050
Fluorene	6.8	0.12	62	0.005	0.02	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	<0.0050	<0.0050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	0.011	<0.0050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	<0.010	<0.0050
Naphthalene	0.2	0.09	30	0.005	<0.0050	<0.0050
Phenanthrene	6.2	0.69	9.6	0.005	0.037	<0.0050
Pyrene	28	1	12	0.005	0.024	0.0092

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.

Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	BH03-25 SA1	BH03-25 SA2
					3-Nov-2025	3-Nov-2025
					AXHV76	AXHV77
					0.0-0.6	0.7-1.3
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	<0.071	<0.0071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	<0.050	<0.0050
Acenaphthylene	0.093	0.093	0.15	0.005	<0.050	<0.0050
Anthracene	0.058	0.16	0.67	0.005	<0.050	<0.0050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	<0.050	<0.0050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	<0.050	<0.0050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	<0.050	<0.0050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	0.064	<0.0050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	<0.050	<0.0050
Chrysene	7	2.8	9.6	0.005	<0.050	<0.0050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	<0.050	<0.0050
Fluoranthene	0.69	0.56	9.6	0.005	<0.050	<0.0050
Fluorene	6.8	0.12	62	0.005	<0.050	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	<0.050	<0.0050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	<0.050	<0.0050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	<0.050	<0.0050
Naphthalene	0.2	0.09	30	0.005	<0.050	<0.0050
Phenanthrene	6.2	0.69	9.6	0.005	<0.050	<0.0050
Pyrene	28	1	12	0.005	0.17	<0.0050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	BH04-25 SA1	DUP2
					3-Nov-2025	3-Nov-2025
					AXHV79	Field Duplicate
					0.0-0.6	
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	<0.071	<0.071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	<0.050	<0.050
Acenaphthylene	0.093	0.093	0.15	0.005	<0.050	<0.050
Anthracene	0.058	0.16	0.67	0.005	<0.050	<0.050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	<0.050	<0.050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	<0.050	<0.050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	<0.050	<0.050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	<0.050	<0.050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	<0.050	<0.050
Chrysene	7	2.8	9.6	0.005	<0.050	<0.050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	<0.050	<0.050
Fluoranthene	0.69	0.56	9.6	0.005	<0.050	<0.050
Fluorene	6.8	0.12	62	0.005	<0.050	<0.050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	<0.050	<0.050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	<0.050	<0.050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	<0.050	<0.050
Naphthalene	0.2	0.09	30	0.005	<0.050	<0.050
Phenanthrene	6.2	0.69	9.6	0.005	<0.050	<0.050
Pyrene	28	1	12	0.005	<0.050	<0.050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
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- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
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- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	RPD (%)	BH04-25 SA2
						3-Nov-2025
						AXHV80
						0.7-1.3
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	ND	<0.0071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	ND	<0.0050
Acenaphthylene	0.093	0.093	0.15	0.005	ND	<0.0050
Anthracene	0.058	0.16	0.67	0.005	ND	<0.0050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	ND	<0.0050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	ND	<0.0050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	ND	<0.0050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	ND	<0.0050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	ND	<0.0050
Chrysene	7	2.8	9.6	0.005	ND	<0.0050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	ND	<0.0050
Fluoranthene	0.69	0.56	9.6	0.005	ND	<0.0050
Fluorene	6.8	0.12	62	0.005	ND	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	ND	<0.0050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	ND	<0.0050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	ND	<0.0050
Naphthalene	0.2	0.09	30	0.005	ND	<0.0050
Phenanthrene	6.2	0.69	9.6	0.005	ND	<0.0050
Pyrene	28	1	12	0.005	ND	<0.0050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	BH05-25 SA1	BH05-25 SA2
					3-Nov-2025	3-Nov-2025
					AXHV82	AXHV83
					0.0-0.6	0.7-1.3
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	<0.0071	<0.0071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	<0.0050	<0.0050
Acenaphthylene	0.093	0.093	0.15	0.005	<0.0050	<0.0050
Anthracene	0.058	0.16	0.67	0.005	<0.0050	<0.0050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	<0.0050	<0.0050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	<0.0050	<0.0050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	<0.0050	<0.0050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	<0.0050	<0.0050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	<0.0050	<0.0050
Chrysene	7	2.8	9.6	0.005	<0.0050	<0.0050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	<0.0050	<0.0050
Fluoranthene	0.69	0.56	9.6	0.005	<0.0050	<0.0050
Fluorene	6.8	0.12	62	0.005	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	<0.0050	<0.0050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	<0.0050	<0.0050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	<0.0050	<0.0050
Naphthalene	0.2	0.09	30	0.005	<0.0050	<0.0050
Phenanthrene	6.2	0.69	9.6	0.005	<0.0050	<0.0050
Pyrene	28	1	12	0.005	<0.0050	<0.0050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	BH06-25 SA1	BH06-25 SA2
					3-Nov-2025	3-Nov-2025
					AXHV85	AXHV86
					0.0-0.6	0.7-1.3
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	<0.071	<0.030
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	<0.050	<0.0050
Acenaphthylene	0.093	0.093	0.15	0.005	<0.050	<0.0050
Anthracene	0.058	0.16	0.67	0.005	<0.050	<0.0050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	<0.050	0.0077
Benzo(a)pyrene	0.31	0.3	0.3	0.005	<0.050	0.012
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	<0.050	0.02
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	<0.050	0.02
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	<0.050	<0.0050
Chrysene	7	2.8	9.6	0.005	<0.050	0.0074
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	<0.050	<0.0050
Fluoranthene	0.69	0.56	9.6	0.005	<0.050	0.019
Fluorene	6.8	0.12	62	0.005	<0.050	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	<0.050	0.013
NOT 1-Methylnaphthalene	-	0.59	30	0.005	<0.050	0.0059
NOT 2-Methylnaphthalene	-	0.59	30	0.005	<0.050	<0.030
Naphthalene	0.2	0.09	30	0.005	<0.050	<0.0050
Phenanthrene	6.2	0.69	9.6	0.005	<0.050	0.011
Pyrene	28	1	12	0.005	<0.050	0.016

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	BH06-25 SA3	BH07-25 SA1
					3-Nov-2025	3-Nov-2025
					AXHV87	AXHV88
					0.0-0.6	0.7-1.3
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	<0.0071	<0.071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	<0.0050	<0.050
Acenaphthylene	0.093	0.093	0.15	0.005	<0.0050	<0.050
Anthracene	0.058	0.16	0.67	0.005	<0.0050	<0.050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	0.0051	<0.050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	0.0061	<0.050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	0.0088	<0.050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	0.0074	<0.050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	<0.0050	<0.050
Chrysene	7	2.8	9.6	0.005	0.0055	<0.050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	<0.0050	<0.050
Fluoranthene	0.69	0.56	9.6	0.005	0.0078	<0.050
Fluorene	6.8	0.12	62	0.005	<0.0050	<0.050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	<0.0050	<0.050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	<0.0050	<0.050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	<0.0050	<0.050
Naphthalene	0.2	0.09	30	0.005	<0.0050	<0.050
Phenanthrene	6.2	0.69	9.6	0.005	<0.0050	<0.050
Pyrene	28	1	12	0.005	0.009	<0.050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	BH07-25 SA2	DUP1
					3-Nov-2025	3-Nov-2025
					AXHV89	Field Duplicate
					0.0-0.6	
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	<0.0071	<0.0071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	<0.0050	<0.0050
Acenaphthylene	0.093	0.093	0.15	0.005	<0.0050	<0.0050
Anthracene	0.058	0.16	0.67	0.005	<0.0050	<0.0050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	<0.0050	<0.0050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	<0.0050	<0.0050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	<0.0050	<0.0050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	<0.0050	<0.0050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	<0.0050	<0.0050
Chrysene	7	2.8	9.6	0.005	<0.0050	<0.0050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	<0.0050	<0.0050
Fluoranthene	0.69	0.56	9.6	0.005	<0.0050	<0.0050
Fluorene	6.8	0.12	62	0.005	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	<0.0050	<0.0050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	<0.0050	<0.0050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	<0.0050	<0.0050
Naphthalene	0.2	0.09	30	0.005	<0.0050	<0.0050
Phenanthrene	6.2	0.69	9.6	0.005	<0.0050	<0.0050
Pyrene	28	1	12	0.005	<0.0050	<0.0050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit	RPD (%)	BH07-25 SA3
						3-Nov-2025
						AXHV90
						0.7-1.3
Calculated Parameters						
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071	ND	<0.0071
Polyaromatic Hydrocarbons						
Acenaphthene	2.5	0.072	21	0.005	ND	<0.0050
Acenaphthylene	0.093	0.093	0.15	0.005	ND	<0.0050
Anthracene	0.058	0.16	0.67	0.005	ND	<0.0050
Benzo(a)anthracene	0.5	0.36	0.96	0.005	ND	<0.0050
Benzo(a)pyrene	0.31	0.3	0.3	0.005	ND	<0.0050
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005	ND	<0.0050
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005	ND	<0.0050
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005	ND	<0.0050
Chrysene	7	2.8	9.6	0.005	ND	<0.0050
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005	ND	<0.0050
Fluoranthene	0.69	0.56	9.6	0.005	ND	<0.0050
Fluorene	6.8	0.12	62	0.005	ND	<0.0050
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005	ND	<0.0050
NOT 1-Methylnaphthalene	-	0.59	30	0.005	ND	<0.0050
NOT 2-Methylnaphthalene	-	0.59	30	0.005	ND	<0.0050
Naphthalene	0.2	0.09	30	0.005	ND	<0.0050
Phenanthrene	6.2	0.69	9.6	0.005	ND	<0.0050
Pyrene	28	1	12	0.005	ND	<0.0050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit
Calculated Parameters				
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071
Polyaromatic Hydrocarbons				
Acenaphthene	2.5	0.072	21	0.005
Acenaphthylene	0.093	0.093	0.15	0.005
Anthracene	0.058	0.16	0.67	0.005
Benzo(a)anthracene	0.5	0.36	0.96	0.005
Benzo(a)pyrene	0.31	0.3	0.3	0.005
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005
Chrysene	7	2.8	9.6	0.005
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005
Fluoranthene	0.69	0.56	9.6	0.005
Fluorene	6.8	0.12	62	0.005
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005
NOT 1-Methylnaphthalene	-	0.59	30	0.005
NOT 2-Methylnaphthalene	-	0.59	30	0.005
Naphthalene	0.2	0.09	30	0.005
Phenanthrene	6.2	0.69	9.6	0.005
Pyrene	28	1	12	0.005

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.



- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bur

TABLE 104

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 1 SCS Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2 SCS Industrial / Commercial / Community Property Use - Coarse Soils	Laboratory Detection Limit
Calculated Parameters				
1+2-Methylnaphthalenes	0.096	0.59	30	0.0071
Polyaromatic Hydrocarbons				
Acenaphthene	2.5	0.072	21	0.005
Acenaphthylene	0.093	0.093	0.15	0.005
Anthracene	0.058	0.16	0.67	0.005
Benzo(a)anthracene	0.5	0.36	0.96	0.005
Benzo(a)pyrene	0.31	0.3	0.3	0.005
Benzo(b&j)fluoranthene	3.2	0.47	0.96	0.005
Benzo(g,h,i)perylene	6.6	0.68	9.6	0.005
Benzo(k)fluoranthene	3.1	0.48	0.96	0.005
Chrysene	7	2.8	9.6	0.005
Dibenzo(ah)anthracene	0.57	0.1	0.1	0.005
Fluoranthene	0.69	0.56	9.6	0.005
Fluorene	6.8	0.12	62	0.005
Indeno(1,2,3-cd)pyrene	0.38	0.23	0.76	0.005
NOT 1-Methylnaphthalene	-	0.59	30	0.005
NOT 2-Methylnaphthalene	-	0.59	30	0.005
Naphthalene	0.2	0.09	30	0.005
Phenanthrene	6.2	0.69	9.6	0.005
Pyrene	28	1	12	0.005

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 1 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Background Site Condition Standards for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Industrial/Commercial/Community Property Use - Potable Groundwater Condition/Coarse Textured Soil.



- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 1 RPIICC SCS, as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 ICC SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bur

TABLE 105

ORGANOCHLORINE (OC) PESTICIDES ANALYSIS - SOIL
Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Residential / Parkland / Institutional Property Use - Fine Soils	MECP Table 3 SCS Residential / Parkland / Institutional Property Use - Coarse Soils	Laboratory Detection Limit	Sample Location		
					Sample ID	BH06-25 SA1	BH06-25 SA2
					Date and Time	3-Nov-2025	3-Nov-2025
					Laboratory ID	C5E4282	C5E4282
					Sample Depth (mbgs)	0.0-0.6	0.7-1.3
					Laboratory Units		
Aldrin	0.05	0.05	0.05	0.01	ug/g	<0.010	<0.0020
a-chlordane	-	-	-	0.01	ug/g	<0.010	<0.0020
g-chlordane	-	-	-	0.01	ug/g	<0.010	<0.0020
Chlordane	0.26	0.33	0.33	0.01	ug/g	<0.010	<0.0020
op-DDD	-	-	-	0.01	ug/g	<0.010	<0.0020
pp-DDD	-	-	-	0.01	ug/g	<0.010	<0.0020
DDD	3.3	3.3	3.3	0.01	ug/g	<0.010	<0.0020
o,p-DDE	-	-	-	0.01	ug/g	<0.010	<0.0020
pp-DDE	-	-	-	0.01	ug/g	<0.010	<0.0020
DDE	0.26	0.33	0.33	0.01	ug/g	<0.010	<0.0020
op-DDT	-	-	-	0.01	ug/g	<0.010	<0.0020
pp-DDT	-	-	-	0.01	ug/g	<0.010	<0.0020
DDT	0.078	1.4	1.4	0.01	ug/g	<0.010	<0.0020
Dieldrin	0.05	0.05	0.05	0.01	ug/g	<0.010	<0.0020
Endosulfan I	0.04	0.04	0.04	0.01	ug/g	<0.010	<0.0020
Endrin	0.04	0.04	0.04	0.01	ug/g	<0.010	<0.0020
Heptachlor	0.072	0.15	0.15	0.01	ug/g	<0.010	<0.0020
Heptachlor Epoxide	0.05	0.05	0.05	0.01	ug/g	<0.010	<0.0020
Hexachlorobenzene	0.034	0.52	0.52	0.01	ug/g	<0.010	<0.0020
Hexachlorobutadiene	0.01	0.014	0.014	0.01	ug/g	<0.010	<0.0020
Hexachloroethane	0.01	0.07	0.07	0.01	ug/g	<0.010	<0.0020
Methoxychlor	0.13	0.13	0.13	0.025	ug/g	<0.025	<0.0050

- Notes:
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
 - Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Potable Groundwater Condition/Fine Textured Soil.
 - Standards from Table 3 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Non-potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 RPI SCS (Fine Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3 RPI SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas



TABLE 105

ORGANOCHLORINE (OC) PESTICIDES ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Residential / Parkland / Institutional Property Use - Fine Soils	MECP Table 3 SCS Residential / Parkland / Institutional Property Use - Coarse Soils	Laboratory Detection Limit	BH06-25 SA3	BH07-25 SA1	DUP1
					3-Nov-2025	3-Nov-2025	3-Nov-2025
					C5E4282	C5E4282	Field Duplicate
					1.5-2.1	0.0-0.6	
Aldrin	0.05	0.05	0.05	0.01	<0.0020	<0.010	<0.0020
a-chlordane	-	-	-	0.01	<0.0020	<0.010	<0.0020
g-chlordane	-	-	-	0.01	<0.0020	<0.010	<0.0020
Chlordane	0.26	0.33	0.33	0.01	<0.0020	<0.010	<0.0020
op-DDD	-	-	-	0.01	<0.0020	<0.010	<0.0020
pp-DDD	-	-	-	0.01	<0.0020	<0.010	<0.0020
DDD	3.3	3.3	3.3	0.01	<0.0020	<0.010	<0.0020
o,p-DDE	-	-	-	0.01	<0.0020	<0.010	<0.0020
pp-DDE	-	-	-	0.01	<0.0020	<0.010	<0.0020
DDE	0.26	0.33	0.33	0.01	<0.0020	<0.010	<0.0020
op-DDT	-	-	-	0.01	<0.0020	<0.010	<0.0020
pp-DDT	-	-	-	0.01	<0.0020	<0.010	<0.0020
DDT	0.078	1.4	1.4	0.01	<0.0020	<0.010	<0.0020
Dieldrin	0.05	0.05	0.05	0.01	<0.0020	<0.010	<0.0020
Endosulfan I	0.04	0.04	0.04	0.01	<0.0020	<0.010	<0.0020
Endrin	0.04	0.04	0.04	0.01	<0.0020	<0.010	<0.0020
Heptachlor	0.072	0.15	0.15	0.01	<0.0020	<0.010	<0.0020
Heptachlor Epoxide	0.05	0.05	0.05	0.01	<0.0020	<0.010	<0.0020
Hexachlorobenzene	0.034	0.52	0.52	0.01	<0.0020	<0.010	<0.0020
Hexachlorobutadiene	0.01	0.014	0.014	0.01	<0.0020	<0.010	<0.0020
Hexachloroethane	0.01	0.07	0.07	0.01	<0.0020	<0.010	<0.0020
Methoxychlor	0.13	0.13	0.13	0.025	<0.0050	<0.025	<0.0050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Potable Groundwater Condition/Fine Textured Soil.
- Standards from Table 3 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Non-potable Groundwater Condition/Coarse Textured Soil.



- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 105

ORGANOCHLORINE (OC) PESTICIDES ANALYSIS - SOIL

Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 2.1 ESQS Agricultural or Other Property Use	MECP Table 2 SCS Residential / Parkland / Institutional Property Use - Fine Soils	MECP Table 3 SCS Residential / Parkland / Institutional Property Use - Coarse Soils	Laboratory Detection Limit	RPD (%)	BH07-25 SA2	BH07-25 SA3
						3-Nov-2025	3-Nov-2025
						C5E4282	C5E4282
						0.7-1.3	1.5-2.1
Aldrin	0.05	0.05	0.05	0.01	ND	<0.0020	<0.0020
a-chlordane	-	-	-	0.01	ND	<0.0020	<0.0020
g-chlordane	-	-	-	0.01	ND	<0.0020	<0.0020
Chlordane	0.26	0.33	0.33	0.01	ND	<0.0020	<0.0020
op-DDD	-	-	-	0.01	ND	<0.0020	<0.0020
pp-DDD	-	-	-	0.01	ND	<0.0020	<0.0020
DDD	3.3	3.3	3.3	0.01	ND	<0.0020	<0.0020
o,p-DDE	-	-	-	0.01	ND	<0.0020	<0.0020
pp-DDE	-	-	-	0.01	ND	<0.0020	<0.0020
DDE	0.26	0.33	0.33	0.01	ND	<0.0020	<0.0020
op-DDT	-	-	-	0.01	ND	<0.0020	<0.0020
pp-DDT	-	-	-	0.01	ND	<0.0020	<0.0020
DDT	0.078	1.4	1.4	0.01	ND	<0.0020	<0.0020
Dieldrin	0.05	0.05	0.05	0.01	ND	<0.0020	<0.0020
Endosulfan I	0.04	0.04	0.04	0.01	ND	<0.0020	<0.0020
Endrin	0.04	0.04	0.04	0.01	ND	<0.0020	<0.0020
Heptachlor	0.072	0.15	0.15	0.01	ND	<0.0020	<0.0020
Heptachlor Epoxide	0.05	0.05	0.05	0.01	ND	<0.0020	<0.0020
Hexachlorobenzene	0.034	0.52	0.52	0.01	ND	<0.0020	<0.0020
Hexachlorobutadiene	0.01	0.014	0.014	0.01	ND	<0.0020	<0.0020
Hexachloroethane	0.01	0.07	0.07	0.01	ND	<0.0020	<0.0020
Methoxychlor	0.13	0.13	0.13	0.025	ND	<0.0050	<0.0050

Notes:

- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 for Full Depth Excess Soil Quality Standards in a Potable Ground Water Condition for Agricultural Property Use.
- Standards from Table 2 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Potable Groundwater Condition/Fine Textured Soil.
- Standards from Table 3 of the MECP Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, April 15, 2011, O. Reg. 153/04 as amended document for Full Depth Generic Site Condition Standards for Residential/Parkland/Institutional Property Use - Non-potable Groundwater Condition/Coarse Textured Soil.

- Test results shown in bold type and highlighted exceeded the MECP Table 2.1 Agricultural ESQS.
- Test results shown in bold type and highlighted exceeded the MECP Table 2 RPI SCS (Fine Soils), as amended.
- Test results shown in bold type and highlighted exceeded the MECP Table 3 RPI SCS (Coarse Soils), as amended.
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- Relative Percent Difference (RPD) shown in bold red type exceed the alert criterion for soil duplicate samples of the Laboratory Services Branch MECP 2021 "Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act and Excess Soil Quality" Version 3.1.
- All Standards and results shown in µg/g.
- "-" Standard not available or parameter not analyzed.
- "NC" RPD not calculable / not valid.
- mbgs - metres below ground surface.
- Tests carried out by: Bureau Veritas

TABLE 106
O. REG. 406 MODIFIED SYNTHETIC PRECIPITATION LEACHING PROCEDURE ANALYSIS (mSPLP)
Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 1 LSL Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2.1 LSL Residential / Parkland / Institutional Property Use	MECP Table 3.1 LSL Agricultural or Other Property Use	Laboratory Detection Limit	Sample Location		
					Sample ID	BH03-25 SA3	BH04-25 SA2
					Date and Time	3-Nov-2025	3-Nov-2025
					Laboratory ID	AXHV78	AXHV80
					Sample Depth (mbgs)	1.5-2.1	0.7-1.3
					Laboratory Units		
Metals and Inorganics							
Antimony (Sb)	-	6	-	-	0.5	<0.5	<0.5
Molybdenum (Mo)	23	23	-	-	-	8	20
Silver (Ag)	0.3	0.3	0.3	-	0.1	<0.1	<0.1
Thallium (Tl)	2	2	-	-	0.05	<0.05	<0.05

Notes:

- Standards from Table 1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 - Leachate Screening Levels for Excess Soil Reuse for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 - Leachate Screening Levels for Full Depth Excess Soil Reuse in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use.
- Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 - Leachate Screening Levels for Full Depth Excess Soil Reuse in a Non-Potable Ground Water Condition for Agricultural Property Use.

- Test results shown in bold type exceeded the MECP Table 1 RPIICC LSLs, as amended.
- Test results shown in bold type exceeded the MECP Table 2.1 RPI LSLs
- Test results shown in bold type exceeded the MECP Table 3.1 Agricultural LSLs
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- All Standards and results shown in µg/L.
 - "-" Standard not available or parameter not analyzed.
 - mbgs - metres below ground surface.
 - Tests carried out by: Bureau Veritas

TABLE 106
O. REG. 406 MODIFIED SYNTHETIC PRECIPITATION LEACHING PROCEDURE ANALYSIS (mSPLP)
Reconstruction of Thames St., Niagara St., and Main St.
Wyoming, Ontario

Parameters	MECP Table 1 LSL Residential / Parkland / Institutional / Industrial / Commercial / Community Property Use	MECP Table 2.1 LSL Residential / Parkland / Institutional Property Use	MECP Table 3.1 LSL Agricultural or Other Property Use	Laboratory Detection Limit	BH05-25 SA3	BH06-25 SA3
					3-Nov-2025	3-Nov-2025
					AXHV84	AXHV87
					1.5-2.1	1.5-2.1
Metals and Inorganics						
Antimony (Sb)	-	6	-	-	<0.5	<0.5
Molybdenum (Mo)	23	23	-	-	14	12
Silver (Ag)	0.3	0.3	0.3	-	<0.1	<0.1
Thallium (Tl)	2	2	-	-	<0.05	<0.05

Notes:

- Standards from Table 1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 - Leachate Screening Levels for Excess Soil Reuse for Residential/Parkland/Institutional/Industrial/Commercial/Community Property Use.
- Standards from Table 2.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 - Leachate Screening Levels for Full Depth Excess Soil Reuse in a Potable Ground Water Condition for Residential/Parkland/Institutional Property Use.
- Standards from Table 3.1 of the MECP Rules for Soil Management and Excess Soil Quality Standards adopted by reference in O. Reg. 406/19 made under the Environmental Protection Act, R.S.O. 1990, cc. E.19 - Leachate Screening Levels for Full Depth Excess Soil Reuse in a Non-Potable Ground Water Condition for Agricultural Property Use.

