



**THE CORPORATION OF THE MUNICIPALITY OF
RED LAKE**

CONTRACT FOR

**AIRPORT ACCESS ROAD
SANITARY SEWER & WATERMAIN EXTENSION**

Prepared by:

HATCH

Hatch Ltd.
973 Balmoral Street, Suite 101
Thunder Bay, Ontario
P7B 0E2
(807) 623-3449 (phone)

In advance of submitting your bid document; and to guarantee notification of addendums (if any) and provide the ability to ask questions related to the bid document, please complete the Registration Form and return it

The Corporation of the Municipality of Red Lake



REGISTRATION FORM

Packages will be available via the municipal website at www.redlake.ca.

Addendums to bid documents will be forwarded to all registered proponents/bidders upon completion of this form in order to **guarantee notification and receipt of addendums** (if any). Those who do not complete a *Registration Form* are responsible for obtaining all addendums associated with this project. The Municipality of Red Lake shall not be responsible for misinformed proponents/bidders who neglect to complete this form.

Addendums become part of the bid document and shall be submitted along with the originally distributed bid document.

Please return the completed form **in person, by email to clerk.registration@redlake.ca or by fax to (866) 681-2954.**

PROJECT NAME	Airport Access Road Sanitary & Watermain Extension
CLOSING DATE	Monday April 14, 2025 @ 2:00pm CST
COMPANY NAME	
PRINCIPLE CONTACT	
ADDRESS	
ADDRESS (LINE 2)	
CITY AND PROVINCE	
POSTAL CODE	
TELEPHONE	()
FACSIMILE	()
EMAIL ADDRESS	
DATE:	

TENDERER'S CHECKLIST

**MUNICIPALITY OF RED LAKE
TENDERER'S CHECK LIST**

Before submitting your tender, check the following points:

1. Has your tender been signed, sealed and witnessed?
2. Have you enclosed the Tender Deposit, i.e. certified cheque or bid bond?
(Whichever is required by the Contract Documents)
3. Have you enclosed the Agreement to Bond, signed and sealed by your proposed Surety?
4. Have you completed all schedules and prices in the Form of Tender?
5. Have you indicated and included the Contingency Allowance in the Form of Tender?
(If you are required to do so.)
6. Have you indicated the number of addenda included in the Form of Tender?
7. Have you listed your Sub-Contractors and major suppliers? (If applicable)
8. Have you listed your Experience in Similar Work? (If applicable)
9. Have you listed your Senior Staff? (If applicable)
10. Have you listed the Tenderer's Plant? (If applicable)
11. Have you listed your sources of Granular Materials, Concrete and Asphalt? (If applicable)
12. Have you completed Statement "F" (If applicable)
13. Are the documents complete?

**MAKE SURE THAT YOU SEAL THE TENDER IN AN ENVELOPE AND MARK
THEREON THE CONTRACT NAME, PROJECT NUMBER AND NAME OF TENDERER**

LIST OF CONTRACT DOCUMENTS

<u>Description</u>	<u>No. of Pages</u>
Title Page	1
Addenda ___ to ___ inclusive	–
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Tenderer’s Checklist	1
List of Contract Documents	3
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Statement “B” - Tenderer’s Senior Supervisory Staff	
Statement “C” - Tenderer’s Construction Equipment	
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Section 02570 Storm and Sanitary Sewers	2
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List of Contract Drawings

Cover Sheet

A1-374377-AP-P01 Plan/Profile

A1-374377-AP-P02 Plan/Profile & Details

CITY OF THUNDER BAY (COTB) ENGINEERING STANDARDS

The following COTB Engineering Standards form part of, the Contract Documents.

W-108-2-M Anchorage of Watermain at Tees & Crossing for P.V.C. Pipe

Ontario Provincial Standard Drawings, Construction - (OPSD)

The following OPSD form part of, the Contract Documents. Other reference standards, specifications and publication referred to in these drawings also form part of the documents.

401.010	Cast Iron, Square Frame With Circular Closed or Open Cover for Maintenance Holes
701.010	Precast Concrete Maintenance Hole, 1200mm Diameter
701.100	Frost Strap Installation
802.010	Flexible Pipe Embedment and Backfill, Earth Excavation
973.130	Fence, Steel Beam, Barricade, Installation
985.110	Small Sign Support System, Single Breakaway Wooden Post, 89 x 140 mm, 140 x 140 mm, and 140 x 184 mm, Installation, Single Post Assembly
1006.010M	Sewer Service Connections for Main Pipe Sewer (Modified)
1101.020	Valve Operator
1104.010M	Water Service Connection (19mm and 25mm Diameter Sizes), Modified
1105.010M	Hydrant Installation (Modified)
1109.011	Cathodic Protection for PVC Watermain Systems
1109.030	Insulation for Sewers and Watermains in Shallow Trenches

Ontario Provincial Standard Specifications, Construction - (OPSS)

The following OPSS form part of but are not bound with the Contract Documents. Other reference standards, specifications and publication referred to in these specifications also form part of the documents.

LIST OF CONTRACT DOCUMENTS

100 Nov 06	401 Nov 21	501 Nov 17	802 Nov 19	1308 Nov 19
180 Nov 21	402 Nov 16	510 Nov 18	804 Nov 14	1315 Nov 21
201 Apr 19	403 Nov 16	511 Nov 19	805 Nov 21	1350 Nov 19
206 Apr 19	407 Nov 21	512 Nov 17	1001 Nov 21	1351 Nov 19
301 Nov 18	408 Nov 21	517 Nov 21	1002 Nov 13	1430 Nov 17
302 Nov 16	409 Nov 17	703 Apr 19	1003 Nov 13	1504 Nov 22
310 Nov 17	410 Nov 18	710 Nov 21	1004 Nov 21	1605 Nov 18
311 Nov 18	450 Nov 21	712 Nov 21	1010 Nov 13	1713 Nov 21
314 Nov 19	441 Nov 21	721 Nov 18	1101 Nov 16	1714 Nov 21
353 Nov 21	442 Nov 20		1150 Nov 20	1841 Nov 19
	492 Nov 20			1850 Nov 20
	493 Nov 19			2001 Apr 21

SECTION 00100 - INFORMATION TO TENDERERS

1.1 TENDERS

Sealed tenders clearly marked as to contents, will be received by:

**Municipality of Red Lake
2 Fifth Street, P.O. Box 1000
Red Lake, Ontario
POV 2M0**

And must be received no later than **2:00 p.m CST (Local Time)** on:

Monday April 14, 2025

1.2 FORM OF TENDER AND CONTRACT FORM

1.2.1 Tenders must be completed in ink or typed and submitted on the official Tender Form.

1.2.2 Each tender shall include the completed Tender Form, Statements "A" to "E", Agreement to Bond, all as bound herein and a tender deposit as required herein. The complete written tender documents must be submitted as the tender and the Tender Form must not be separated nor removed from the other documents therewith. The Tenderer shall give the Total Tender Price both in words and in figures and shall fill in all blank spaces for figures and also shall fill in all blank spaces for unit prices, item prices, lump sums and other information in the Tender Form.

1.3 TENDER DEPOSIT

1.3.1 Each Tenderer shall include a tender deposit in the form of a certified cheque or Bid Bond payable to The Corporation of the Municipality of Red Lake in the amount of 10% of the Tender Price.

1.3.2 Bid Bonds shall be submitted on CCDC Form 220.

1.3.3 Tender deposits shall be returned to unsuccessful Tenderers after a reasonable time for the consideration and award of the Contract has elapsed.

1.3.4 The tender deposit of the successful Tenderer shall be exchanged for the Performance and Labour and Material Payment Bond for 100% and 50% of the total value of the work respectively, upon the award of the Contract.

1.3.5 Should the successful Tenderer fail to enter into a Contract with the Municipality or fail to produce the required Performance and Labour and Material Payment Bonds within 2 weeks of the date of acceptance of the Tender, or to start work as directed, the tender deposit will be forfeited to the Municipality.

1.4 DISQUALIFICATION OF TENDERS

1.4.1 Under no circumstances will tenders be considered which:

- (a) Are received after the official closing time and date for tenders.
- (b) Are not accompanied by a cheque or Bid Bond in the amount specified.
- (c) Are not signed with original signatures.

1.5 INFORMAL OR UNBALANCED TENDERS

1.5.1 Tenders which are incomplete, conditional, illegible or obscure or that contain additions not called for, reservations, erasures, alterations, or irregularities of any kind, may be rejected as informal.

1.5.2 Tenders that contain prices, which appear to be so unbalanced as likely to affect adversely the interests of the Municipality, may be rejected.