- Test results shown in bold type exceeded the MECP Table 1 RPIICC LSLs, as amended.
- Test results shown in bold type exceeded the MECP Table 2.1 RPI LSLs
- Test results shown in bold type exceeded the MECP Table 3.1 Agricultural LSLs
- Laboratory detection limits for the test results shown in bold type and highlighted exceeded the applicable standards.
- All Standards and results shown in µg/L.
 - "-" Standard not available or parameter not analyzed.
 - mbgs - metres below ground surface.
 - Tests carried out by: Bureau Veritas

Appendix D

Laboratory Certificates of Analysis

FOR INFORMATION ONLY
PLEASE REGISTER TO BID



eNGLOBE



Your Project #: 02509562
Site Location: WYOMING ON
Your C.O.C. #: N/A

Attention: Emily Brook

Englobe Corp
London- Standing Offer
417 Exeter Rd
London, ON
CANADA N6E 2Z3

Report Date: 2025/12/05
Report #: R8663647
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C5E4282

Received: 2025/11/12, 16:44

Sample Matrix: Soil
Samples Received: 17

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Methylnaphthalene Sum	14	N/A	2025/11/19	CAM SOP-00301	EPA 8270D m
1,3-Dichloropropene Sum	8	N/A	2025/11/18		EPA 8260C m
Conductivity	16	2025/11/18	2025/11/18	CAM SOP-00414	OMOE E3530 v1 m
Conductivity	1	2025/11/19	2025/11/19	CAM SOP-00414	OMOE E3530 v1 m
Petroleum Hydro. CCME F1 & BTEX in Soil (1)	8	N/A	2025/11/17	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydro. CCME F1 & BTEX in Soil (1)	1	N/A	2025/11/18	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (2)	17	2025/11/17	2025/11/17	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric)	4	2025/11/19	2025/11/19	CAM SOP-00316	CCME PHC-CWS m
Acid Extractable Metals by ICPMS	17	2025/11/17	2025/11/18	CAM SOP-00447	EPA 6020B m
Total Metals in SPLP Leachate by ICPMS	3	2025/11/27	2025/11/27	CAM SOP-00447	EPA 6020B m
Total Metals in SPLP Leachate by ICPMS	1	2025/12/04	2025/12/04	CAM SOP-00447	EPA 6020B m
Moisture	17	N/A	2025/11/15	CAM SOP-00445	Carter 2nd ed 70.2 m
Modified SPLP extraction - Weight	3	N/A	2025/11/27	CAM SOP-00941	OMOECP LaSB E9003 R3
Modified SPLP extraction - Weight	1	N/A	2025/12/04	CAM SOP-00941	OMOECP LaSB E9003 R3
OC Pesticides (Selected) & PCB (3)	8	2025/11/19	2025/11/19	CAM SOP-00307	EPA 8081B/ 8082A
OC Pesticides Summed Parameters	8	N/A	2025/11/17	CAM SOP-00307	EPA 8081B/ 8082A
PAH Compounds in Soil by GC/MS (SIM)	14	2025/11/18	2025/11/18	CAM SOP-00318	EPA 8270E
pH CaCl2 EXTRACT	17	2025/11/18	2025/11/18	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	17	N/A	2025/11/19	CAM SOP-00102	EPA 6010C
Volatile Organic Compounds and F1 PHCs	8	N/A	2025/11/17	CAM SOP-00230	EPA 8260D m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or



Your Project #: 02509562
Site Location: WYOMING ON
Your C.O.C. #: N/A

Attention: Emily Brook

Englobe Corp
London- Standing Offer
417 Exeter Rd
London, ON
CANADA N6E 2Z3

Report Date: 2025/12/05
Report #: R8663647
Version: 3 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C5E4282

Received: 2025/11/12, 16:44

implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) No lab extraction date is given for F1BTX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(3) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Kudrat Bajwa, B.Sc., Project Manager
Email: Kudrat.Bajwa@bureauveritas.com
Phone# (905)817-5755

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK ICPMS METALS (SOIL)

Bureau Veritas ID		AXHV76	AXHV77	AXHV78	AXHV79	AXHV80	AXHV81		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	BH03-25 SA1	BH03-25 SA2	BH03-25 SA3	BH04-25 SA1	BH04-25 SA2	BH04-25 SA3	RDL	QC Batch
Metals									
Acid Extractable Antimony (Sb)	ug/g	0.21	0.43	0.25	<0.20	0.29	0.26	0.20	A055740
Acid Extractable Arsenic (As)	ug/g	2.9	7.8	5.6	2.0	6.4	5.8	1.0	A055740
Acid Extractable Barium (Ba)	ug/g	24	75	58	14	63	57	0.50	A055740
Acid Extractable Beryllium (Be)	ug/g	0.28	0.80	0.54	<0.20	0.53	0.48	0.20	A055740
Acid Extractable Boron (B)	ug/g	5.4	10	12	<5.0	13	12	5.0	A055740
Acid Extractable Cadmium (Cd)	ug/g	0.17	0.15	0.12	<0.10	0.13	0.14	0.10	A055740
Acid Extractable Chromium (Cr)	ug/g	13	28	21	4.8	21	20	1.0	A055740
Acid Extractable Cobalt (Co)	ug/g	4.3	11	8.8	2.1	9.8	8.2	0.10	A055740
Acid Extractable Copper (Cu)	ug/g	17	22	17	6.3	17	17	0.50	A055740
Acid Extractable Lead (Pb)	ug/g	15	11	8.1	4.1	7.4	7.9	1.0	A055740
Acid Extractable Molybdenum (Mo)	ug/g	1.0	3.6	3.8	0.53	3.9	3.4	0.50	A055740
Acid Extractable Nickel (Ni)	ug/g	13	34	26	6.2	26	23	0.50	A055740
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A055740
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A055740
Acid Extractable Thallium (Tl)	ug/g	0.13	0.22	0.20	0.063	0.23	0.21	0.050	A055740
Acid Extractable Uranium (U)	ug/g	0.75	1.3	1.1	0.59	1.1	1.1	0.050	A055740
Acid Extractable Vanadium (V)	ug/g	19	36	25	8.7	25	24	5.0	A055740
Acid Extractable Zinc (Zn)	ug/g	47	63	44	21	40	39	5.0	A055740
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK ICPMS METALS (SOIL)

Bureau Veritas ID		AXHV82	AXHV83	AXHV84	AXHV85	AXHV86	AXHV87		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	BH05-25 SA1	BH05-25 SA2	BH05-25 SA3	BH06-25 SA1	BH06-25 SA2	BH06-25 SA3	RDL	QC Batch

Metals									
Acid Extractable Antimony (Sb)	ug/g	0.24	<0.20	0.30	<0.20	0.37	0.21	0.20	A055740
Acid Extractable Arsenic (As)	ug/g	4.1	3.3	7.7	1.6	2.0	4.4	1.0	A055740
Acid Extractable Barium (Ba)	ug/g	12	19	53	11	48	19	0.50	A055740
Acid Extractable Beryllium (Be)	ug/g	<0.20	0.22	0.45	<0.20	0.47	0.26	0.20	A055740
Acid Extractable Boron (B)	ug/g	<5.0	5.2	10	<5.0	9.4	6.5	5.0	A055740
Acid Extractable Cadmium (Cd)	ug/g	0.10	<0.10	0.12	<0.10	0.22	<0.10	0.10	A055740
Acid Extractable Chromium (Cr)	ug/g	8.0	8.0	18	5.9	18	11	1.0	A055740
Acid Extractable Cobalt (Co)	ug/g	2.5	3.8	8.5	2.2	6.6	4.2	0.10	A055740
Acid Extractable Copper (Cu)	ug/g	8.1	9.4	19	7.1	18	11	0.50	A055740
Acid Extractable Lead (Pb)	ug/g	4.6	5.4	7.3	9.2	9.5	5.1	1.0	A055740
Acid Extractable Molybdenum (Mo)	ug/g	1.7	2.0	6.5	0.50	1.6	6.5	0.50	A055740
Acid Extractable Nickel (Ni)	ug/g	8.9	10	24	5.8	21	12	0.50	A055740
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	0.83	<0.50	0.50	A055740
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A055740
Acid Extractable Thallium (Tl)	ug/g	0.15	0.12	0.17	0.059	0.16	0.10	0.050	A055740
Acid Extractable Uranium (U)	ug/g	1.4	0.98	1.5	0.54	1.4	1.5	0.050	A055740
Acid Extractable Vanadium (V)	ug/g	11	13	24	11	23	16	5.0	A055740
Acid Extractable Zinc (Zn)	ug/g	22	23	42	25	43	20	5.0	A055740

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282
Report Date: 2025/12/05

Englobe Corp
Client Project #: 02509562
Site Location: WYOMING ON
Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK ICPMS METALS (SOIL)

Bureau Veritas ID		AXHV88	AXHV89	AXHV90	AXHV91	AXHV92		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	BH07-25 SA1	BH07-25 SA2	BH07-25 SA3	DUP1	DUP2	RDL	QC Batch
Metals								
Acid Extractable Antimony (Sb)	ug/g	<0.20	0.24	0.27	0.31	<0.20	0.20	A055740
Acid Extractable Arsenic (As)	ug/g	<1.0	4.9	5.7	5.8	2.1	1.0	A055740
Acid Extractable Barium (Ba)	ug/g	2.6	67	75	80	16	0.50	A055740
Acid Extractable Beryllium (Be)	ug/g	<0.20	0.57	0.62	0.66	<0.20	0.20	A055740
Acid Extractable Boron (B)	ug/g	<5.0	12	14	13	<5.0	5.0	A055740
Acid Extractable Cadmium (Cd)	ug/g	<0.10	0.12	0.14	0.12	<0.10	0.10	A055740
Acid Extractable Chromium (Cr)	ug/g	5.4	22	25	25	5.6	1.0	A055740
Acid Extractable Cobalt (Co)	ug/g	0.32	8.2	12	12	2.3	0.10	A055740
Acid Extractable Copper (Cu)	ug/g	0.60	17	19	20	6.9	0.50	A055740
Acid Extractable Lead (Pb)	ug/g	1.3	7.2	10	9.9	4.4	1.0	A055740
Acid Extractable Molybdenum (Mo)	ug/g	<0.50	2.1	3.0	2.5	0.61	0.50	A055740
Acid Extractable Nickel (Ni)	ug/g	1.1	25	35	35	6.7	0.50	A055740
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	A055740
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	A055740
Acid Extractable Thallium (Tl)	ug/g	<0.050	0.22	0.27	0.27	0.075	0.050	A055740
Acid Extractable Uranium (U)	ug/g	0.11	0.91	1.0	0.94	0.68	0.050	A055740
Acid Extractable Vanadium (V)	ug/g	<5.0	26	28	29	9.3	5.0	A055740
Acid Extractable Zinc (Zn)	ug/g	<5.0	42	50	50	23	5.0	A055740
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK OCS & PCBS (SOIL)

Bureau Veritas ID		AXHV85		AXHV86	AXHV87		AXHV88		
Sampling Date		2025/11/03		2025/11/03	2025/11/03		2025/11/03		
COC Number		N/A		N/A	N/A		N/A		
	UNITS	BH06-25 SA1	RDL	BH06-25 SA2	BH06-25 SA3	RDL	BH07-25 SA1	RDL	QC Batch
Calculated Parameters									
Aldrin + Dieldrin	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
Chlordane (Total)	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
DDT+ Metabolites	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
Heptachlor + Heptachlor epoxide	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
o,p-DDD + p,p-DDD	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
o,p-DDE + p,p-DDE	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
o,p-DDT + p,p-DDT	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
Total Endosulfan	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
Total PCB	ug/g	<0.075	0.075	<0.015	<0.015	0.015	<0.075	0.075	A054428
Pesticides & Herbicides									
Aldrin	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
a-Chlordane	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
g-Chlordane	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
o,p-DDD	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
p,p-DDD	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
o,p-DDE	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
p,p-DDE	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
o,p-DDT	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
p,p-DDT	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Dieldrin	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Lindane	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Endosulfan I (alpha)	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Endosulfan II (beta)	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Endrin	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Heptachlor	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Heptachlor epoxide	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Hexachlorobenzene	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Hexachlorobutadiene	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Hexachloroethane	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Methoxychlor	ug/g	<0.025	0.025	<0.0050	<0.0050	0.0050	<0.025	0.025	A057054
Aroclor 1242	ug/g	<0.075	0.075	<0.015	<0.015	0.015	<0.075	0.075	A057054
Aroclor 1248	ug/g	<0.075	0.075	<0.015	<0.015	0.015	<0.075	0.075	A057054
Aroclor 1254	ug/g	<0.075	0.075	<0.015	<0.015	0.015	<0.075	0.075	A057054
Aroclor 1260	ug/g	<0.075	0.075	<0.015	<0.015	0.015	<0.075	0.075	A057054
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK OCS & PCBS (SOIL)

Bureau Veritas ID		AXHV85		AXHV86	AXHV87		AXHV88		
Sampling Date		2025/11/03		2025/11/03	2025/11/03		2025/11/03		
COC Number		N/A		N/A	N/A		N/A		
	UNITS	BH06-25 SA1	RDL	BH06-25 SA2	BH06-25 SA3	RDL	BH07-25 SA1	RDL	QC Batch
Endosulfan sulfate	ug/g	<0.010	0.010	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Surrogate Recovery (%)									
2,4,5,6-Tetrachloro-m-xylene	%	96		92	91		90		A057054
Decachlorobiphenyl	%	79		85	76		81		A057054
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

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BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK OCS & PCBS (SOIL)

Bureau Veritas ID		AXHV89	AXHV90	AXHV91		AXHV92		
Sampling Date		2025/11/03	2025/11/03	2025/11/03		2025/11/03		
COC Number		N/A	N/A	N/A		N/A		
	UNITS	BH07-25 SA2	BH07-25 SA3	DUP1	RDL	DUP2	RDL	QC Batch
Calculated Parameters								
Aldrin + Dieldrin	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
Chlordane (Total)	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
DDT+ Metabolites	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
Heptachlor + Heptachlor epoxide	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
o,p-DDD + p,p-DDD	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
o,p-DDE + p,p-DDE	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
o,p-DDT + p,p-DDT	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
Total Endosulfan	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A054428
Total PCB	ug/g	<0.015	<0.015	<0.015	0.015	<0.075	0.075	A054428
Pesticides & Herbicides								
Aldrin	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
a-Chlordane	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
g-Chlordane	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
o,p-DDD	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
p,p-DDD	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
o,p-DDE	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
p,p-DDE	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
o,p-DDT	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
p,p-DDT	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Dieldrin	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Lindane	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Endosulfan I (alpha)	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Endosulfan II (beta)	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Endrin	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Heptachlor	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Heptachlor epoxide	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Hexachlorobenzene	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Hexachlorobutadiene	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Hexachloroethane	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Methoxychlor	ug/g	<0.0050	<0.0050	<0.0050	0.0050	<0.025	0.025	A057054
Aroclor 1242	ug/g	<0.015	<0.015	<0.015	0.015	<0.075	0.075	A057054
Aroclor 1248	ug/g	<0.015	<0.015	<0.015	0.015	<0.075	0.075	A057054
Aroclor 1254	ug/g	<0.015	<0.015	<0.015	0.015	<0.075	0.075	A057054
Aroclor 1260	ug/g	<0.015	<0.015	<0.015	0.015	<0.075	0.075	A057054
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK OCS & PCBS (SOIL)

Bureau Veritas ID		AXHV89	AXHV90	AXHV91		AXHV92		
Sampling Date		2025/11/03	2025/11/03	2025/11/03		2025/11/03		
COC Number		N/A	N/A	N/A		N/A		
	UNITS	BH07-25 SA2	BH07-25 SA3	DUP1	RDL	DUP2	RDL	QC Batch
Endosulfan sulfate	ug/g	<0.0020	<0.0020	<0.0020	0.0020	<0.010	0.010	A057054
Surrogate Recovery (%)								
2,4,5,6-Tetrachloro-m-xylene	%	89	87	97		114		A057054
Decachlorobiphenyl	%	80	67	73		84		A057054
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

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BUREAU
VERITAS

Bureau Veritas Job #: C5E4282
Report Date: 2025/12/05

Englobe Corp
Client Project #: 02509562
Site Location: WYOMING ON
Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK PAHS (SOIL)

Bureau Veritas ID		AXHV76		AXHV77		AXHV79		AXHV80	AXHV82		
Sampling Date		2025/11/03		2025/11/03		2025/11/03		2025/11/03	2025/11/03		
COC Number		N/A		N/A		N/A		N/A	N/A		
	UNITS	BH03-25 SA1	RDL	BH03-25 SA2	RDL	BH04-25 SA1	RDL	BH04-25 SA2	BH05-25 SA1	RDL	QC Batch

Calculated Parameters

Methylnaphthalene, 2-(1-)	ug/g	<0.071	0.071	<0.0071	0.0071	<0.071	0.071	<0.0071	<0.0071	0.0071	A054207

Polyaromatic Hydrocarbons

Acenaphthene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Acenaphthylene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Anthracene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Benzo(a)anthracene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Benzo(a)pyrene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Benzo(b,j)fluoranthene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Benzo(g,h,i)perylene	ug/g	0.064	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Benzo(k)fluoranthene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Chrysene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Dibenzo(a,h)anthracene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Fluoranthene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Fluorene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Indeno(1,2,3-cd)pyrene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
1-Methylnaphthalene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
2-Methylnaphthalene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Naphthalene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Phenanthrene	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Pyrene	ug/g	0.17	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147
Biphenyl	ug/g	<0.050	0.050	<0.0050	0.0050	<0.050	0.050	<0.0050	<0.0050	0.0050	A056147

Surrogate Recovery (%)

D10-Anthracene	%	103		105		111		114	114		A056147
D14-Terphenyl (FS)	%	99		96		106		107	106		A056147
D8-Acenaphthylene	%	99		95		106		101	104		A056147

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK PAHS (SOIL)

Bureau Veritas ID		AXHV83		AXHV85		AXHV86		AXHV87		
Sampling Date		2025/11/03		2025/11/03		2025/11/03		2025/11/03		
COC Number		N/A		N/A		N/A		N/A		
	UNITS	BH05-25 SA2	RDL	BH06-25 SA1	RDL	BH06-25 SA2	RDL	BH06-25 SA3	RDL	QC Batch
Calculated Parameters										
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	<0.071	0.071	<0.030	0.030	<0.0071	0.0071	A054207
Polyaromatic Hydrocarbons										
Acenaphthene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	<0.0050	0.0050	A056147
Acenaphthylene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	<0.0050	0.0050	A056147
Anthracene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	<0.0050	0.0050	A056147
Benzo(a)anthracene	ug/g	<0.0050	0.0050	<0.050	0.050	0.0077	0.0050	0.0051	0.0050	A056147
Benzo(a)pyrene	ug/g	<0.0050	0.0050	<0.050	0.050	0.012	0.0050	0.0061	0.0050	A056147
Benzo(b,j)fluoranthene	ug/g	<0.0050	0.0050	<0.050	0.050	0.020	0.0050	0.0088	0.0050	A056147
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	<0.050	0.050	0.020	0.0050	0.0074	0.0050	A056147
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	<0.0050	0.0050	A056147
Chrysene	ug/g	<0.0050	0.0050	<0.050	0.050	0.0074	0.0050	0.0055	0.0050	A056147
Dibenzo(a,h)anthracene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	<0.0050	0.0050	A056147
Fluoranthene	ug/g	<0.0050	0.0050	<0.050	0.050	0.019	0.0050	0.0078	0.0050	A056147
Fluorene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	<0.0050	0.0050	A056147
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	<0.050	0.050	0.013	0.0050	<0.0050	0.0050	A056147
1-Methylnaphthalene	ug/g	<0.0050	0.0050	<0.050	0.050	0.0059	0.0050	<0.0050	0.0050	A056147
2-Methylnaphthalene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.030 (1)	0.030	<0.0050	0.0050	A056147
Naphthalene	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	<0.0050	0.0050	A056147
Phenanthrene	ug/g	<0.0050	0.0050	<0.050	0.050	0.011	0.0050	<0.0050	0.0050	A056147
Pyrene	ug/g	<0.0050	0.0050	<0.050	0.050	0.016	0.0050	0.0090	0.0050	A056147
Biphenyl	ug/g	<0.0050	0.0050	<0.050	0.050	<0.0050	0.0050	<0.0050	0.0050	A056147
Surrogate Recovery (%)										
D10-Anthracene	%	112		106		112		112		A056147
D14-Terphenyl (FS)	%	104		110		104		105		A056147
D8-Acenaphthylene	%	97		108		97		98		A056147
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
(1) Detection Limit was raised due to matrix interferences.										