1.5.3 The Owner reserves the right to waive informalities at its discretion.

1.5.4 Tenderers who have submitted tenders that have been rejected by the Owner because of informalities will normally be notified of the reasons for the rejection within 10 days after the closing date of tenders.

1.6 SUBSEQUENT WITHDRAWAL OR QUALIFYING OF A TENDER

1.6.1 A Tenderer who has already submitted a Tender may submit a further Tender at any time before the official closing time. The last Tender received shall supersede and invalidate all Tenders previously submitted by the Tenderer.

1.6.2 A Tender may be withdrawn by the Tenderer by written notice delivered to The Corporation of the Municipality of Red Lake prior to the time fixed for opening tenders.

1.7 TENDER VALIDITY

1.7.1 This Tender shall constitute an irrevocable offer by the Tenderer, open for acceptance by The Corporation of the Municipality of Red Lake for a period of 60 days, after which time, if not accepted, the Tender shall be null and void. It is understood that errors in the Tender, whether accidental, caused by negligence

of the Tenderer or otherwise shall not confer any additional rights of withdrawal upon the Tenderer.

1.8 OMISSIONS/DISCREPANCIES

1.8.1 Should a Tenderer find discrepancies in, or omissions from the drawings, specifications or other Tender documents, or should he be in doubt as to their meaning, he should notify the Contract Administrator who may send a written instruction to all Tenderers. Verbal answers are only binding when confirmed by written addenda.

1.8.2 Should the Tenderer not agree that the materials and methods specified, or designated on the drawings, will provide an installation to meet the requirements of the project, he shall notify the Contract Administrator in writing, stating his reason for objection and may submit a suggested alternative. In such an event, the Contract Administrator may choose to issue an addendum.

1.9 ERRORS AND OMISSIONS ON TENDER FORM

1.9.1 Whenever in a Tender the amount tendered for an item does not agree with the extension of the estimated quantity and the tendered unit price, the unit price shall govern and the amount of the Total Tender Price shall be corrected accordingly.

1.9.2 If a Tenderer has omitted to enter a price for an item of work set out in the Tender Form, he shall, unless he has specifically stated otherwise in his Tender, be deemed to have allowed elsewhere in the Tender Form for the cost of performing the said item of work and, unless otherwise agreed to by the Owner, no increase shall be made in the total Tender price on account of such omission and the Tenderer shall be deemed to have tendered for the entirety of the scope of work set out in the Tender Form.

1.10 QUALIFICATION OF TENDERERS

1.10.1 The Municipality may make such investigations as it deems necessary to determine the ability of the Tenderer to perform the work, and the Tenderer shall furnish to the Municipality all such information and data for the purpose as the Municipality may request. The Municipality reserves the right to reject any Tender if the evidence submitted by or investigation of such Tenderer fails to satisfy the Municipality that such Tenderer is properly qualified to carry out the obligations of the Contract and to complete the work as contemplated therein.

1.11 PROOF OF ABILITY

- 1.11.1 In order to aid the Municipality in determining the ability of each Tenderer to complete the work, the Tenderer shall complete the following Statement sheets; which are bound herein.
- 1.11.1 Statement “A” – Stating the Tenderer’s experience in similar work which it has successfully completed.
- 1.11.2 Statement “B” – Giving a list of the Tenderer’s senior supervisory staff with a summary of the experience of each.
- 1.11.3 Statement “C” – Giving the location and description of the construction equipment; which the Tenderer proposes to use, the equipment it has available or under its control, the equipment to be rented and the equipment to be purchased.
- 1.11.4 Statement “D” – Giving the name and address of each proposed sub-contractor used in making up his Tender and shall state the portion of the work allotted to each. Only one sub-contractor shall be named for each part of the work to be sub-contracted.
- 1.11.5 Statement “E” – Listing the sources of supply for granular “A”, granular “B”, HL4 asphalt and concrete. Tenderers will be required to submit proof that the pits or sources for the supply of materials under this Contract have been approved by the Ministry of Transportation – Ontario. Such proof will be required by the Contract Administrator after the opening of tenders, but prior to starting the work. No changes in pit locations from those listed are to be made by the Contractor once the Contract Administrator has approved the sources.
- 1.11.6 The Tenderer may be required to furnish additional statements covering other matters including financial resources and convictions or orders imposed under Health & Safety or Environmental legislation.