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK PAHS (SOIL)

Bureau Veritas ID		AXHV88		AXHV89	AXHV90	AXHV91		AXHV92		
Sampling Date		2025/11/03		2025/11/03	2025/11/03	2025/11/03		2025/11/03		
COC Number		N/A		N/A	N/A	N/A		N/A		
	UNITS	BH07-25 SA1	RDL	BH07-25 SA2	BH07-25 SA3	DUP1	RDL	DUP2	RDL	QC Batch

Calculated Parameters

Methylnaphthalene, 2-(1-)	ug/g	<0.071	0.071	<0.0071	<0.0071	<0.0071	0.0071	<0.071	0.071	A054207

Polyaromatic Hydrocarbons

Acenaphthene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Acenaphthylene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Anthracene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Benzo(a)anthracene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Benzo(a)pyrene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Benzo(b,j)fluoranthene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Benzo(g,h,i)perylene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Benzo(k)fluoranthene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Chrysene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Dibenzo(a,h)anthracene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Fluoranthene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Fluorene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Indeno(1,2,3-cd)pyrene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
1-Methylnaphthalene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
2-Methylnaphthalene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Naphthalene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Phenanthrene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Pyrene	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147
Biphenyl	ug/g	<0.050	0.050	<0.0050	<0.0050	<0.0050	0.0050	<0.050	0.050	A056147

Surrogate Recovery (%)

D10-Anthracene	%	109		110	110	113		115		A056147
D14-Terphenyl (FS)	%	107		103	103	104		114		A056147
D8-Acenaphthylene	%	109		98	98	97		111		A056147

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK BTEX/F1-F4 (SOIL)

Bureau Veritas ID		AXHV76	AXHV77	AXHV78	AXHV79	AXHV80	AXHV81		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	BH03-25 SA1	BH03-25 SA2	BH03-25 SA3	BH04-25 SA1	BH04-25 SA2	BH04-25 SA3	RDL	QC Batch
BTEX & F1 Hydrocarbons									
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A055358
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A055358
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A055358
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A055358
p+m-Xylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055358
Total Xylenes	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055358
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	<10	10	A055358
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	<10	10	A055358
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	96	<7.0	<7.0	<7.0	<7.0	<7.0	7.0	A055262
F3 (C16-C34 Hydrocarbons)	ug/g	1300	<50	<50	240	<50	<50	50	A055262
F4 (C34-C50 Hydrocarbons)	ug/g	2800	<50	<50	600	<50	<50	50	A055262
Reached Baseline at C50	ug/g	No	Yes	Yes	No	Yes	Yes		A055262
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	99	103	102	104	102	104		A055358
4-Bromofluorobenzene	%	101	99	99	98	98	99		A055358
D10-o-Xylene	%	103	102	99	101	98	105		A055358
D4-1,2-Dichloroethane	%	94	95	95	92	93	91		A055358
o-Terphenyl	%	99	88	93	88	98	97		A055262
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK BTEX/F1-F4 (SOIL)

Bureau Veritas ID		AXHV82	AXHV83	AXHV84		
Sampling Date		2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A		
	UNITS	BH05-25 SA1	BH05-25 SA2	BH05-25 SA3	RDL	QC Batch
BTEX & F1 Hydrocarbons						
Benzene	ug/g	<0.020	<0.020	<0.020	0.020	A055358
Toluene	ug/g	<0.020	<0.020	<0.020	0.020	A055358
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	0.020	A055358
o-Xylene	ug/g	<0.020	<0.020	<0.020	0.020	A055358
p+m-Xylene	ug/g	<0.040	<0.040	<0.040	0.040	A055358
Total Xylenes	ug/g	<0.040	<0.040	<0.040	0.040	A055358
F1 (C6-C10)	ug/g	<10	<10	<10	10	A055358
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	10	A055358
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	<7.0	<7.0	<7.0	7.0	A055262
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	<50	50	A055262
F4 (C34-C50 Hydrocarbons)	ug/g	65	<50	<50	50	A055262
Reached Baseline at C50	ug/g	Yes	Yes	Yes		A055262
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	103	98	105		A055358
4-Bromofluorobenzene	%	99	100	98		A055358
D10-o-Xylene	%	101	101	109		A055358
D4-1,2-Dichloroethane	%	88	90	82		A055358
o-Terphenyl	%	95	98	93		A055262
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK VOCS/F1-F4 (SOIL)

Bureau Veritas ID		AXHV85	AXHV86	AXHV87	AXHV88	AXHV89		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	BH06-25 SA1	BH06-25 SA2	BH06-25 SA3	BH07-25 SA1	BH07-25 SA2	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	A054281
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.49	<0.49	<0.49	<0.49	<0.49	0.49	A055738
Benzene	ug/g	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	0.0060	A055738
Bromodichloromethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Bromoform	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Bromomethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Carbon Tetrachloride	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Chlorobenzene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Chloroform	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Dibromochloromethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,2-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,3-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,4-Dichlorobenzene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,1-Dichloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,2-Dichloroethane	ug/g	<0.049	<0.049	<0.049	<0.049	<0.049	0.049	A055738
1,1-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
cis-1,2-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
trans-1,2-Dichloroethylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,2-Dichloropropane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
cis-1,3-Dichloropropene	ug/g	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	A055738
trans-1,3-Dichloropropene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Ethylbenzene	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A055738
Ethylene Dibromide	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Hexane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Methylene Chloride(Dichloromethane)	ug/g	<0.049	<0.049	<0.049	<0.049	<0.049	0.049	A055738
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A055738
Methyl Isobutyl Ketone	ug/g	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	A055738
Methyl t-butyl ether (MTBE)	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Styrene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,1,1,2-Tetrachloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,1,1,2,2-Tetrachloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Tetrachloroethylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK VOCS/F1-F4 (SOIL)

Bureau Veritas ID		AXHV85	AXHV86	AXHV87	AXHV88	AXHV89		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	BH06-25 SA1	BH06-25 SA2	BH06-25 SA3	BH07-25 SA1	BH07-25 SA2	RDL	QC Batch
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A055738
1,1,1-Trichloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
1,1,2-Trichloroethane	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Trichloroethylene	ug/g	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	A055738
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A055738
Vinyl Chloride	ug/g	<0.019	<0.019	<0.019	<0.019	<0.019	0.019	A055738
p+m-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A055738
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A055738
Total Xylenes	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A055738
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	10	A055738
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	10	A055738
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<7.0	<7.0	<7.0	<7.0	<7.0	7.0	A055262
F3 (C16-C34 Hydrocarbons)	ug/g	83	58	<50	110	<50	50	A055262
F4 (C34-C50 Hydrocarbons)	ug/g	180	<50	<50	200	<50	50	A055262
Reached Baseline at C50	ug/g	No	Yes	Yes	Yes	Yes		A055262
Surrogate Recovery (%)								
o-Terphenyl	%	95	99	99	102	104		A055262
4-Bromofluorobenzene	%	90	91	91	90	91		A055738
D10-o-Xylene	%	94	103	97	106	101		A055738
D4-1,2-Dichloroethane	%	96	96	93	95	97		A055738
D8-Toluene	%	101	101	103	102	101		A055738
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK VOCS/F1-F4 (SOIL)

Bureau Veritas ID		AXHV90		AXHV91		AXHV92		
Sampling Date		2025/11/03		2025/11/03		2025/11/03		
COC Number		N/A		N/A		N/A		
	UNITS	BH07-25 SA3	QC Batch	DUP1	QC Batch	DUP2	RDL	QC Batch
Calculated Parameters								
1,3-Dichloropropene (cis+trans)	ug/g	<0.050	A054281	<0.050	A054281	<0.050	0.050	A054281
Volatile Organics								
Acetone (2-Propanone)	ug/g	<0.49	A055738	<0.49	A055738	<0.49	0.49	A055738
Benzene	ug/g	<0.0060	A055738	<0.0060	A055738	<0.0060	0.0060	A055738
Bromodichloromethane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Bromoform	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Bromomethane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Carbon Tetrachloride	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Chlorobenzene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Chloroform	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Dibromochloromethane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,2-Dichlorobenzene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,3-Dichlorobenzene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,4-Dichlorobenzene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Dichlorodifluoromethane (FREON 12)	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,1-Dichloroethane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,2-Dichloroethane	ug/g	<0.049	A055738	<0.049	A055738	<0.049	0.049	A055738
1,1-Dichloroethylene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
cis-1,2-Dichloroethylene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
trans-1,2-Dichloroethylene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,2-Dichloropropane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
cis-1,3-Dichloropropene	ug/g	<0.030	A055738	<0.030	A055738	<0.030	0.030	A055738
trans-1,3-Dichloropropene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Ethylbenzene	ug/g	<0.010	A055738	<0.010	A055738	<0.010	0.010	A055738
Ethylene Dibromide	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Hexane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Methylene Chloride(Dichloromethane)	ug/g	<0.049	A055738	<0.049	A055738	<0.049	0.049	A055738
Methyl Ethyl Ketone (2-Butanone)	ug/g	<0.40	A055738	<0.40	A055738	<0.40	0.40	A055738
Methyl Isobutyl Ketone	ug/g	<0.40	A055738	<0.40	A055738	<0.40	0.40	A055738
Methyl t-butyl ether (MTBE)	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Styrene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,1,1,2-Tetrachloroethane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,1,2,2-Tetrachloroethane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Tetrachloroethylene	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK VOCS/F1-F4 (SOIL)

Bureau Veritas ID		AXHV90		AXHV91		AXHV92		
Sampling Date		2025/11/03		2025/11/03		2025/11/03		
COC Number		N/A		N/A		N/A		
	UNITS	BH07-25 SA3	QC Batch	DUP1	QC Batch	DUP2	RDL	QC Batch
Toluene	ug/g	<0.020	A055738	<0.020	A055738	<0.020	0.020	A055738
1,1,1-Trichloroethane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
1,1,2-Trichloroethane	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Trichloroethylene	ug/g	<0.010	A055738	<0.010	A055738	<0.010	0.010	A055738
Trichlorofluoromethane (FREON 11)	ug/g	<0.040	A055738	<0.040	A055738	<0.040	0.040	A055738
Vinyl Chloride	ug/g	<0.019	A055738	<0.019	A055738	<0.019	0.019	A055738
p+m-Xylene	ug/g	<0.020	A055738	<0.020	A055738	<0.020	0.020	A055738
o-Xylene	ug/g	<0.020	A055738	<0.020	A055738	<0.020	0.020	A055738
Total Xylenes	ug/g	<0.020	A055738	<0.020	A055738	<0.020	0.020	A055738
F1 (C6-C10)	ug/g	<10	A055738	<10	A055738	<10	10	A055738
F1 (C6-C10) - BTEX	ug/g	<10	A055738	<10	A055738	<10	10	A055738
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<7.0	A055262	<7.0	A055922	<7.0	7.0	A055262
F3 (C16-C34 Hydrocarbons)	ug/g	<50	A055262	<50	A055922	210	50	A055262
F4 (C34-C50 Hydrocarbons)	ug/g	<50	A055262	<50	A055922	500	50	A055262
Reached Baseline at C50	ug/g	Yes	A055262	Yes	A055922	No		A055262
Surrogate Recovery (%)								
o-Terphenyl	%	101	A055262	91	A055922	101		A055262
4-Bromofluorobenzene	%	91	A055738	90	A055738	90		A055738
D10-o-Xylene	%	99	A055738	100	A055738	98		A055738
D4-1,2-Dichloroethane	%	94	A055738	98	A055738	95		A055738
D8-Toluene	%	103	A055738	101	A055738	102		A055738
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL SPLP METALS (SOIL)

Bureau Veritas ID		AXHV78		AXHV80	AXHV84		AXHV87		
Sampling Date		2025/11/03		2025/11/03	2025/11/03		2025/11/03		
COC Number		N/A		N/A	N/A		N/A		
	UNITS	BH03-25 SA3	QC Batch	BH04-25 SA2	BH05-25 SA3	QC Batch	BH06-25 SA3	RDL	QC Batch
Metals									
Leachable (SPLP) Antimony (Sb)	ug/L	<0.5	A063005	<0.5	<0.5	A063044	<0.5	0.5	A067428
Leachable (SPLP) Molybdenum (Mo)	ug/L	8	A063005	20	14	A063044	12	1	A067428
Leachable (SPLP) Silver (Ag)	ug/L	<0.1	A063005	<0.1	<0.1	A063044	<0.1	0.1	A067428
Leachable (SPLP) Thallium (Tl)	ug/L	<0.05	A063005	<0.05	<0.05	A063044	<0.05	0.05	A067428
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

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BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

O.REG 406 EXCESS SOIL MSPLP PREP (SOIL)

Bureau Veritas ID		AXHV78		AXHV80	AXHV84		AXHV87	
Sampling Date		2025/11/03		2025/11/03	2025/11/03		2025/11/03	
COC Number		N/A		N/A	N/A		N/A	
	UNITS	BH03-25 SA3	QC Batch	BH04-25 SA2	BH05-25 SA3	QC Batch	BH06-25 SA3	QC Batch
Inorganics								
Dry Weight	g	100	A062060	100	100	A062061	100	A066712
QC Batch = Quality Control Batch								

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BUREAU
VERITAS

Bureau Veritas Job #: C5E4282
Report Date: 2025/12/05

Englobe Corp
Client Project #: 02509562
Site Location: WYOMING ON
Sampler Initials: EB

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		AXHV76	AXHV77	AXHV78	AXHV79		AXHV80		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03		2025/11/03		
COC Number		N/A	N/A	N/A	N/A		N/A		
	UNITS	BH03-25 SA1	BH03-25 SA2	BH03-25 SA3	BH04-25 SA1	QC Batch	BH04-25 SA2	RDL	QC Batch

Calculated Parameters									
Sodium Adsorption Ratio	N/A	21	5.4	3.9	2.9	A054209	0.69		A054209
Inorganics									
Conductivity	mS/cm	0.82	1.0	0.63	0.37	A056544	0.34	0.002	A056274
Moisture	%	12	17	13	5.1	A055148	14	1.0	A055148
Available (CaCl ₂) pH	pH	7.49	7.58	7.77	8.06	A056634	7.83		A056634
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

Bureau Veritas ID		AXHV81	AXHV82	AXHV83	AXHV84	AXHV85	AXHV86		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	BH04-25 SA3	BH05-25 SA1	BH05-25 SA2	BH05-25 SA3	BH06-25 SA1	BH06-25 SA2	RDL	QC Batch

Calculated Parameters									
Sodium Adsorption Ratio	N/A	0.48	7.1	6.4	3.4	14	4.9		A054209
Inorganics									
Conductivity	mS/cm	0.30	0.60	0.58	0.66	0.52	0.59	0.002	A056544
Moisture	%	13	5.4	8.8	14	4.7	24	1.0	A055148
Available (CaCl ₂) pH	pH	7.92	8.04	7.49	7.56	8.03	7.65		A056634
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

Bureau Veritas ID		AXHV87	AXHV88	AXHV89	AXHV90	AXHV91		AXHV92		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		2025/11/03		
COC Number		N/A	N/A	N/A	N/A	N/A		N/A		
	UNITS	BH06-25 SA3	BH07-25 SA1	BH07-25 SA2	BH07-25 SA3	DUP1	QC Batch	DUP2	RDL	QC Batch

Calculated Parameters										
Sodium Adsorption Ratio	N/A	2.6	0.22	0.48	0.24	0.34	A054209	3.0		A054209
Inorganics										
Conductivity	mS/cm	0.42	0.27	0.44	0.40	0.49	A056544	0.46	0.002	A057131
Moisture	%	12	3.4	16	15	15	A055148	4.4	1.0	A055148
Available (CaCl ₂) pH	pH	7.49	8.39	7.85	7.80	7.84	A056634	8.16		A056634
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										



BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AXHV76	AXHV79	AXHV85	AXHV92		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		N/A	N/A	N/A	N/A		
	UNITS	BH03-25 SA1	BH04-25 SA1	BH06-25 SA1	DUP2	RDL	QC Batch
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	9800	2000	930	1400	100	A057064
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							

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GENERAL COMMENTS

Revised Report [2025/12/05]: Requested additional analysis for splp metals added.

Revised Report [2025/11/28]: Requested additional analysis for splp metals added.

F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Sample AXHV76 [BH03-25 SA1] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample AXHV79 [BH04-25 SA1] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample AXHV85 [BH06-25 SA1] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

OC Pesticide Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample AXHV88 [BH07-25 SA1] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

OC Pesticide Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample AXHV92 [DUP2] : PAH Analysis: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

OC Pesticide Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

QUALITY ASSURANCE REPORT

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A055262	o-Terphenyl	2025/11/17	95	60 - 140	99	60 - 140	100	%				
A055358	1,4-Difluorobenzene	2025/11/17	102	60 - 140	103	60 - 140	104	%				
A055358	4-Bromofluorobenzene	2025/11/17	99	60 - 140	100	60 - 140	99	%				
A055358	D10-o-Xylene	2025/11/17	106	60 - 140	101	60 - 140	101	%				
A055358	D4-1,2-Dichloroethane	2025/11/17	94	60 - 140	93	60 - 140	95	%				
A055738	4-Bromofluorobenzene	2025/11/17	90	60 - 140	97	60 - 140	91	%				
A055738	D10-o-Xylene	2025/11/17	117	60 - 130	111	60 - 130	94	%				
A055738	D4-1,2-Dichloroethane	2025/11/17	96	60 - 140	102	60 - 140	96	%				
A055738	D8-Toluene	2025/11/17	106	60 - 140	116	60 - 140	102	%				
A055922	o-Terphenyl	2025/11/17	101	60 - 140	95	60 - 140	95	%				
A056147	D10-Anthracene	2025/11/18	110	50 - 130	114	50 - 130	114	%				
A056147	D14-Terphenyl (FS)	2025/11/18	98	50 - 130	103	50 - 130	102	%				
A056147	D8-Acenaphthylene	2025/11/18	96	50 - 130	100	50 - 130	99	%				
A057054	2,4,5,6-Tetrachloro-m-xylene	2025/11/19	91	50 - 130	78	50 - 130	79	%				
A057054	Decachlorobiphenyl	2025/11/19	78	50 - 130	71	50 - 130	68	%				
A055148	Moisture	2025/11/15							5.9	20		
A055262	F2 (C10-C16 Hydrocarbons)	2025/11/17	91	60 - 140	96	80 - 120	<7.0	ug/g	NC	30		
A055262	F3 (C16-C34 Hydrocarbons)	2025/11/17	92	60 - 140	98	80 - 120	<50	ug/g	NC	30		
A055262	F4 (C34-C50 Hydrocarbons)	2025/11/17	85	60 - 140	92	80 - 120	<50	ug/g	NC	30		
A055358	Benzene	2025/11/18	94	50 - 140	91	50 - 140	<0.020	ug/g	NC	50		
A055358	Ethylbenzene	2025/11/18	105	50 - 140	101	50 - 140	<0.020	ug/g	NC	50		
A055358	F1 (C6-C10) - BTEX	2025/11/18					<10	ug/g	NC	30		
A055358	F1 (C6-C10)	2025/11/18	108	60 - 140	100	80 - 120	<10	ug/g	NC	30		
A055358	o-Xylene	2025/11/18	102	50 - 140	98	50 - 140	<0.020	ug/g	NC	50		
A055358	p+m-Xylene	2025/11/18	100	50 - 140	95	50 - 140	<0.040	ug/g	NC	50		
A055358	Toluene	2025/11/18	92	50 - 140	89	50 - 140	<0.020	ug/g	NC	50		
A055358	Total Xylenes	2025/11/18					<0.040	ug/g	NC	50		
A055738	1,1,1,2-Tetrachloroethane	2025/11/17	86	60 - 140	97	60 - 130	<0.040	ug/g	NC	50		
A055738	1,1,1-Trichloroethane	2025/11/17	76	60 - 140	89	60 - 130	<0.040	ug/g	NC	50		
A055738	1,1,2,2-Tetrachloroethane	2025/11/17	94	60 - 140	98	60 - 130	<0.040	ug/g	NC	50		
A055738	1,1,2-Trichloroethane	2025/11/17	95	60 - 140	103	60 - 130	<0.040	ug/g	NC	50		
A055738	1,1-Dichloroethane	2025/11/17	87	60 - 140	100	60 - 130	<0.040	ug/g	NC	50		

BUREAU
VERITAS

Bureau Veritas Job #: C5E4282

Report Date: 2025/12/05

QUALITY ASSURANCE REPORT(CONT'D)

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A055738	1,1-Dichloroethylene	2025/11/17	90	60 - 140	107	60 - 130	<0.040	ug/g	NC	50		
A055738	1,2-Dichlorobenzene	2025/11/17	87	60 - 140	90	60 - 130	<0.040	ug/g	NC	50		
A055738	1,2-Dichloroethane	2025/11/17	85	60 - 140	93	60 - 130	<0.049	ug/g	NC	50		
A055738	1,2-Dichloropropane	2025/11/17	93	60 - 140	103	60 - 130	<0.040	ug/g	NC	50		
A055738	1,3-Dichlorobenzene	2025/11/17	88	60 - 140	94	60 - 130	<0.040	ug/g	NC	50		
A055738	1,4-Dichlorobenzene	2025/11/17	89	60 - 140	94	60 - 130	<0.040	ug/g	NC	50		
A055738	Acetone (2-Propanone)	2025/11/17	104	60 - 140	109	60 - 140	<0.49	ug/g	NC	50		
A055738	Benzene	2025/11/17	86	60 - 140	99	60 - 130	<0.0060	ug/g	NC	50		
A055738	Bromodichloromethane	2025/11/17	79	60 - 140	87	60 - 130	<0.040	ug/g	NC	50		
A055738	Bromoform	2025/11/17	75	60 - 140	80	60 - 130	<0.040	ug/g	NC	50		
A055738	Bromomethane	2025/11/17	73	60 - 140	94	60 - 140	<0.040	ug/g	NC	50		
A055738	Carbon Tetrachloride	2025/11/17	79	60 - 140	93	60 - 130	<0.040	ug/g	NC	50		
A055738	Chlorobenzene	2025/11/17	77	60 - 140	89	60 - 130	<0.040	ug/g	NC	50		
A055738	Chloroform	2025/11/17	82	60 - 140	92	60 - 130	<0.040	ug/g	NC	50		
A055738	cis-1,2-Dichloroethylene	2025/11/17	84	60 - 140	95	60 - 130	<0.040	ug/g	NC	50		
A055738	cis-1,3-Dichloropropene	2025/11/17	69	60 - 140	88	60 - 130	<0.030	ug/g	NC	50		
A055738	Dibromochloromethane	2025/11/17	82	60 - 140	89	60 - 130	<0.040	ug/g	NC	50		
A055738	Dichlorodifluoromethane (FREON 12)	2025/11/17	94	60 - 140	115	60 - 140	<0.040	ug/g	NC	50		
A055738	Ethylbenzene	2025/11/17	80	60 - 140	95	60 - 130	<0.010	ug/g	NC	50		
A055738	Ethylene Dibromide	2025/11/17	84	60 - 140	90	60 - 130	<0.040	ug/g	NC	50		
A055738	F1 (C6-C10) - BTEX	2025/11/17					<10	ug/g	NC	30		
A055738	F1 (C6-C10)	2025/11/17	76	60 - 140	94	80 - 120	<10	ug/g	NC	30		
A055738	Hexane	2025/11/17	100	60 - 140	122	60 - 130	<0.040	ug/g	NC	50		
A055738	Methyl Ethyl Ketone (2-Butanone)	2025/11/17	88	60 - 140	89	60 - 140	<0.40	ug/g	NC	50		
A055738	Methyl Isobutyl Ketone	2025/11/17	90	60 - 140	91	60 - 130	<0.40	ug/g	NC	50		
A055738	Methyl t-butyl ether (MTBE)	2025/11/17	81	60 - 140	89	60 - 130	<0.040	ug/g	NC	50		
A055738	Methylene Chloride(Dichloromethane)	2025/11/17	84	60 - 140	94	60 - 130	<0.049	ug/g	NC	50		
A055738	o-Xylene	2025/11/17	85	60 - 140	99	60 - 130	<0.020	ug/g	NC	50		
A055738	p+m-Xylene	2025/11/17	80	60 - 140	94	60 - 130	<0.020	ug/g	NC	50		
A055738	Styrene	2025/11/17	77	60 - 140	88	60 - 130	<0.040	ug/g	NC	50		
A055738	Tetrachloroethylene	2025/11/17	77	60 - 140	91	60 - 130	<0.040	ug/g	NC	50		
A055738	Toluene	2025/11/17	86	60 - 140	99	60 - 130	<0.020	ug/g	NC	50		

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Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A055738	Total Xylenes	2025/11/17					<0.020	ug/g	NC	50		
A055738	trans-1,2-Dichloroethylene	2025/11/17	87	60 - 140	102	60 - 130	<0.040	ug/g	NC	50		
A055738	trans-1,3-Dichloropropene	2025/11/17	74	60 - 140	100	60 - 130	<0.040	ug/g	NC	50		
A055738	Trichloroethylene	2025/11/17	74	60 - 140	86	60 - 130	<0.010	ug/g	NC	50		
A055738	Trichlorofluoromethane (FREON 11)	2025/11/17	75	60 - 140	90	60 - 130	<0.040	ug/g	NC	50		
A055738	Vinyl Chloride	2025/11/17	94	60 - 140	113	60 - 130	<0.019	ug/g	NC	50		
A055740	Acid Extractable Antimony (Sb)	2025/11/18	101	75 - 125	104	80 - 120	<0.20	ug/g	NC	30		
A055740	Acid Extractable Arsenic (As)	2025/11/18	105	75 - 125	101	80 - 120	<1.0	ug/g	3.0	30		
A055740	Acid Extractable Barium (Ba)	2025/11/18	NC	75 - 125	103	80 - 120	<0.50	ug/g	3.9	30		
A055740	Acid Extractable Beryllium (Be)	2025/11/18	105	75 - 125	100	80 - 120	<0.20	ug/g	2.1	30		
A055740	Acid Extractable Boron (B)	2025/11/18	96	75 - 125	93	80 - 120	<5.0	ug/g	5.4	30		
A055740	Acid Extractable Cadmium (Cd)	2025/11/18	107	75 - 125	101	80 - 120	<0.10	ug/g	NC	30		
A055740	Acid Extractable Chromium (Cr)	2025/11/18	106	75 - 125	99	80 - 120	<1.0	ug/g	3.6	30		
A055740	Acid Extractable Cobalt (Co)	2025/11/18	103	75 - 125	100	80 - 120	<0.10	ug/g	1.1	30		
A055740	Acid Extractable Copper (Cu)	2025/11/18	NC	75 - 125	97	80 - 120	<0.50	ug/g	2.9	30		
A055740	Acid Extractable Lead (Pb)	2025/11/18	102	75 - 125	98	80 - 120	<1.0	ug/g	9.7	30		
A055740	Acid Extractable Molybdenum (Mo)	2025/11/18	106	75 - 125	101	80 - 120	<0.50	ug/g	8.3	30		
A055740	Acid Extractable Nickel (Ni)	2025/11/18	106	75 - 125	101	80 - 120	<0.50	ug/g	4.8	30		
A055740	Acid Extractable Selenium (Se)	2025/11/18	109	75 - 125	106	80 - 120	<0.50	ug/g	NC	30		
A055740	Acid Extractable Silver (Ag)	2025/11/18	108	75 - 125	102	80 - 120	<0.20	ug/g	NC	30		
A055740	Acid Extractable Thallium (Tl)	2025/11/18	101	75 - 125	99	80 - 120	<0.050	ug/g	5.7	30		
A055740	Acid Extractable Uranium (U)	2025/11/18	107	75 - 125	102	80 - 120	<0.050	ug/g	1.2	30		
A055740	Acid Extractable Vanadium (V)	2025/11/18	NC	75 - 125	97	80 - 120	<5.0	ug/g	4.6	30		
A055740	Acid Extractable Zinc (Zn)	2025/11/18	NC	75 - 125	106	80 - 120	<5.0	ug/g	0.60	30		
A055922	F2 (C10-C16 Hydrocarbons)	2025/11/17	95	60 - 140	89	80 - 120	<7.0	ug/g	NC	30		
A055922	F3 (C16-C34 Hydrocarbons)	2025/11/17	101	60 - 140	94	80 - 120	<50	ug/g	NC	30		
A055922	F4 (C34-C50 Hydrocarbons)	2025/11/17	97	60 - 140	89	80 - 120	<50	ug/g	NC	30		
A056147	1-Methylnaphthalene	2025/11/18	89	50 - 130	92	50 - 130	<0.0050	ug/g	NC	40		
A056147	2-Methylnaphthalene	2025/11/18	92	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40		
A056147	Acenaphthene	2025/11/18	89	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40		
A056147	Acenaphthylene	2025/11/18	91	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40		
A056147	Anthracene	2025/11/18	114	50 - 130	118	50 - 130	<0.0050	ug/g	NC	40		



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QUALITY ASSURANCE REPORT(CONT'D)

Englobe Corp

Client Project #: 02509562

Site Location: WYOMING ON

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A056147	Benzo(a)anthracene	2025/11/18	97	50 - 130	98	50 - 130	<0.0050	ug/g	9.1	40		
A056147	Benzo(a)pyrene	2025/11/18	107	50 - 130	107	50 - 130	<0.0050	ug/g	4.7	40		
A056147	Benzo(b,j)fluoranthene	2025/11/18	98	50 - 130	109	50 - 130	<0.0050	ug/g	20	40		
A056147	Benzo(g,h,i)perylene	2025/11/18	105	50 - 130	100	50 - 130	<0.0050	ug/g	15	40		
A056147	Benzo(k)fluoranthene	2025/11/18	101	50 - 130	109	50 - 130	<0.0050	ug/g	12	40		
A056147	Biphenyl	2025/11/18	90	50 - 130	92	50 - 130	<0.0050	ug/g				
A056147	Chrysene	2025/11/18	92	50 - 130	92	50 - 130	<0.0050	ug/g	4.8	40		
A056147	Dibenzo(a,h)anthracene	2025/11/18	109	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40		
A056147	Fluoranthene	2025/11/18	112	50 - 130	114	50 - 130	<0.0050	ug/g	7.7	40		
A056147	Fluorene	2025/11/18	96	50 - 130	98	50 - 130	<0.0050	ug/g	NC	40		
A056147	Indeno(1,2,3-cd)pyrene	2025/11/18	119	50 - 130	105	50 - 130	<0.0050	ug/g	23	40		
A056147	Naphthalene	2025/11/18	83	50 - 130	88	50 - 130	<0.0050	ug/g	NC	40		
A056147	Phenanthrene	2025/11/18	101	50 - 130	106	50 - 130	<0.0050	ug/g	11	40		
A056147	Pyrene	2025/11/18	101	50 - 130	103	50 - 130	<0.0050	ug/g	6.9	40		
A056274	Conductivity	2025/11/18			101	90 - 110	<0.002	mS/cm	9.8	10		
A056544	Conductivity	2025/11/18			103	90 - 110	<0.002	mS/cm	2.9	10		
A056634	Available (CaCl ₂) pH	2025/11/18			100	97 - 103			1.7	N/A		
A057054	a-Chlordane	2025/11/19	82	50 - 130	73	50 - 130	<0.0020	ug/g	NC	40		
A057054	Aldrin	2025/11/19	82	50 - 130	75	50 - 130	<0.0020	ug/g	NC	40		
A057054	Aroclor 1242	2025/11/19					<0.015	ug/g	NC	40		
A057054	Aroclor 1248	2025/11/19					<0.015	ug/g	NC	40		
A057054	Aroclor 1254	2025/11/19					<0.015	ug/g	NC	40		
A057054	Aroclor 1260	2025/11/19					<0.015	ug/g	NC	40		
A057054	Dieldrin	2025/11/19	89	50 - 130	76	50 - 130	<0.0020	ug/g	NC	40		
A057054	Endosulfan I (alpha)	2025/11/19	98	50 - 130	94	50 - 130	<0.0020	ug/g	NC	40		
A057054	Endosulfan II (beta)	2025/11/19	85	50 - 130	74	50 - 130	<0.0020	ug/g	NC	40		
A057054	Endosulfan sulfate	2025/11/19	90	30 - 130	80	30 - 130	<0.0020	ug/g	NC	50		
A057054	Endrin	2025/11/19	92	50 - 130	79	50 - 130	<0.0020	ug/g	NC	40		
A057054	g-Chlordane	2025/11/19	100	50 - 130	85	50 - 130	<0.0020	ug/g	NC	40		
A057054	Heptachlor epoxide	2025/11/19	81	50 - 130	70	50 - 130	<0.0020	ug/g	NC	40		
A057054	Heptachlor	2025/11/19	74	50 - 130	77	50 - 130	<0.0020	ug/g	NC	40		
A057054	Hexachlorobenzene	2025/11/19	88	50 - 130	75	50 - 130	<0.0020	ug/g	NC	40		



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Site Location: WYOMING ON

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A057054	Hexachlorobutadiene	2025/11/19	71	50 - 130	85	50 - 130	<0.0020	ug/g	NC	40		
A057054	Hexachloroethane	2025/11/19	51	50 - 130	74	50 - 130	<0.0020	ug/g	NC	40		
A057054	Lindane	2025/11/19	91	50 - 130	84	50 - 130	<0.0020	ug/g	NC	40		
A057054	Methoxychlor	2025/11/19	92	50 - 130	83	50 - 130	<0.0050	ug/g	NC	40		
A057054	o,p-DDD	2025/11/19	93	50 - 130	77	50 - 130	<0.0020	ug/g	NC	40		
A057054	o,p-DDE	2025/11/19	100	50 - 130	88	50 - 130	<0.0020	ug/g	NC	40		
A057054	o,p-DDT	2025/11/19	105	50 - 130	92	50 - 130	<0.0020	ug/g	NC	40		
A057054	p,p-DDD	2025/11/19	100	50 - 130	81	50 - 130	<0.0020	ug/g	NC	40		
A057054	p,p-DDE	2025/11/19	111	50 - 130	106	50 - 130	<0.0020	ug/g	NC	40		
A057054	p,p-DDT	2025/11/19	104	50 - 130	89	50 - 130	<0.0020	ug/g	NC	40		
A057064	F4G-sg (Grav. Heavy Hydrocarbons)	2025/11/19	89	65 - 135	102	65 - 135	<100	ug/g	6.5	50		
A057131	Conductivity	2025/11/19			104	90 - 110	<0.002	mS/cm	4.1	10		
A063005	Leachable (SPLP) Antimony (Sb)	2025/11/27	111 (1)	80 - 120	108	80 - 120	<0.5	ug/L	22	35	<0.5	ug/L
A063005	Leachable (SPLP) Molybdenum (Mo)	2025/11/27	104	80 - 120	102	80 - 120	<1	ug/L	6.6	35	<1	ug/L
A063005	Leachable (SPLP) Silver (Ag)	2025/11/27	102	80 - 120	101	80 - 120	<0.1	ug/L	NC	35	<0.1	ug/L
A063005	Leachable (SPLP) Thallium (Tl)	2025/11/27	104	80 - 120	102	80 - 120	<0.05	ug/L	NC	35	<0.05	ug/L
A063044	Leachable (SPLP) Antimony (Sb)	2025/11/27	109	80 - 120	107	80 - 120	<0.5	ug/L	3.7	35	<0.5	ug/L
A063044	Leachable (SPLP) Molybdenum (Mo)	2025/11/27	102	80 - 120	101	80 - 120	<1	ug/L	0.59	35	<1	ug/L
A063044	Leachable (SPLP) Silver (Ag)	2025/11/27	100	80 - 120	99	80 - 120	<0.1	ug/L	NC	35	<0.1	ug/L
A063044	Leachable (SPLP) Thallium (Tl)	2025/11/27	101	80 - 120	102	80 - 120	<0.05	ug/L	NC	35	<0.05	ug/L
A067428	Leachable (SPLP) Antimony (Sb)	2025/12/04	110	80 - 120	108	80 - 120	<0.5	ug/L	NC	35	<0.5	ug/L
A067428	Leachable (SPLP) Molybdenum (Mo)	2025/12/04	102	80 - 120	102	80 - 120	<1	ug/L	NC	35	<1	ug/L
A067428	Leachable (SPLP) Silver (Ag)	2025/12/04	99	80 - 120	96	80 - 120	<0.1	ug/L	NC	35	<0.1	ug/L



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QUALITY ASSURANCE REPORT(CONT'D)

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Site Location: WYOMING ON

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A067428	Leachable (SPLP) Thallium (Tl)	2025/12/04	101	80 - 120	99	80 - 120	<0.05	ug/L	NC	35	<0.05	ug/L

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

(1) Matrix Spike exceeds acceptance limits, probable matrix interference



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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

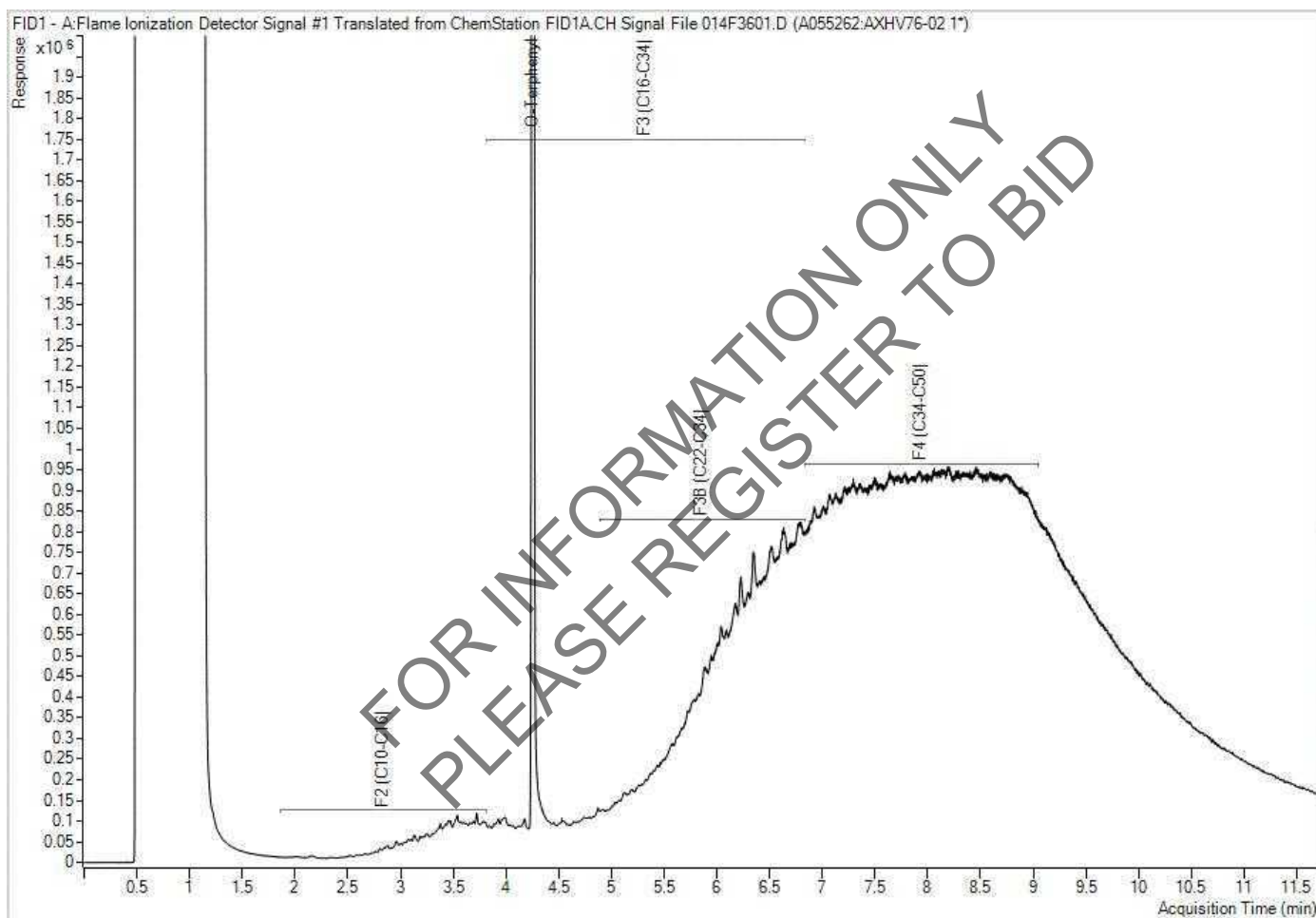
Cristina Carriere, Senior Scientific Specialist

Louise Harding, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

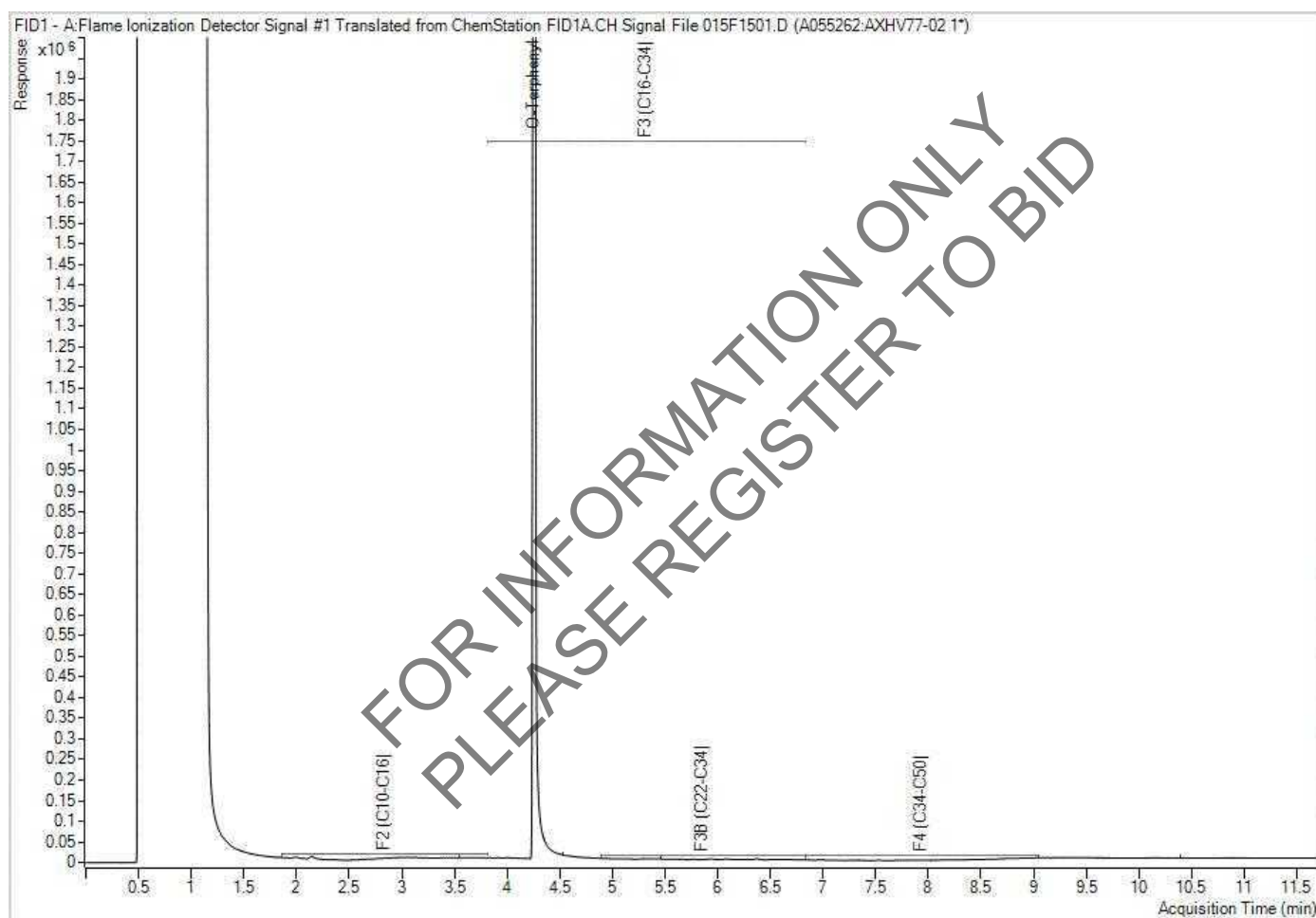
FOR INFORMATION ONLY
PLEASE REGISTER TO BID

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



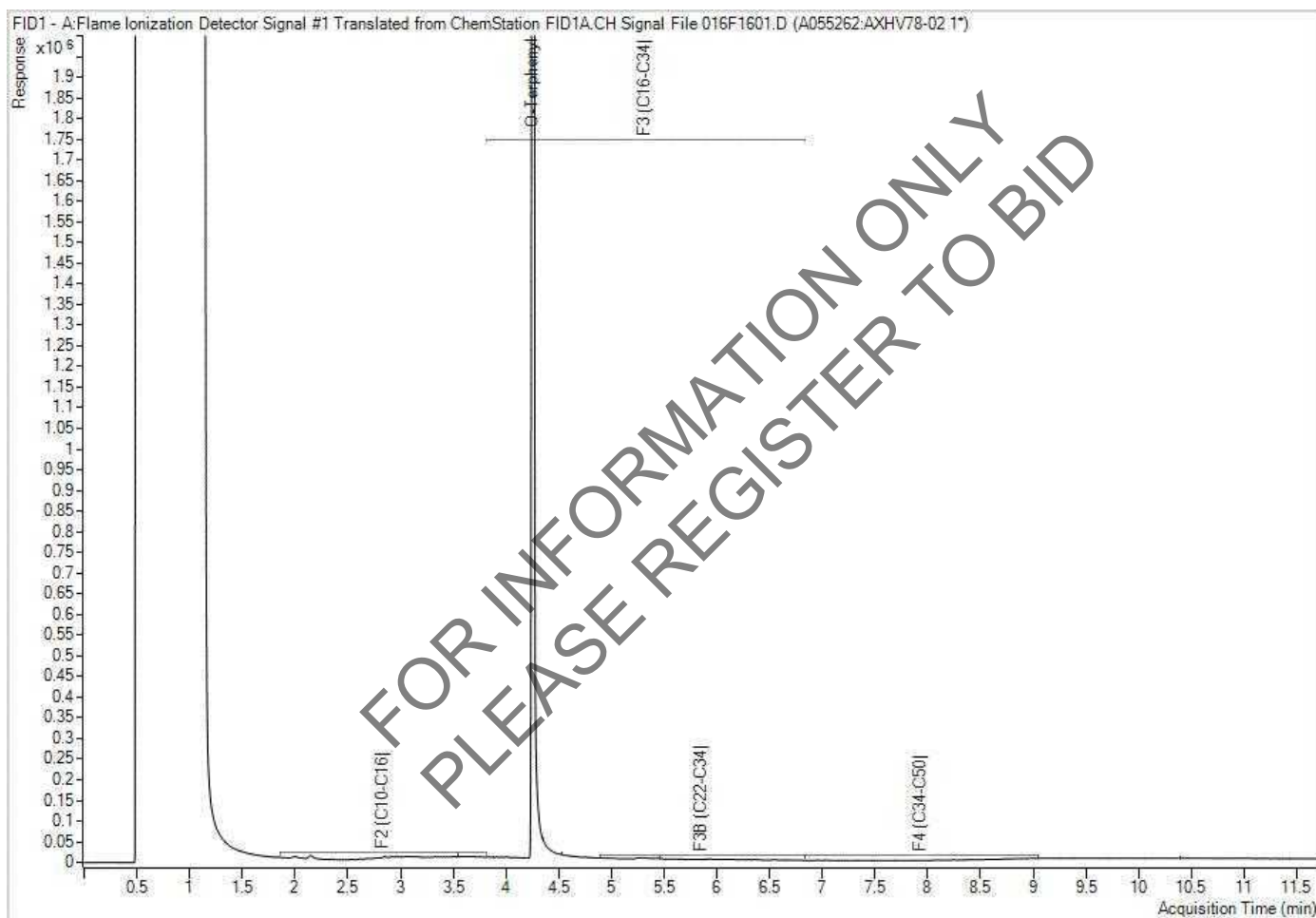
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