1.12 EQUIVALENTS

- 1.12.1 When, an article is specified by its trade or other name (whether such name is followed by the phrase “or approved equal” or not), the Tenderer shall base its Tender price on the supply of the named article and no other.
- 1.12.2 The Tenderer may submit with its Tender suggested equivalents to those articles specified by trade or other names. Such submissions shall be made on Statement “E”, bound herein, and shall show the name of the article specified, the name and description of the suggested equivalent, and the total revision to the Tender Price that would result if the equivalent were accepted.

1.13 AGREEMENT TO BOND

1.13.1 Every Tender shall be accompanied by an “Agreement to Bond” in the form included with the Tender Form, or on an approved CCDC form, and shall be executed under its corporate seal by a Surety Company lawfully doing business in the Province of Ontario from which the Tenderer proposes to obtain the required Bonds prescribed in the Contract.

1.14 HARMONIZED SALES TAX

1.14.1 The tendered unit prices shall include the Harmonized Sales Tax and this amount shall be shown separately on the Tender Form and on invoices submitted by the Contractor.

1.15 TAXES AND DUTIES

1.15.1 The Tenderer shall include sales tax in accordance with current sales tax legislation taking into account any changes that have been made known by the Government and that will occur during the life of the Contract.

1.15.1 If sales taxes are increased or decreased, or other amendments are made in the legislation during the course of the Contract that alter tax amounts carried in the Contract price, an adjustment will be made accordingly to the Total Contract Price.

1.15.2 The Contractor shall keep records and invoices of accounts subject to Federal Goods Service Tax and Provincial Sales Tax for the purpose of establishing taxes paid and for substantiation in the event of changes to the tax legislation during the course of the Contract.

1.15.3 The Tenderer shall contact the Sales Tax authorities and determine what the applicable taxes are and the procedures for tax exemption and/or refunding and include related administrative costs in the Tender.

1.16 NON-RESIDENT CONTRACTOR

1.16.1 If the Contractor is a non-resident of Ontario, it shall, immediately after it has received the Contract Administrator’s written order to commence work, obtain from the Retail Sales Tax Branch a certificate showing that the Contractor has registered with the Retail Sales Tax Branch and shall submit such certificate to the Municipality at the same time that it furnishes the Performance Bond and the Labour and Material Payment Bond.

1.16.1 The Contractor shall not commence work or order any materials or equipment for the Contract until it has registered with the Retail Sales Tax Branch.

1.16.2 The Contractor shall ensure that all sub-contractors proposed for carrying out any of the work required by the Contract and which are non-residents of Ontario have registered with and have complied with the requirements of the Retail Sales Tax Branch before they commence any such work.

1.17 EXAMINATION OF SITE AND SUB-SURFACE CONDITIONS

1.17.1 Each Tenderer is encouraged to visit the site of the work before submitting its Tender and must satisfy itself by personal examination as to the local conditions to be encountered during the construction and conduct of the work. It shall make its own estimate of the surface facilities, sub-surface conditions and difficulties to be encountered. It is not to claim at any time after submission of its Tender that there was any misunderstanding of the terms and conditions of the Contract relating to site conditions.

1.17.2 The Tenderer, during the period of tender, shall make such additional examination of the soil and subsurface conditions as it may deem necessary to satisfy itself as to the conditions that may be encountered during construction.

1.18 LUMP SUM FOR MOBILIZATION AND DEMOBILIZATION

1.18.1 The mobilization and demobilization item in the Schedule of Tender Prices is to cover the Tenderer's cost of mobilization at the beginning of the construction period and demobilization at the close of the construction period. The price entered for this item shall be consistent with the costs involved but shall not, in any event, exceed 5 per cent of the Tender Price.

1.18.2 If the Tenderer has entered against this item in his tender a price in excess of 5 per cent of the tender price, the Owner shall, in preparing Contract Documents based upon the tender, reduce the price for the said item to an amount not exceeding 5 per cent of the Tender Price and shall add the amount of the reduction to other items in the Lump Sum breakdown as he deems to be fair and reasonable so the Tender Price shall not be affected.

1.18.3 Sixty per cent of the price for mobilization and demobilization item shall be considered as relating to mobilization and the balance to demobilization.

1.18.4 The payment for mobilization shall be included in the first payment certificate issued for the Contract subject to the Owner being satisfied that total mobilization has been performed. Otherwise, it shall be paid in part over a number of payments until totally performed.