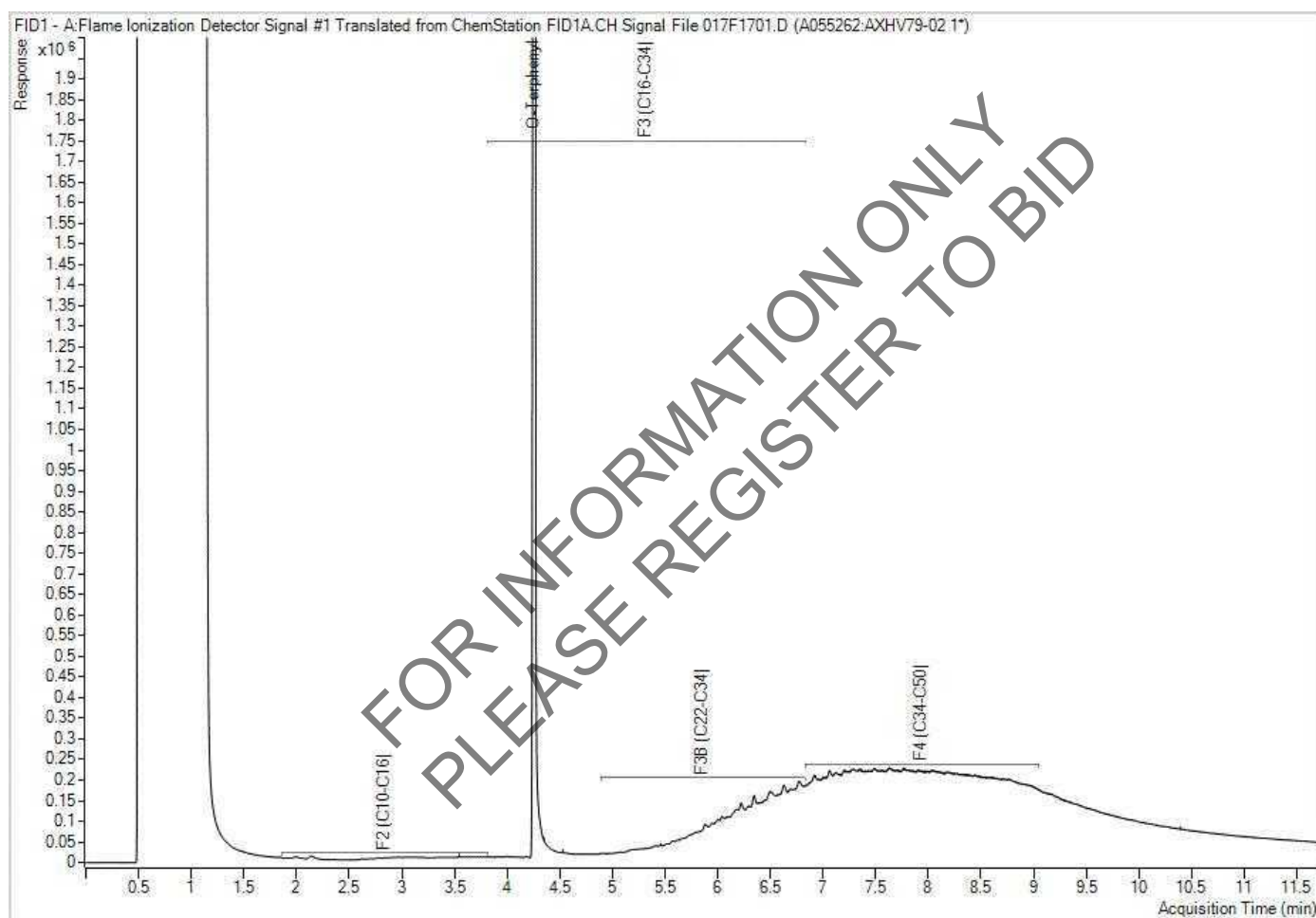
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



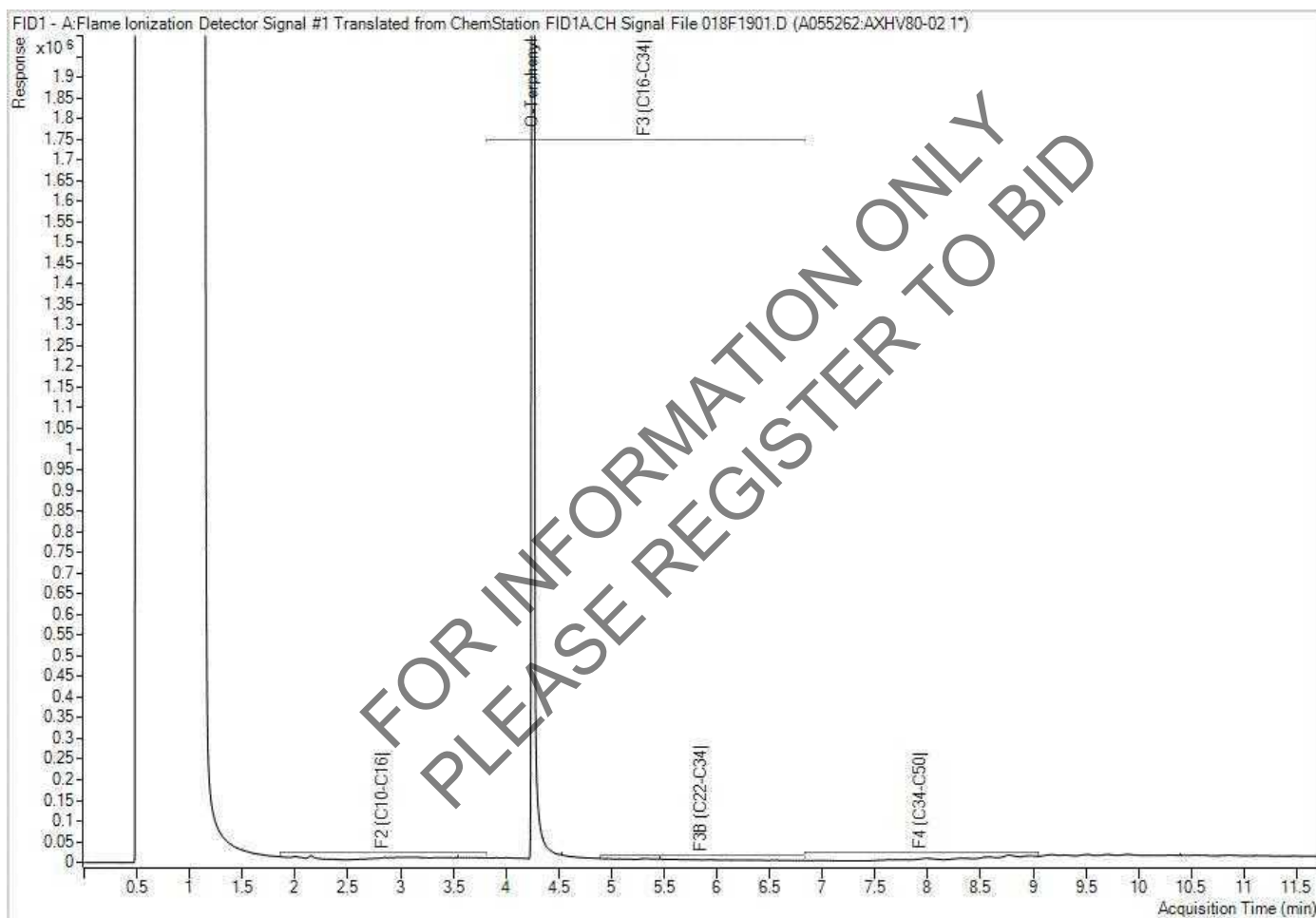
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



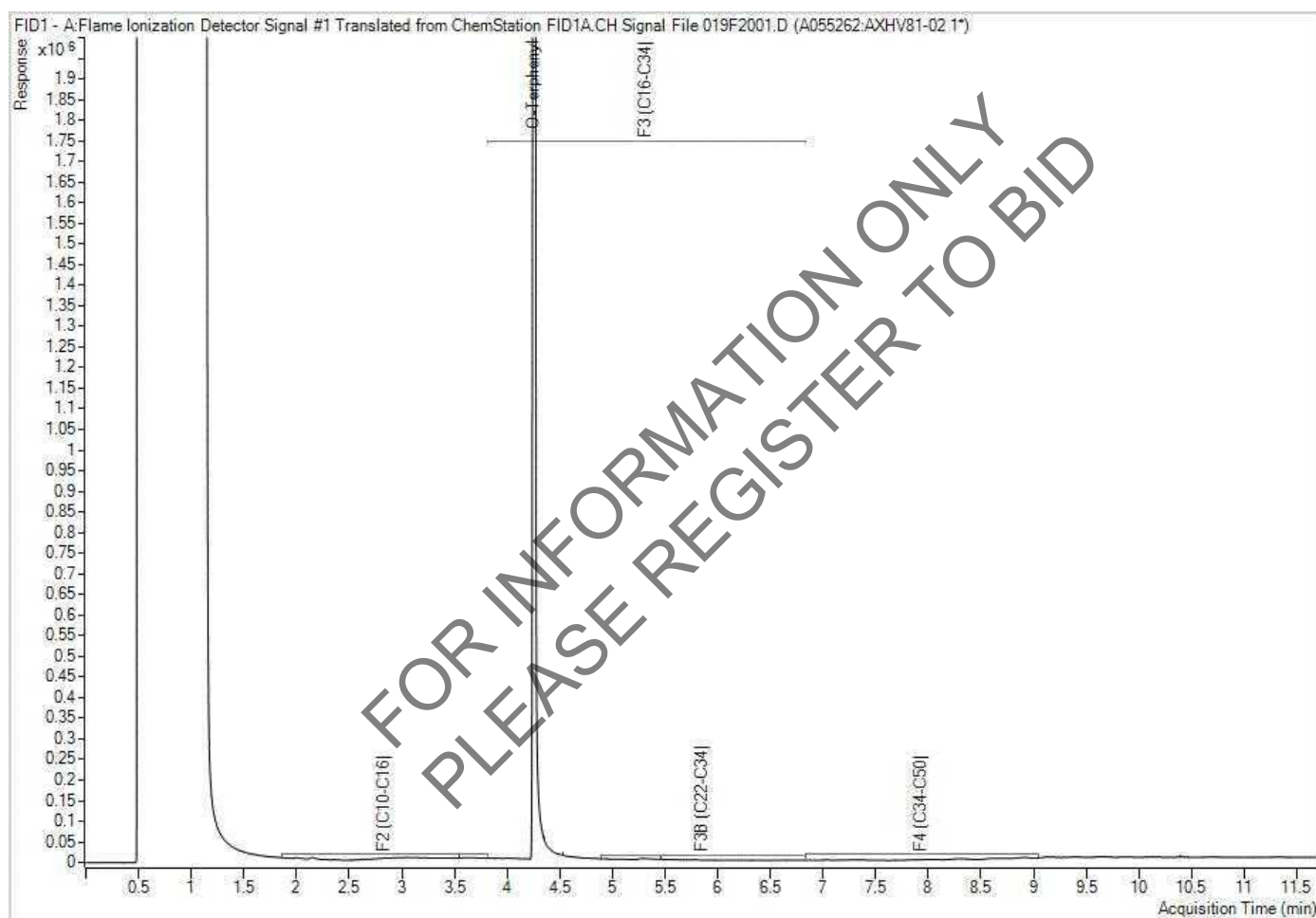
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



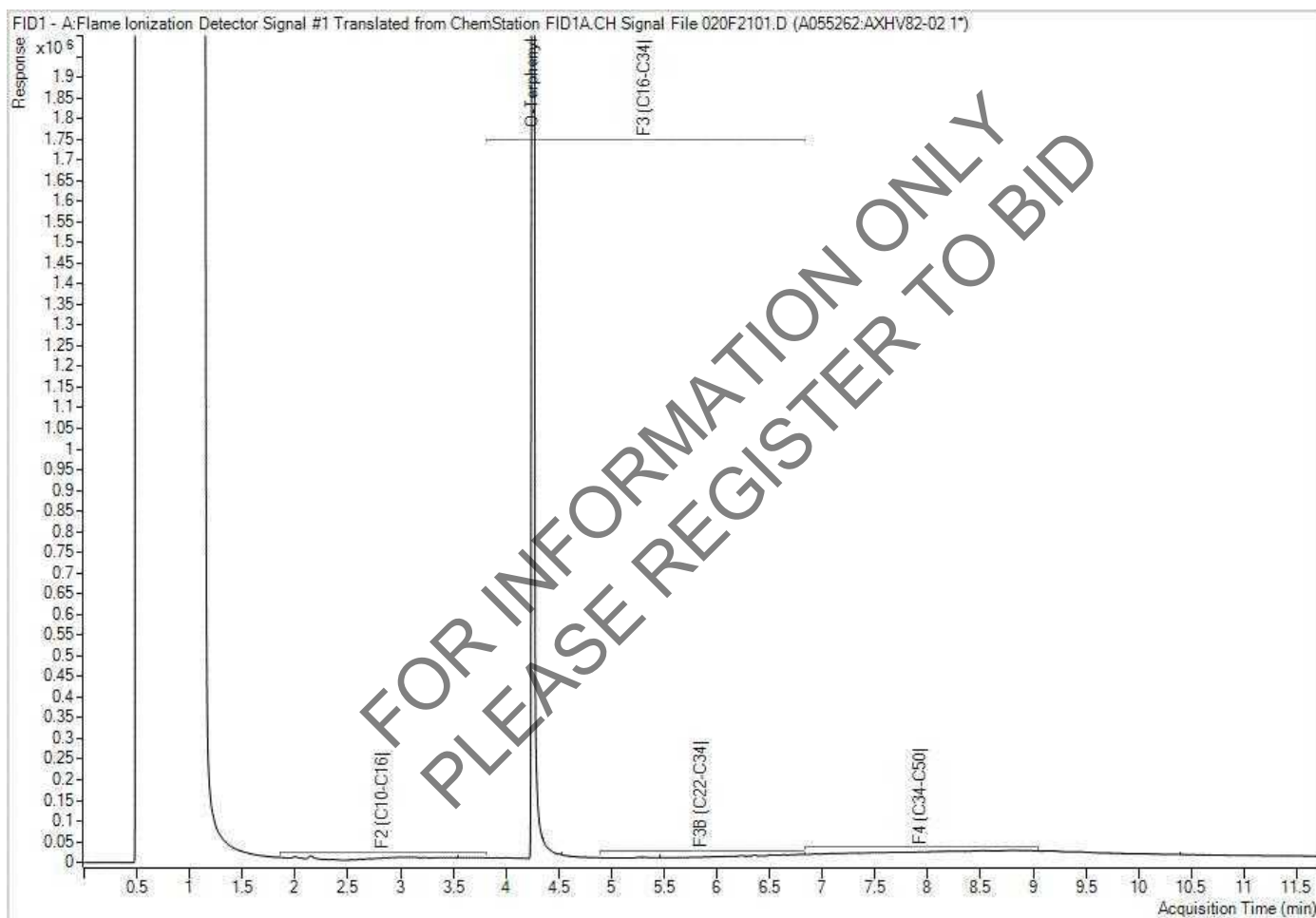
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



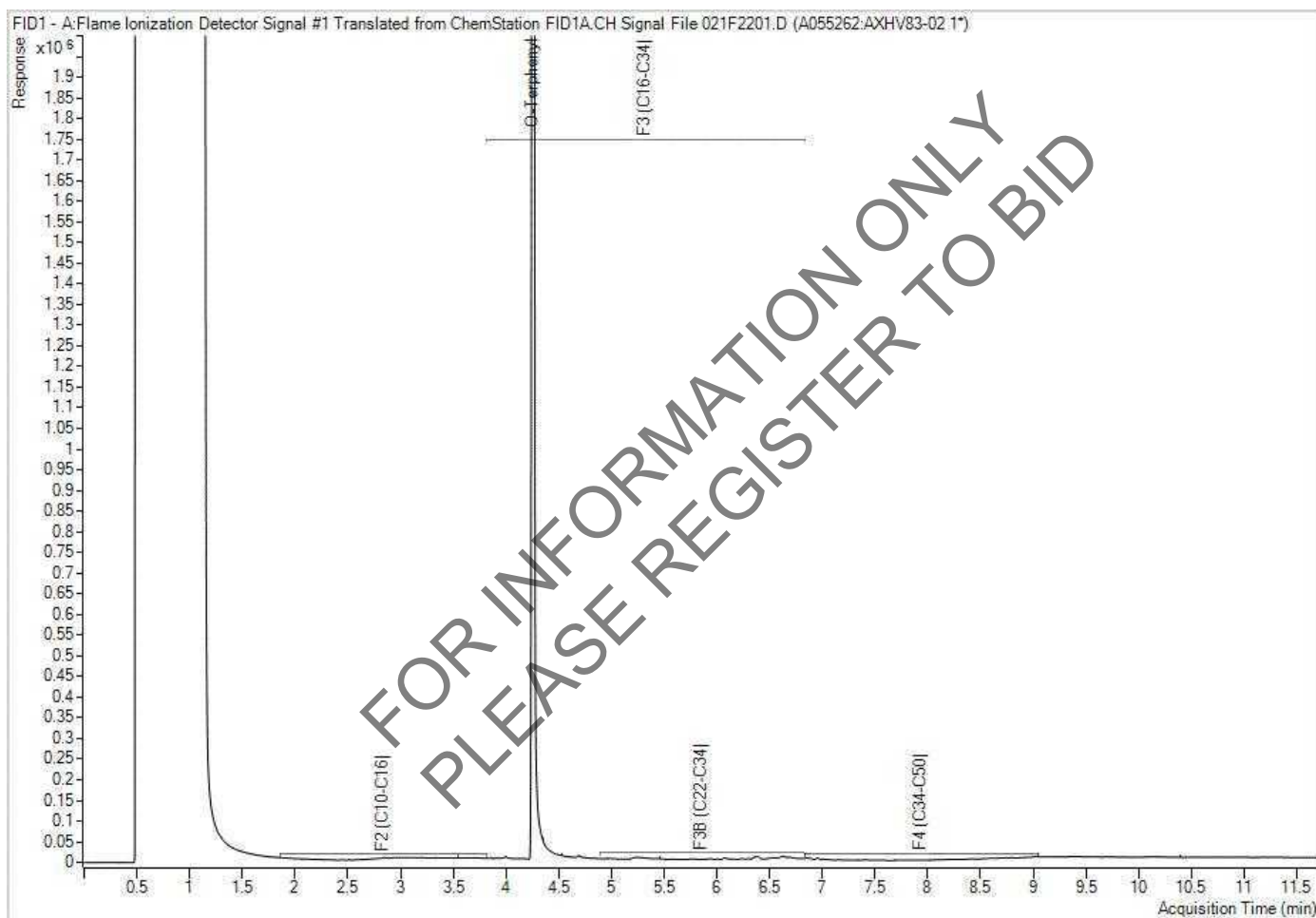
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



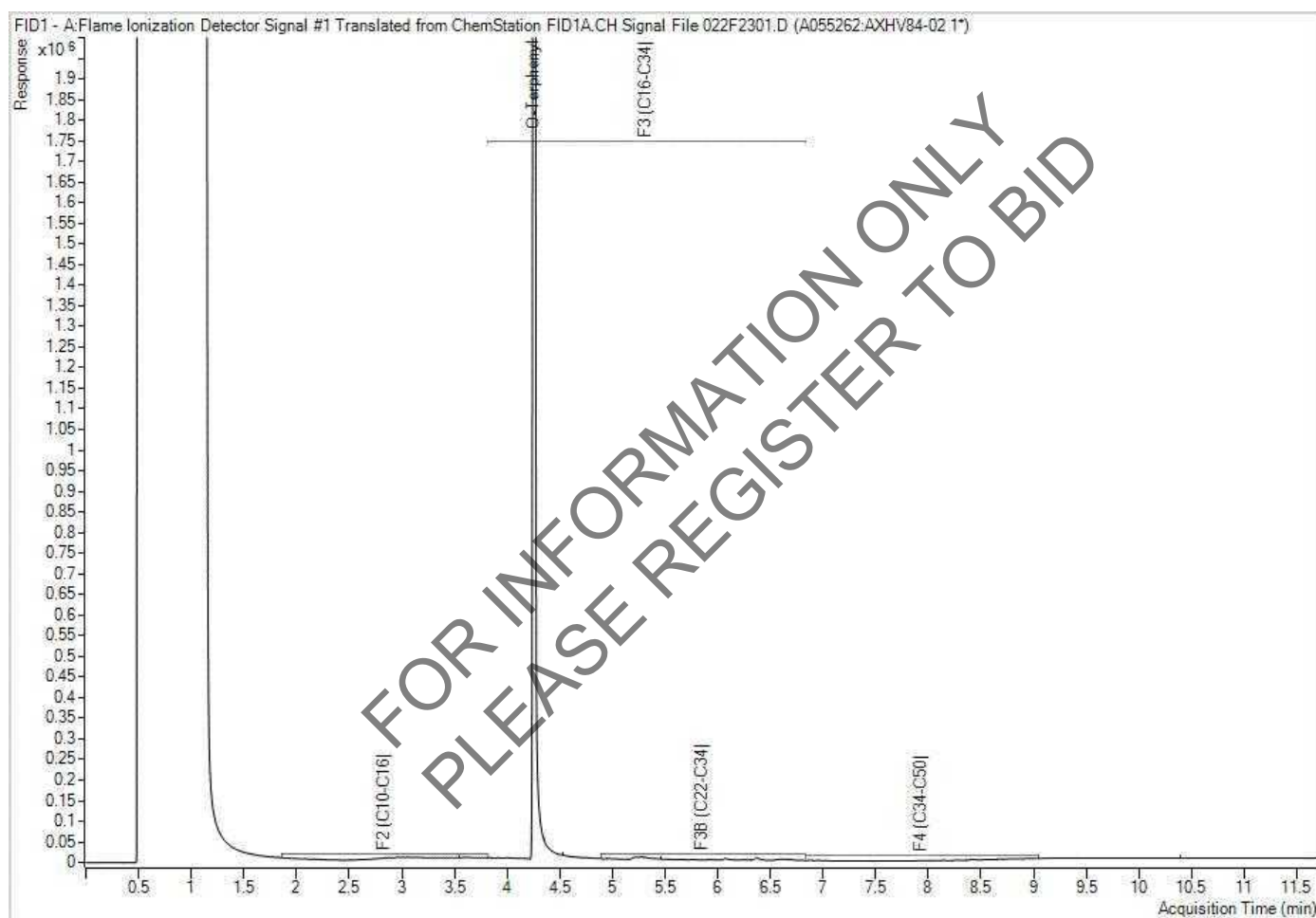
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



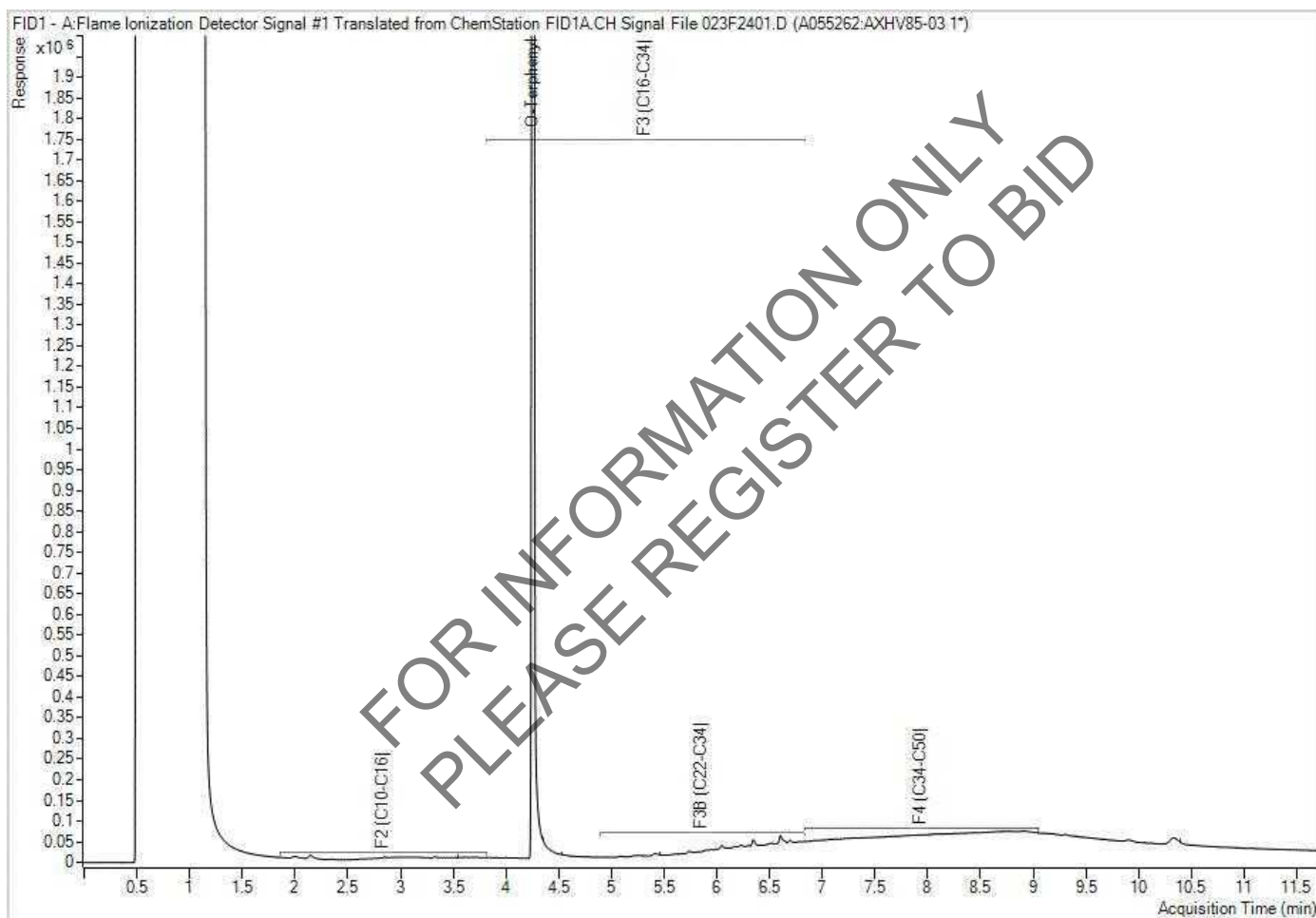
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



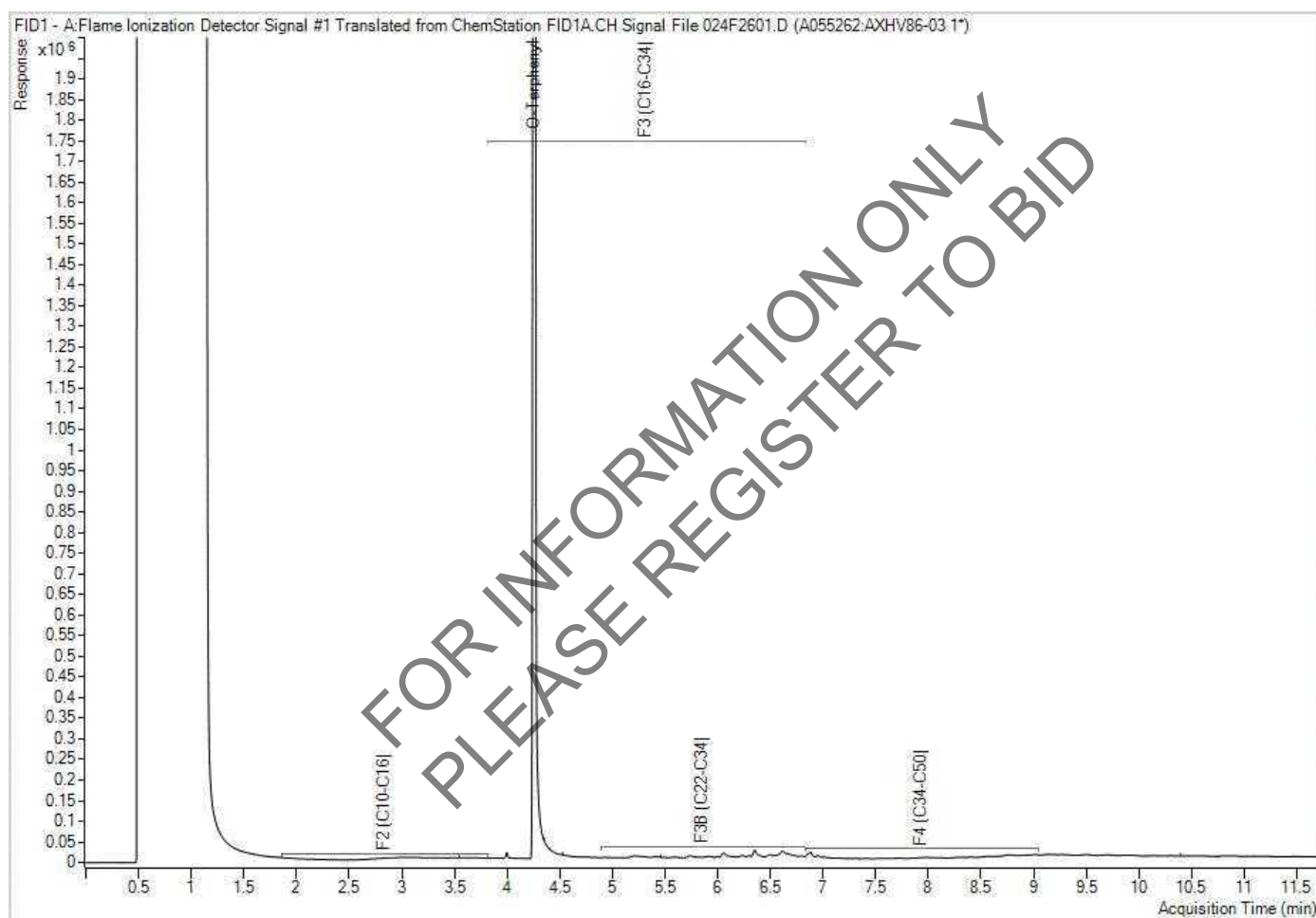
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



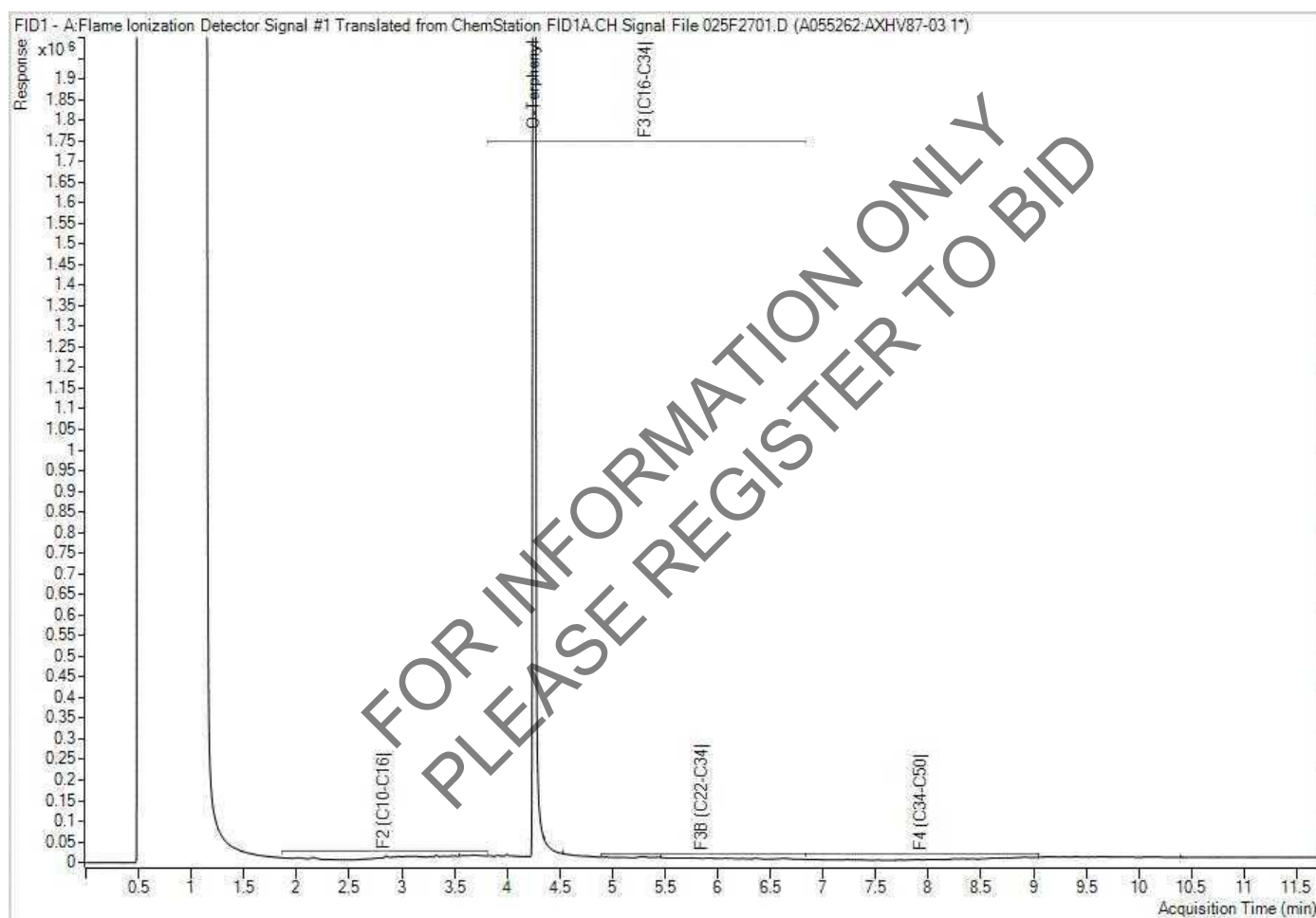
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



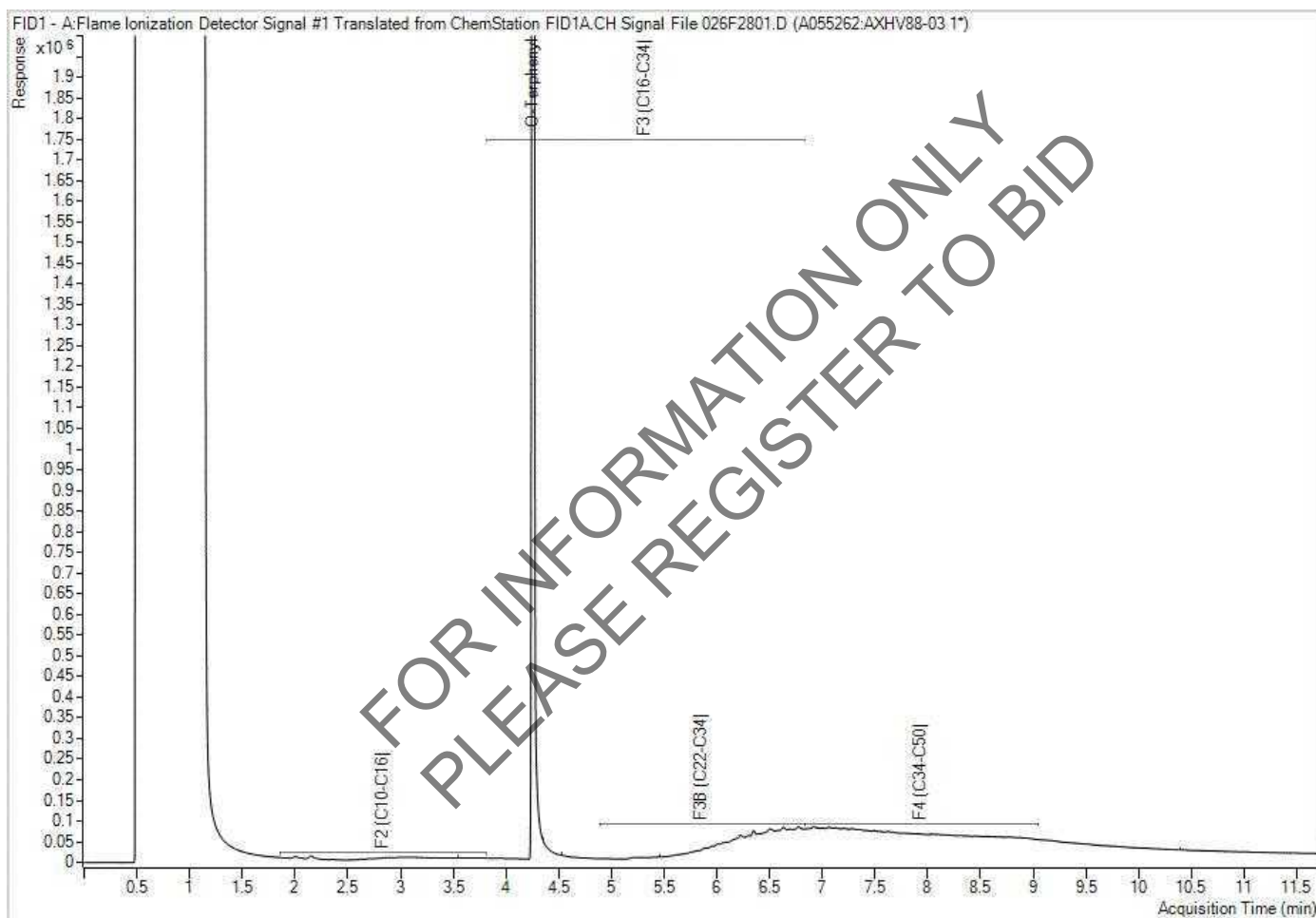
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



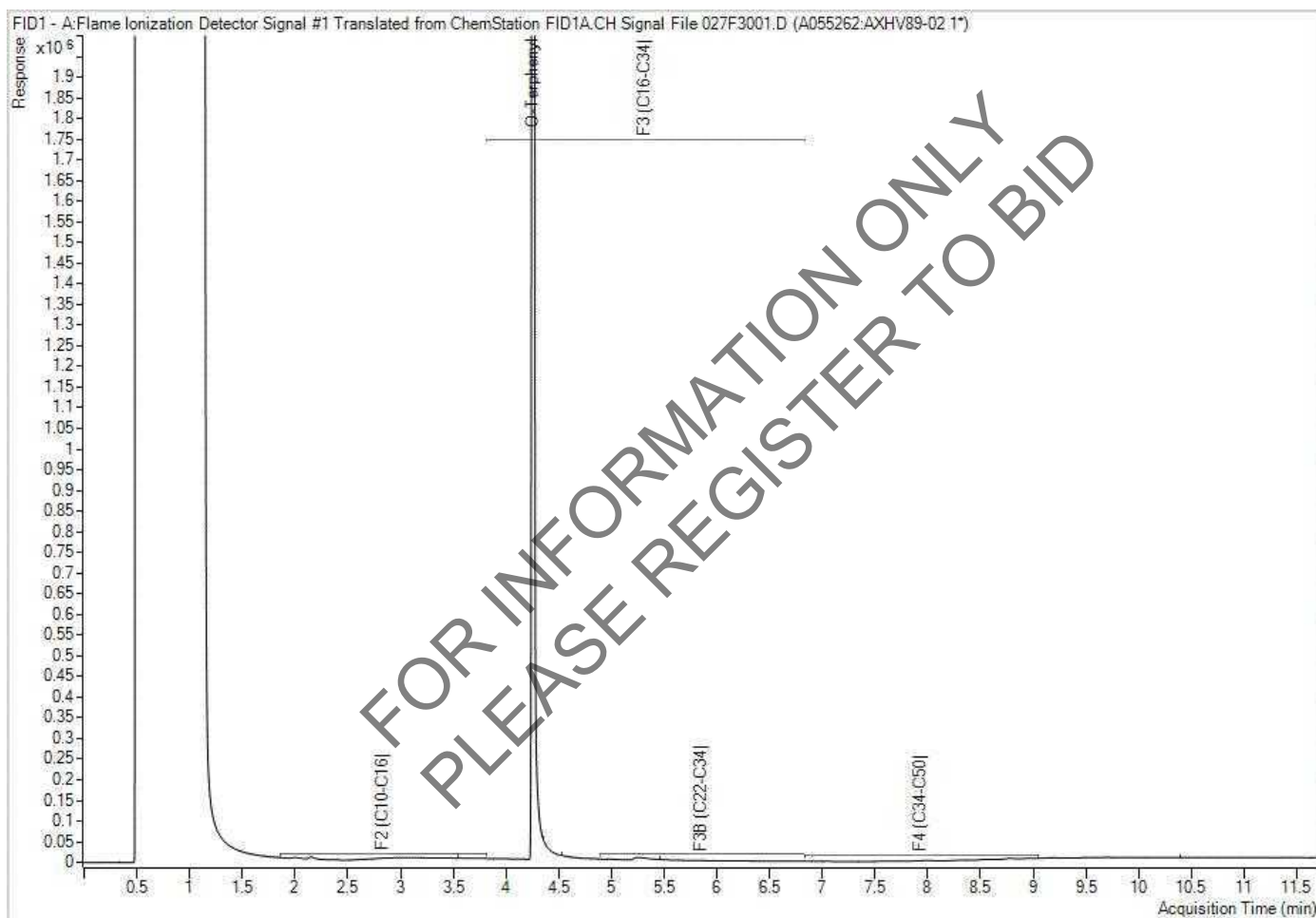
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



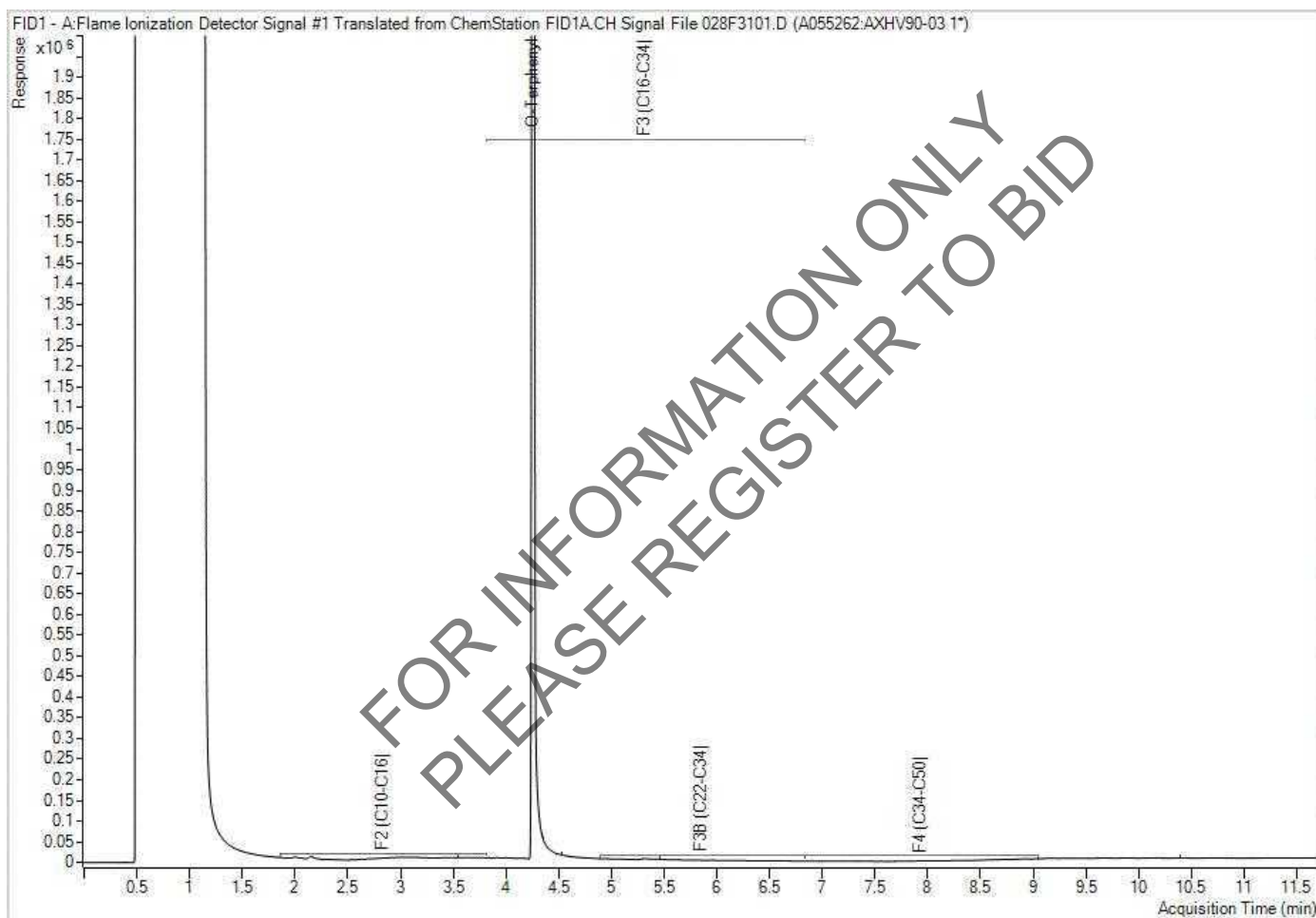
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



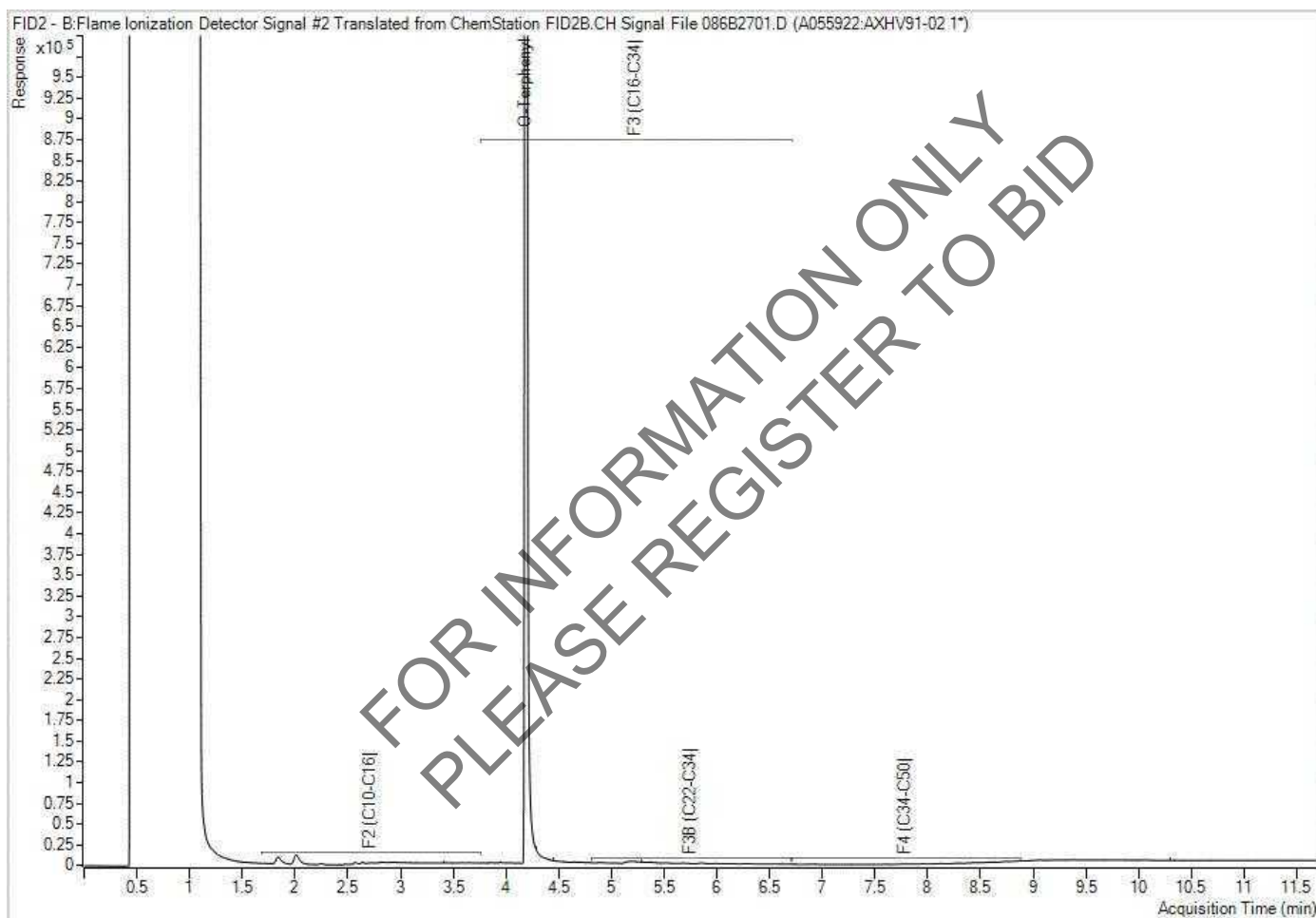
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



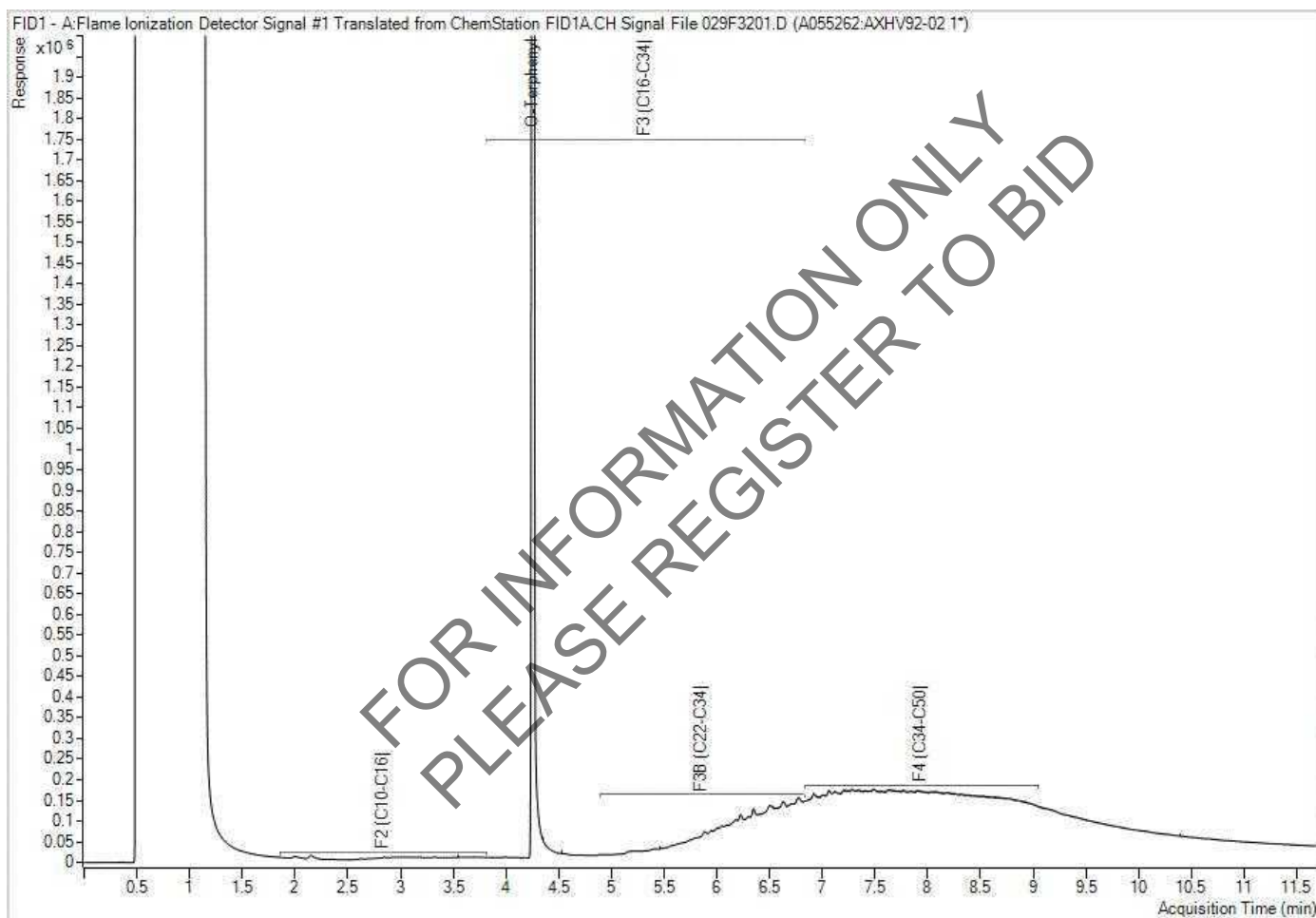
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.



Your Project #: 02509562
Your C.O.C. #: C#1068854-01-01

Attention: Emily Brook

Englobe Corp
London- Standing Offer
417 Exeter Rd
London, ON
CANADA N6E 2Z3

Report Date: 2025/11/28
Report #: R8659549
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C5E4917

Received: 2025/11/14, 12:26

Sample Matrix: Soil
Samples Received: 5

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Methylnaphthalene Sum	3	N/A	2025/11/19	CAM SOP-00301	EPA 8270D m
Hot Water Extractable Boron	5	2025/11/20	2025/11/20	CAM SOP-00408	R153 Ana. Prot. 2011
Free (WAD) Cyanide	5	2025/11/20	2025/11/20	CAM SOP-00457	OMOE E3015 m
Conductivity	5	2025/11/20	2025/11/20	CAM SOP-00414	OMOE E3530 v1 m
Hexavalent Chromium in Soil by IC (1)	5	2025/11/19	2025/11/19	CAM SOP-00436	EPA 3060A/7199 m
Petroleum Hydro. CCME F1 & BTEX in Soil (2)	5	N/A	2025/11/17	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Soil (3)	5	2025/11/17	2025/11/18	CAM SOP-00316	CCME CWS m
F4G (CCME Hydrocarbons Gravimetric)	1	2025/11/20	2025/11/20	CAM SOP-00316	CCME PHC-CWS m
Acid Extractable Metals by ICPMS	5	2025/11/20	2025/11/20	CAM SOP-00447	EPA 6020B m
Total Metals in SPLP Leachate by ICPMS	1	2025/11/27	2025/11/27	CAM SOP-00447	EPA 6020B m
Moisture	5	N/A	2025/11/18	CAM SOP-00445	Carter 2nd ed 70.2 m
Modified SPLP extraction - Weight	1	N/A	2025/11/27	CAM SOP-00941	OMOECP LaSB E9003 R3
PAH Compounds in Soil by GC/MS (SIM)	3	2025/11/17	2025/11/18	CAM SOP-00318	EPA 8270E
pH CaCl2 EXTRACT	5	2025/11/20	2025/11/20	CAM SOP-00413	EPA 9045 D m
Sodium Adsorption Ratio (SAR)	5	N/A	2025/11/21	CAM SOP-00102	EPA 6010C

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, EPA, APHA or the Quebec Ministry of Environment.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope



Your Project #: 02509562
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Report Date: 2025/11/28
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CERTIFICATE OF ANALYSIS – REVISED REPORT

BUREAU VERITAS JOB #: C5E4917

Received: 2025/11/14, 12:26

dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Soils are reported on a dry weight basis unless otherwise specified.

(2) No lab extraction date is given for F1BTX & VOC samples that are field preserved with methanol. Extraction date is the date sampled unless otherwise stated.

(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to:

Kudrat Bajwa, B.Sc., Project Manager

Email: Kudrat.Bajwa@bureauveritas.com

Phone# (905)817-5755

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Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK INORGANICS (SOIL)

Bureau Veritas ID		AXJE28	AXJE29	AXJE30	AXJE31		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		C#1068854-01-01	C#1068854-01-01	C#1068854-01-01	C#1068854-01-01		
	UNITS	BH01-25 SA2	BH01-25 SA3	BH02-25 SA1	BH02-25 SA2	RDL	QC Batch
Calculated Parameters							
Sodium Adsorption Ratio	N/A	1.8	1.3	10	4.6		A055493
Inorganics							
Conductivity	mS/cm	0.23	0.20	0.44	0.94	0.002	A057956
Available (CaCl ₂) pH	pH	7.63	7.66	7.81	7.77		A058224
WAD Cyanide (Free)	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	A057924
Chromium (VI)	ug/g	<0.18	<0.18	<0.18	<0.18	0.18	A057083
Metals							
Hot Water Ext. Boron (B)	ug/g	0.095	0.084	0.096	0.15	0.050	A058195
Acid Extractable Antimony (Sb)	ug/g	0.33	0.26	<0.20	0.29	0.20	A058102
Acid Extractable Arsenic (As)	ug/g	5.4	4.0	2.0	5.5	1.0	A058102
Acid Extractable Barium (Ba)	ug/g	59	71	15	69	0.50	A058102
Acid Extractable Beryllium (Be)	ug/g	0.64	0.59	<0.20	0.62	0.20	A058102
Acid Extractable Boron (B)	ug/g	11	12	<5.0	10	5.0	A058102
Acid Extractable Cadmium (Cd)	ug/g	0.18	0.20	<0.10	0.13	0.10	A058102
Acid Extractable Chromium (Cr)	ug/g	25	23	6.2	23	1.0	A058102
Acid Extractable Cobalt (Co)	ug/g	9.3	11	2.5	9.1	0.10	A058102
Acid Extractable Copper (Cu)	ug/g	20	20	7.7	18	0.50	A058102
Acid Extractable Lead (Pb)	ug/g	9.2	8.6	7.0	13	1.0	A058102
Acid Extractable Molybdenum (Mo)	ug/g	2.2	3.6	0.58	3.2	0.50	A058102
Acid Extractable Nickel (Ni)	ug/g	29	30	6.5	27	0.50	A058102
Acid Extractable Selenium (Se)	ug/g	<0.50	<0.50	<0.50	<0.50	0.50	A058102
Acid Extractable Silver (Ag)	ug/g	<0.20	<0.20	<0.20	<0.20	0.20	A058102
Acid Extractable Thallium (Tl)	ug/g	0.24	0.23	0.082	0.21	0.050	A058102
Acid Extractable Uranium (U)	ug/g	1.0	1.0	0.52	0.99	0.050	A058102
Acid Extractable Vanadium (V)	ug/g	31	26	12	28	5.0	A058102
Acid Extractable Zinc (Zn)	ug/g	51	54	19	42	5.0	A058102
Acid Extractable Mercury (Hg)	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	A058102
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							



BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK INORGANICS (SOIL)

Bureau Veritas ID		AXJE32		
Sampling Date		2025/11/03		
COC Number		C#1068854-01-01		
	UNITS	BH02-25 SA3	RDL	QC Batch
Calculated Parameters				
Sodium Adsorption Ratio	N/A	7.0		A055493
Inorganics				
Conductivity	mS/cm	1.0	0.002	A057956
Available (CaCl ₂) pH	pH	7.75		A058224
WAD Cyanide (Free)	ug/g	<0.01	0.01	A057924
Chromium (VI)	ug/g	<0.18	0.18	A057083
Metals				
Hot Water Ext. Boron (B)	ug/g	0.11	0.050	A058195
Acid Extractable Antimony (Sb)	ug/g	0.36	0.20	A058102
Acid Extractable Arsenic (As)	ug/g	5.5	1.0	A058102
Acid Extractable Barium (Ba)	ug/g	60	0.50	A058102
Acid Extractable Beryllium (Be)	ug/g	0.56	0.20	A058102
Acid Extractable Boron (B)	ug/g	12	5.0	A058102
Acid Extractable Cadmium (Cd)	ug/g	0.14	0.10	A058102
Acid Extractable Chromium (Cr)	ug/g	23	1.0	A058102
Acid Extractable Cobalt (Co)	ug/g	9.3	0.10	A058102
Acid Extractable Copper (Cu)	ug/g	21	0.50	A058102
Acid Extractable Lead (Pb)	ug/g	9.8	1.0	A058102
Acid Extractable Molybdenum (Mo)	ug/g	3.7	0.50	A058102
Acid Extractable Nickel (Ni)	ug/g	28	0.50	A058102
Acid Extractable Selenium (Se)	ug/g	0.59	0.50	A058102
Acid Extractable Silver (Ag)	ug/g	<0.20	0.20	A058102
Acid Extractable Thallium (Tl)	ug/g	0.21	0.050	A058102
Acid Extractable Uranium (U)	ug/g	0.99	0.050	A058102
Acid Extractable Vanadium (V)	ug/g	28	5.0	A058102
Acid Extractable Zinc (Zn)	ug/g	44	5.0	A058102
Acid Extractable Mercury (Hg)	ug/g	<0.050	0.050	A058102
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK PAHS (SOIL)

Bureau Veritas ID		AXJE28		AXJE30		AXJE31		
Sampling Date		2025/11/03		2025/11/03		2025/11/03		
COC Number		C#1068854-01-01		C#1068854-01-01		C#1068854-01-01		
	UNITS	BH01-25 SA2	RDL	BH02-25 SA1	RDL	BH02-25 SA2	RDL	QC Batch
Calculated Parameters								
Methylnaphthalene, 2-(1-)	ug/g	<0.0071	0.0071	0.011	0.011	<0.0071	0.0071	A055494
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	<0.0050	0.0050	0.036	0.0050	<0.0050	0.0050	A055939
Acenaphthylene	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
Anthracene	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
Benzo(a)anthracene	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
Benzo(a)pyrene	ug/g	<0.0050	0.0050	0.0058	0.0050	<0.0050	0.0050	A055939
Benzo(b,j)fluoranthene	ug/g	<0.0050	0.0050	0.0085	0.0050	<0.0050	0.0050	A055939
Benzo(g,h,i)perylene	ug/g	<0.0050	0.0050	0.013	0.0050	<0.0050	0.0050	A055939
Benzo(k)fluoranthene	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
Chrysene	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
Dibenzo(a,h)anthracene	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
Fluoranthene	ug/g	<0.0050	0.0050	0.0085	0.0050	<0.0050	0.0050	A055939
Fluorene	ug/g	<0.0050	0.0050	0.020	0.0050	<0.0050	0.0050	A055939
Indeno(1,2,3-cd)pyrene	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
1-Methylnaphthalene	ug/g	<0.0050	0.0050	0.011	0.0050	<0.0050	0.0050	A055939
2-Methylnaphthalene	ug/g	<0.0050	0.0050	<0.010 (1)	0.010	<0.0050	0.0050	A055939
Naphthalene	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
Phenanthrene	ug/g	<0.0050	0.0050	0.037	0.0050	<0.0050	0.0050	A055939
Pyrene	ug/g	<0.0050	0.0050	0.024	0.0050	0.0092	0.0050	A055939
Biphenyl	ug/g	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	A055939
Surrogate Recovery (%)								
D10-Anthracene	%	106		103		110		A055939
D14-Terphenyl (FS)	%	92		93		95		A055939
D8-Acenaphthylene	%	92		89		94		A055939
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
(1) Detection Limit was raised due to matrix interferences.								



BUREAU
VERITAS

Bureau Veritas Job #: C5E4917
Report Date: 2025/11/28

Englobe Corp
Client Project #: 02509562
Sampler Initials: EB

O.REG 406 EXCESS SOIL BULK BTEX/F1-F4 (SOIL)

Bureau Veritas ID		AXJE28	AXJE29	AXJE30	AXJE31	AXJE32		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		C#1068854-01-01	C#1068854-01-01	C#1068854-01-01	C#1068854-01-01	C#1068854-01-01		
	UNITS	BH01-25 SA2	BH01-25 SA3	BH02-25 SA1	BH02-25 SA2	BH02-25 SA3	RDL	QC Batch
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A056028
Toluene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A056028
Ethylbenzene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A056028
o-Xylene	ug/g	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	A056028
p+m-Xylene	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A056028
Total Xylenes	ug/g	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	A056028
F1 (C6-C10)	ug/g	<10	<10	<10	<10	<10	10	A056028
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	<10	10	A056028
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<7.0	<7.0	33	<7.0	8.5	7.0	A055922
F3 (C16-C34 Hydrocarbons)	ug/g	<50	<50	240	<50	<50	50	A055922
F4 (C34-C50 Hydrocarbons)	ug/g	<50	<50	520	<50	<50	50	A055922
Reached Baseline at C50	ug/g	Yes	Yes	No	Yes	Yes		A055922
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	105	103	105	105	105		A056028
4-Bromofluorobenzene	%	96	97	96	96	96		A056028
D10-o-Xylene	%	103	112	101	107	112		A056028
D4-1,2-Dichloroethane	%	100	100	102	99	99		A056028
o-Terphenyl	%	88	99	102	100	103		A055922
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

O.REG 406 EXCESS SOIL SPLP METALS (SOIL)

Bureau Veritas ID		AXJE32		
Sampling Date		2025/11/03		
COC Number		C#1068854-01-01		
	UNITS	BH02-25 SA3	RDL	QC Batch
Metals				
Leachable (SPLP) Antimony (Sb)	ug/L	<0.5	0.5	A063044
Leachable (SPLP) Molybdenum (Mo)	ug/L	16	1	A063044
Leachable (SPLP) Silver (Ag)	ug/L	<0.1	0.1	A063044
Leachable (SPLP) Thallium (Tl)	ug/L	<0.05	0.05	A063044
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

FOR INFORMATION ONLY
PLEASE REGISTER TO BID



BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

O.REG 406 EXCESS SOIL MSPLP PREP (SOIL)

Bureau Veritas ID		AXJE32	
Sampling Date		2025/11/03	
COC Number		C#1068854-01-01	
	UNITS	BH02-25 SA3	QC Batch
Inorganics			
Dry Weight	g	100	A062061
QC Batch = Quality Control Batch			

FOR INFORMATION ONLY
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BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

RESULTS OF ANALYSES OF SOIL

Bureau Veritas ID		AXJE28	AXJE29	AXJE30	AXJE31	AXJE32		
Sampling Date		2025/11/03	2025/11/03	2025/11/03	2025/11/03	2025/11/03		
COC Number		C#1068854-01-01	C#1068854-01-01	C#1068854-01-01	C#1068854-01-01	C#1068854-01-01		
	UNITS	BH01-25 SA2	BH01-25 SA3	BH02-25 SA1	BH02-25 SA2	BH02-25 SA3	RDL	QC Batch
Inorganics								
Moisture	%	18	15	6.0	14	14	1.0	A056684
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

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BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

PETROLEUM HYDROCARBONS (CCME)

Bureau Veritas ID		AXJE30		
Sampling Date		2025/11/03		
COC Number		C#1068854-01-01		
	UNITS	BH02-25 SA1	RDL	QC Batch
F2-F4 Hydrocarbons				
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g	2400	100	A057907
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

FOR INFORMATION ONLY
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BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

GENERAL COMMENTS

Revised Report [2025/11/28]: Requested additional analysis for splp metals added.

F1/BTEX Analysis: Soil weight exceeds the protocol specification of approximately 5g in the field preserved vial. Additional methanol was added to the vial to ensure extraction efficiency.

Results relate only to the items tested.

FOR INFORMATION ONLY
PLEASE REGISTER TO BID

BUREAU
VERITAS

Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

QUALITY ASSURANCE REPORT

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A055922	o-Terphenyl	2025/11/17	101	60 - 140	95	60 - 140	95	%				
A055939	D10-Anthracene	2025/11/17	109	50 - 130	112	50 - 130	115	%				
A055939	D14-Terphenyl (FS)	2025/11/17	95	50 - 130	97	50 - 130	98	%				
A055939	D8-Acenaphthylene	2025/11/17	91	50 - 130	90	50 - 130	89	%				
A056028	1,4-Difluorobenzene	2025/11/17	100	60 - 140	102	60 - 140	105	%				
A056028	4-Bromofluorobenzene	2025/11/17	97	60 - 140	97	60 - 140	96	%				
A056028	D10-o-Xylene	2025/11/17	100	60 - 140	95	60 - 140	99	%				
A056028	D4-1,2-Dichloroethane	2025/11/17	102	60 - 140	100	60 - 140	97	%				
A055922	F2 (C10-C16 Hydrocarbons)	2025/11/17	95	60 - 140	89	80 - 120	<7.0	ug/g	NC	30		
A055922	F3 (C16-C34 Hydrocarbons)	2025/11/17	101	60 - 140	94	80 - 120	<50	ug/g	NC	30		
A055922	F4 (C34-C50 Hydrocarbons)	2025/11/17	97	60 - 140	89	80 - 120	<50	ug/g	NC	30		
A055939	1-Methylnaphthalene	2025/11/17	81	50 - 130	84	50 - 130	<0.0050	ug/g	NC	40		
A055939	2-Methylnaphthalene	2025/11/17	79	50 - 130	81	50 - 130	<0.0050	ug/g	NC	40		
A055939	Acenaphthene	2025/11/17	88	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40		
A055939	Acenaphthylene	2025/11/17	89	50 - 130	87	50 - 130	<0.0050	ug/g	NC	40		
A055939	Anthracene	2025/11/17	114	50 - 130	117	50 - 130	<0.0050	ug/g	NC	40		
A055939	Benzo(a)anthracene	2025/11/17	87	50 - 130	88	50 - 130	<0.0050	ug/g	NC	40		
A055939	Benzo(a)pyrene	2025/11/17	90	50 - 130	93	50 - 130	<0.0050	ug/g	NC	40		
A055939	Benzo(b,j)fluoranthene	2025/11/17	90	50 - 130	90	50 - 130	<0.0050	ug/g	NC	40		
A055939	Benzo(g,h,i)perylene	2025/11/17	108	50 - 130	113	50 - 130	<0.0050	ug/g	NC	40		
A055939	Benzo(k)fluoranthene	2025/11/17	84	50 - 130	100	50 - 130	<0.0050	ug/g	NC	40		
A055939	Biphenyl	2025/11/17	80	50 - 130	83	50 - 130	<0.0050	ug/g				
A055939	Chrysene	2025/11/17	84	50 - 130	88	50 - 130	<0.0050	ug/g	NC	40		
A055939	Dibenzo(a,h)anthracene	2025/11/17	104	50 - 130	99	50 - 130	<0.0050	ug/g	NC	40		
A055939	Fluoranthene	2025/11/17	94	50 - 130	96	50 - 130	<0.0050	ug/g	NC	40		
A055939	Fluorene	2025/11/17	93	50 - 130	94	50 - 130	<0.0050	ug/g	NC	40		
A055939	Indeno(1,2,3-cd)pyrene	2025/11/17	112	50 - 130	114	50 - 130	<0.0050	ug/g	NC	40		
A055939	Naphthalene	2025/11/17	82	50 - 130	84	50 - 130	<0.0050	ug/g	NC	40		
A055939	Phenanthrene	2025/11/17	93	50 - 130	97	50 - 130	<0.0050	ug/g	NC	40		
A055939	Pyrene	2025/11/17	102	50 - 130	105	50 - 130	<0.0050	ug/g	NC	40		
A056028	Benzene	2025/11/17	106	50 - 140	101	50 - 140	<0.020	ug/g	NC	50		
A056028	Ethylbenzene	2025/11/17	112	50 - 140	108	50 - 140	<0.020	ug/g	NC	50		

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Bureau Veritas Job #: C5E4917

Report Date: 2025/11/28

QUALITY ASSURANCE REPORT(CONT'D)

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A056028	F1 (C6-C10) - BTEX	2025/11/17					<10	ug/g	NC	30		
A056028	F1 (C6-C10)	2025/11/17	112	60 - 140	108	80 - 120	<10	ug/g	NC	30		
A056028	o-Xylene	2025/11/17	111	50 - 140	107	50 - 140	<0.020	ug/g	NC	50		
A056028	p+m-Xylene	2025/11/17	102	50 - 140	99	50 - 140	<0.040	ug/g	NC	50		
A056028	Toluene	2025/11/17	100	50 - 140	96	50 - 140	<0.020	ug/g	NC	50		
A056028	Total Xylenes	2025/11/17					<0.040	ug/g	NC	50		
A056684	Moisture	2025/11/18							4.8	20		
A057083	Chromium (VI)	2025/11/19	86	70 - 130	91	80 - 120	<0.18	ug/g	NC	35		
A057907	F4G-sg (Grav. Heavy Hydrocarbons)	2025/11/20	97	65 - 135	101	65 - 135	<100	ug/g	1.7	50		
A057924	WAD Cyanide (Free)	2025/11/20	100	75 - 125	109	80 - 120	<0.01	ug/g	NC	35		
A057956	Conductivity	2025/11/20			104	90 - 110	<0.002	mS/cm	0.43	10		
A058102	Acid Extractable Antimony (Sb)	2025/11/20	103	75 - 125	101	80 - 120	<0.20	ug/g	NC	30		
A058102	Acid Extractable Arsenic (As)	2025/11/20	98	75 - 125	96	80 - 120	<1.0	ug/g	NC	30		
A058102	Acid Extractable Barium (Ba)	2025/11/20	99	75 - 125	98	80 - 120	<0.50	ug/g	7.3	30		
A058102	Acid Extractable Beryllium (Be)	2025/11/20	96	75 - 125	96	80 - 120	<0.20	ug/g	NC	30		
A058102	Acid Extractable Boron (B)	2025/11/20	95	75 - 125	91	80 - 120	<5.0	ug/g	NC	30		
A058102	Acid Extractable Cadmium (Cd)	2025/11/20	99	75 - 125	97	80 - 120	<0.10	ug/g	NC	30		
A058102	Acid Extractable Chromium (Cr)	2025/11/20	101	75 - 125	96	80 - 120	<1.0	ug/g	6.7	30		
A058102	Acid Extractable Cobalt (Co)	2025/11/20	97	75 - 125	96	80 - 120	<0.10	ug/g	3.4	30		
A058102	Acid Extractable Copper (Cu)	2025/11/20	98	75 - 125	98	80 - 120	<0.50	ug/g	0.096	30		
A058102	Acid Extractable Lead (Pb)	2025/11/20	90	75 - 125	93	80 - 120	<1.0	ug/g	16	30		
A058102	Acid Extractable Mercury (Hg)	2025/11/20	88	75 - 125	90	80 - 120	<0.050	ug/g	NC	30		
A058102	Acid Extractable Molybdenum (Mo)	2025/11/20	98	75 - 125	96	80 - 120	<0.50	ug/g	NC	30		
A058102	Acid Extractable Nickel (Ni)	2025/11/20	99	75 - 125	96	80 - 120	<0.50	ug/g	1.7	30		
A058102	Acid Extractable Selenium (Se)	2025/11/20	98	75 - 125	99	80 - 120	<0.50	ug/g	NC	30		
A058102	Acid Extractable Silver (Ag)	2025/11/20	98	75 - 125	98	80 - 120	<0.20	ug/g	NC	30		
A058102	Acid Extractable Thallium (Tl)	2025/11/20	91	75 - 125	93	80 - 120	<0.050	ug/g	NC	30		
A058102	Acid Extractable Uranium (U)	2025/11/20	93	75 - 125	93	80 - 120	<0.050	ug/g	6.0	30		
A058102	Acid Extractable Vanadium (V)	2025/11/20	98	75 - 125	94	80 - 120	<5.0	ug/g	5.2	30		
A058102	Acid Extractable Zinc (Zn)	2025/11/20	99	75 - 125	100	80 - 120	<5.0	ug/g	1.5	30		
A058195	Hot Water Ext. Boron (B)	2025/11/20	94	75 - 125	106	75 - 125	<0.050	ug/g	7.7	40		
A058224	Available (CaCl2) pH	2025/11/20			100	97 - 103			0.032	N/A		



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QUALITY ASSURANCE REPORT(CONT'D)

Englobe Corp

Client Project #: 02509562

Sampler Initials: EB

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Leachate Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
A063044	Leachable (SPLP) Antimony (Sb)	2025/11/27	109	80 - 120	107	80 - 120	<0.5	ug/L	3.7	35	<0.5	ug/L
A063044	Leachable (SPLP) Molybdenum (Mo)	2025/11/27	102	80 - 120	101	80 - 120	<1	ug/L	0.59	35	<1	ug/L
A063044	Leachable (SPLP) Silver (Ag)	2025/11/27	100	80 - 120	99	80 - 120	<0.1	ug/L	NC	35	<0.1	ug/L
A063044	Leachable (SPLP) Thallium (Tl)	2025/11/27	101	80 - 120	102	80 - 120	<0.05	ug/L	NC	35	<0.05	ug/L

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference $\leq 2 \times \text{RDL}$).

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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

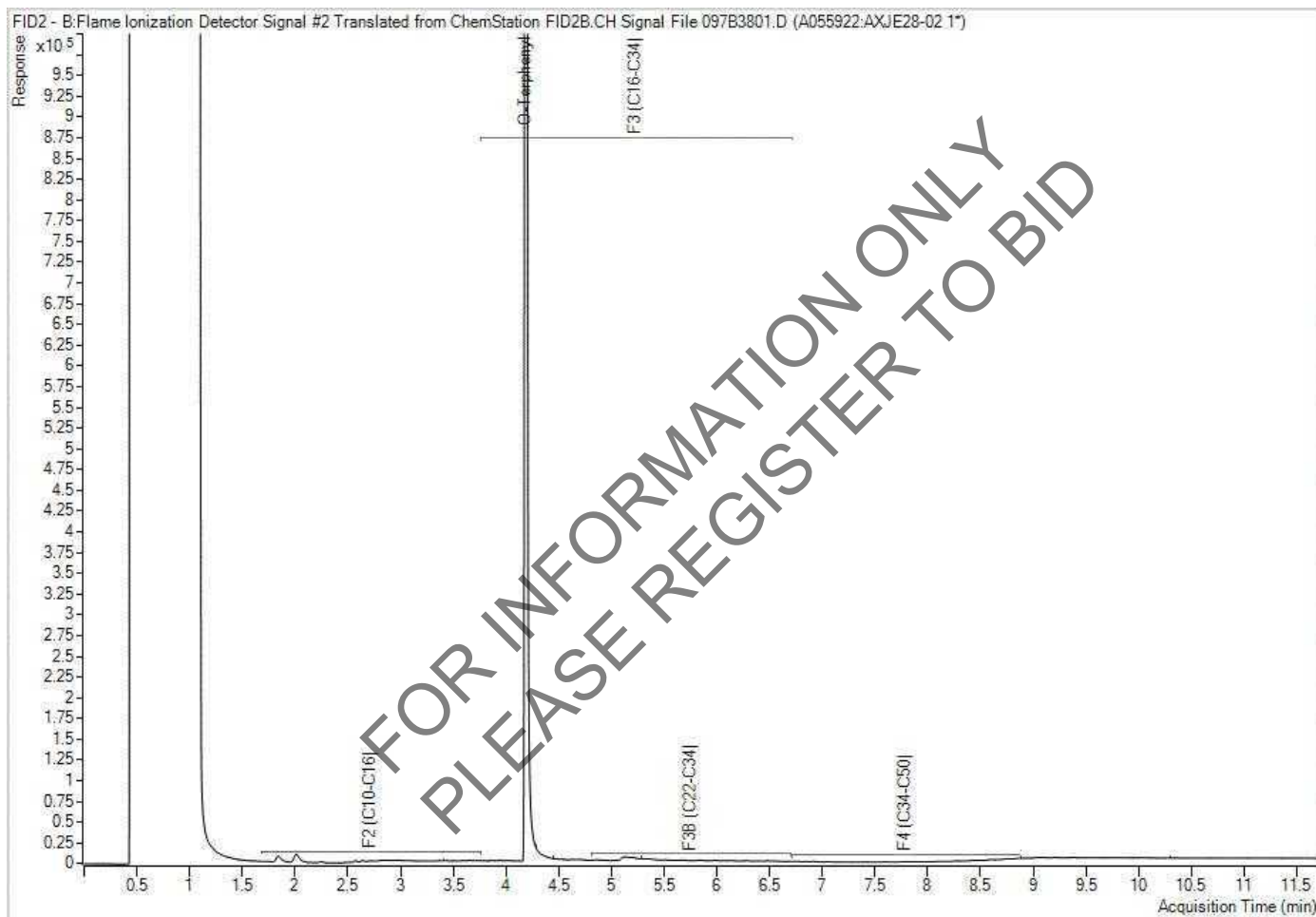
Cristina Carriere, Senior Scientific Specialist

Louise Harding, Scientific Specialist

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

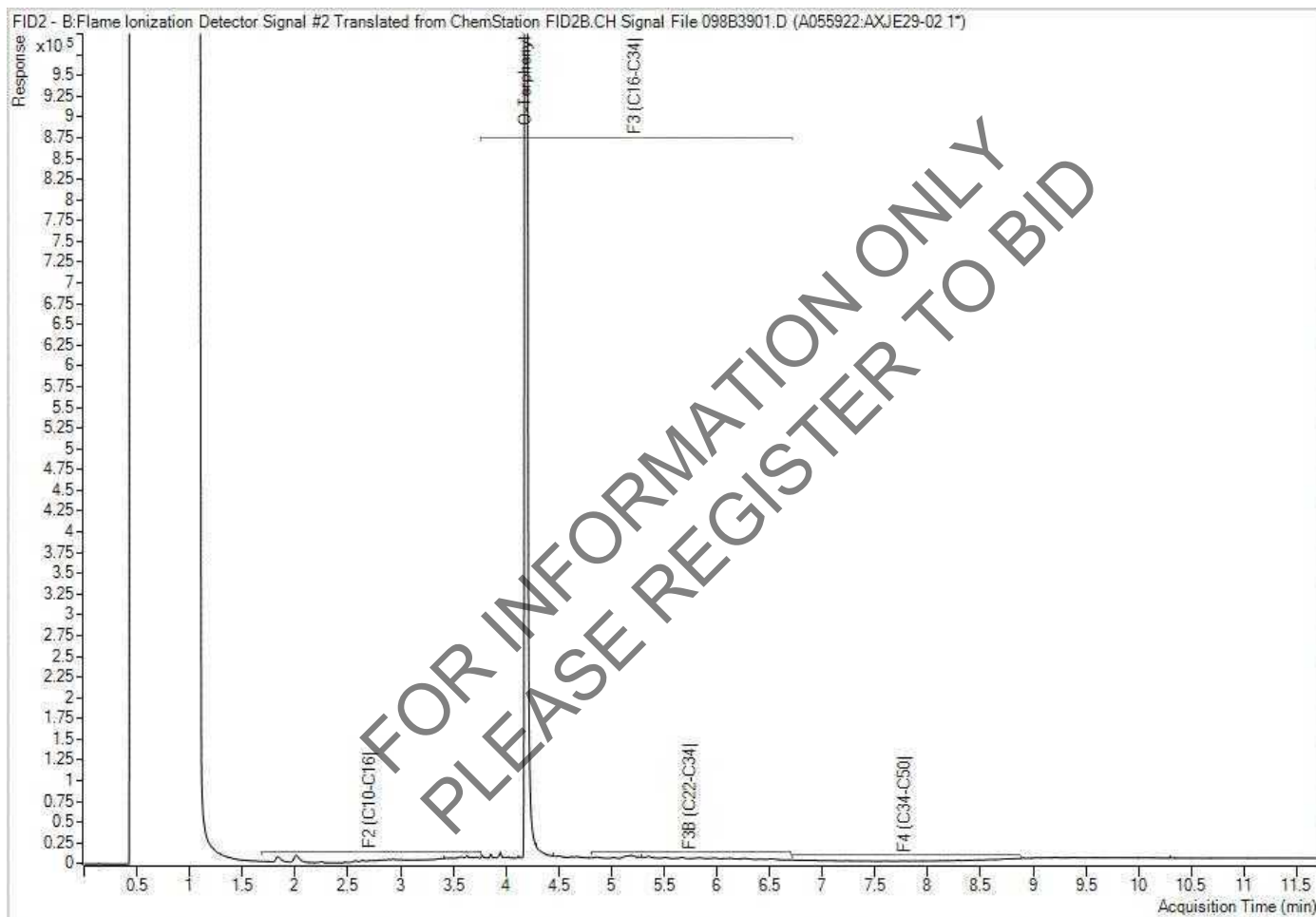
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



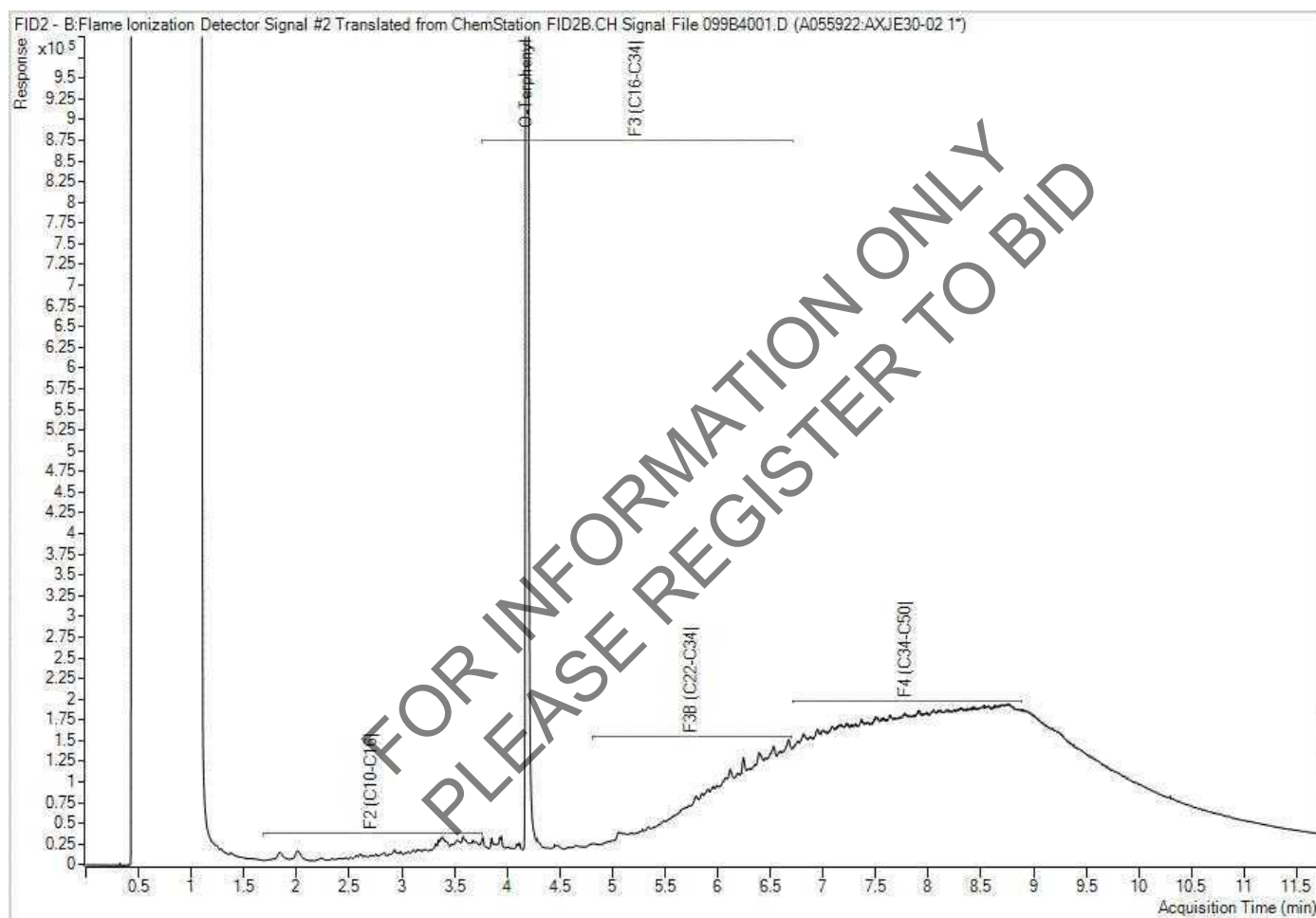
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



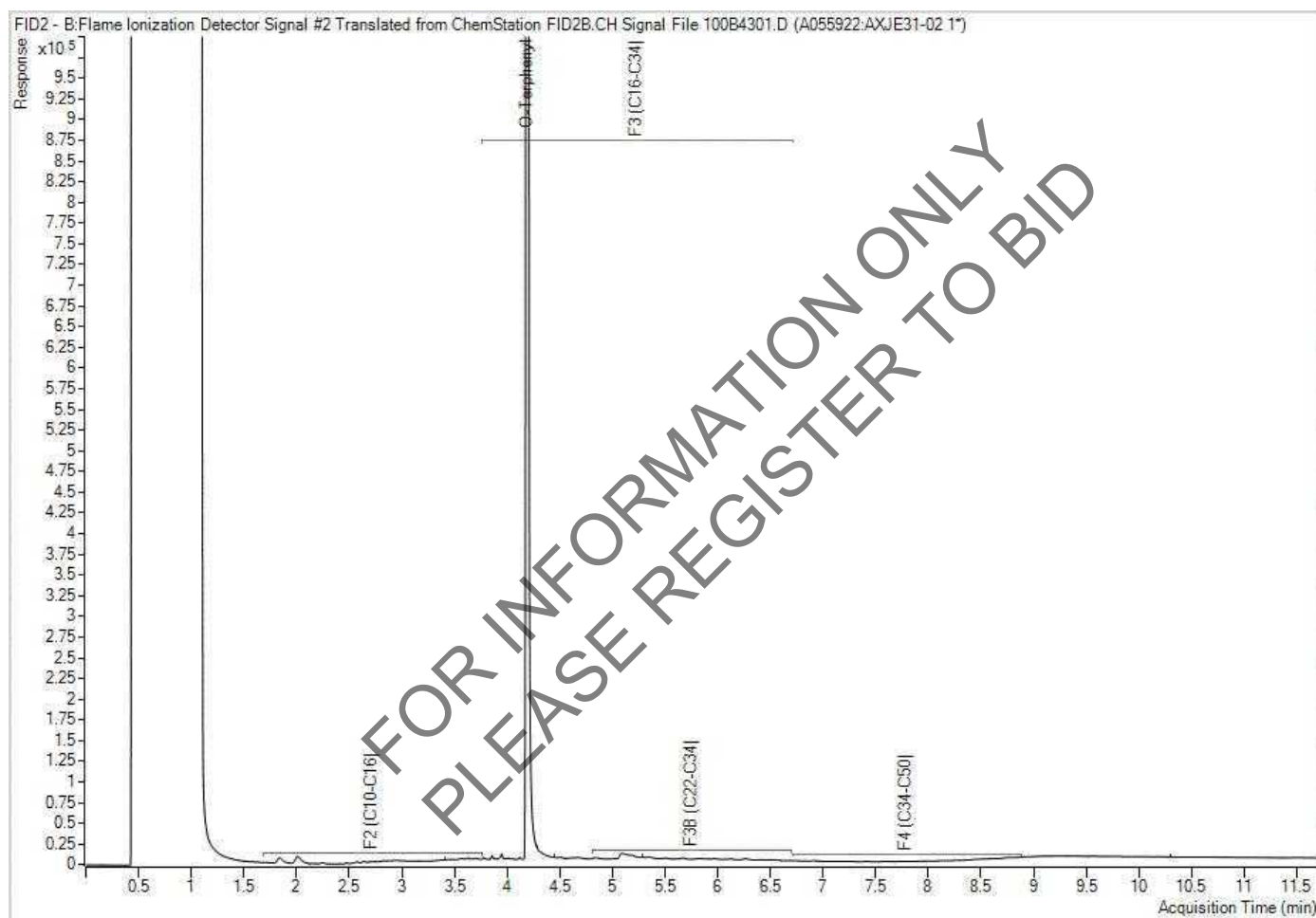
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



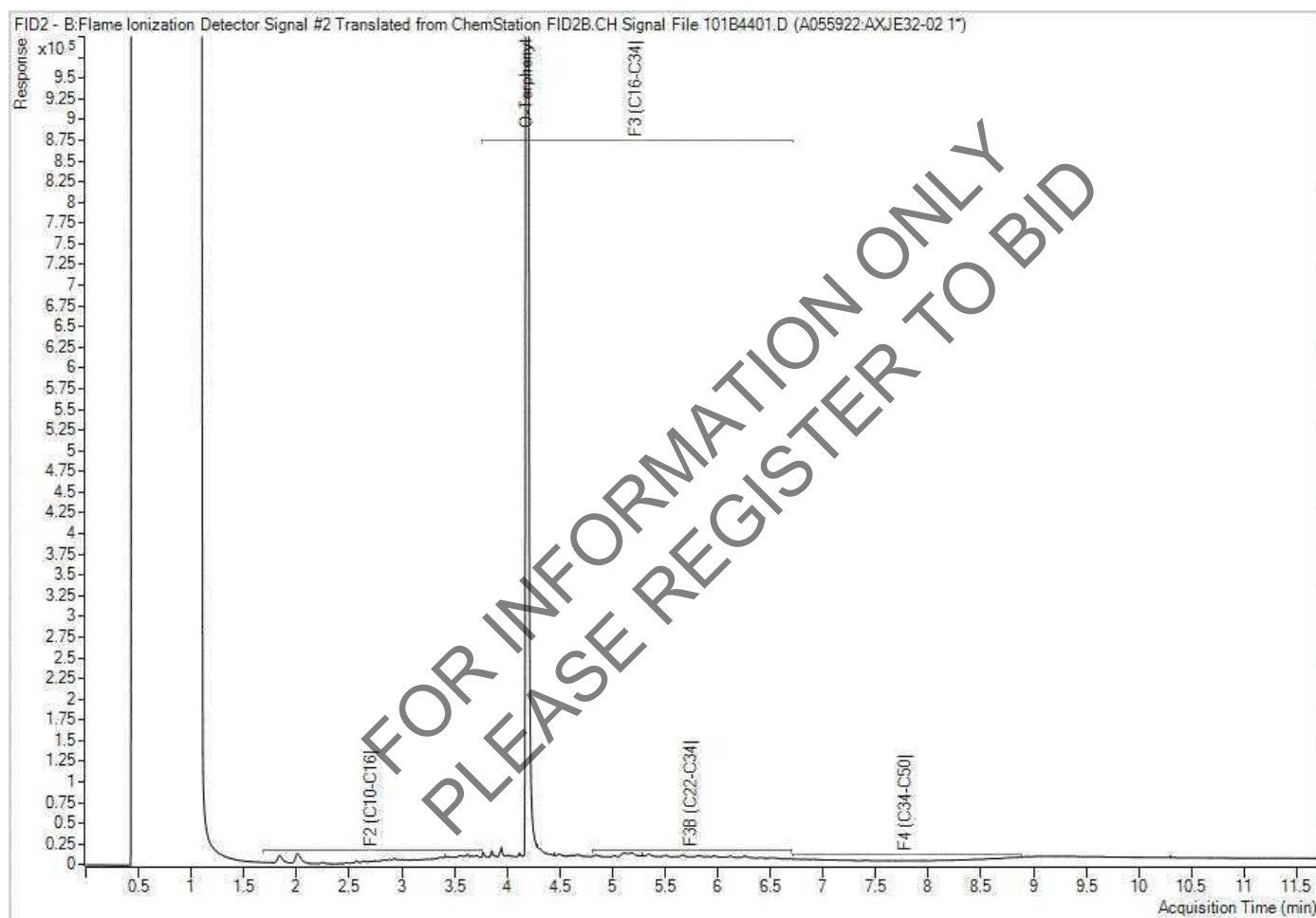
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Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Petroleum Hydrocarbons F2-F4 in Soil Chromatogram



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Appendix E

Statement of Limitations

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