1.18.5 The payment for demobilization shall become due following substantial performance of the Work and subject to the Owner being satisfied that full

demobilization has been performed. The Owner may, in his discretion, allow part payment for demobilization before total demobilization has been effected.

1.19 QUESTIONS DURING TENDER PERIOD

For questions during the tender period, please use the following email address:

clerk.registration@redlake.ca

Last day for questions will be **Monday March 24, 2025**.

1.20 AWARD OF CONTRACT

1.20.1 The lowest or any tender need not necessarily be accepted.

SECTION 00300 - TENDER FORM

1.0 TENDER FOR

AIRPORT ACCESS ROAD – SANITARY SEWER & WATERMAIN EXTENSION

1.1 SUBMISSION

The following Tender is hereby submitted to:

Municipality of Red Lake
2 Fifth Street, P.O. Box 1000
Red Lake, Ontario
POV 2M0

On behalf of the Municipality of Red Lake, herein after called the “Owner”

On behalf of:

Contractor

Address

hereinafter called the “Tenderer”

1.1.1 (We), the undersigned, having fully examined the locality and Place of the Work, having fully investigated the conditions of the Work, having read and understood the Contract Documents (comprised of the tendering information, supplementary general conditions, general conditions, specifications and drawings, including all supplements, addenda and revisions to same to the date of this tender) and having secured all of the information necessary to enable the submission of this tender, hereby agree and offer to perform the totality of the Work described in the Contract Documents, in accordance with the Contract Documents, for the total Tender Price (including H.S.T.) of:

(\$ _____)

TENDER FORM

1.2 CONTINGENCIES AND ALLOWANCES

1.2.1 We agree that the Tender Price includes the contingency sum of **\$50,000** and that no part of this sum shall be expended without the written direction of the Contract Administrator, and any part not so expended shall be deducted from the Contract Price.

1.3 QUANTITIES

1.3.1 The Tender Price is compiled from the Schedule of Prices included hereinafter. The quantities in the schedule being approximate, we agree that the final valuation will be made on the basis of actual quantities measured during and on completion of the Work at the unit prices in the schedule.

1.4 ADDITIONS AND DEDUCTIONS

1.4.1 The Tenderer agrees that, if this tender is accepted by the Owner:

- (i) it will carry out any additional or extra work (including the supplying of any additional Products pertaining thereto) or will delete any work as may be required by the Contract Administrator in accordance with the Contract; and,
- (ii) the carrying out of any work referred to in paragraph (i) above or the issuance by the Contract Administrator of a Contract Change Order relating to such work or the acceptance by the Tenderer of such Contract Change Order shall not, except as expressly stated in such Contract Change Order, waive, affect or vary any of the terms of the Contract or of an Contract Change Order previously issued by the Contract Administrator or any of the rights of the Owner or of the Contract Administrator under the Contract.

1.4.2 The Tenderer agrees that, if this tender is accepted by the Owner the prices applicable to work referred to in paragraph 1.4.1 above shall be determined as follows:

- (i) The Schedule of Tender Prices shall apply where applicable;
- (ii) If the above Schedule is inapplicable the prices shall be determined in accordance with the General Conditions as amended by the Supplementary General Conditions.

1.4.3 The Tenderer agrees that he is not entitled to payment of the Contingency Allowance except for additional work carried out by him in accordance with the

TENDER FORM

Contract and only to the extent of such additional work, as authorized by the Consultant in writing.

1.5 ADDENDA

1.5.1 We agree that we have received Addenda _____ to _____ inclusive, and the tender price includes for the provisions set out in such Addenda.

1.6 CONTRACT TIME

1.6.1 We agree that construction activities shall commence on an agreed start date and we shall ensure that the work progresses continuously and without interruption, except for reasons beyond the Contractor's control, such as inclement weather, material shortages, or force majeure events.

1.6.2 We agree to maintain a consistent work schedule, including weekends and holidays, as necessary, to complete the project in a timely manner and avoid any delays.

1.6.3 We agree that failure to maintain continuous work without authorized stoppages will result in delay penalties at the discretion of the Municipality.

1.6.4 All work on this contract shall be completed by **Friday October 31, 2025.**

1.7 SCHEDULE OF TENDER PRICES						
ITEM NO.	REF	DESCRIPTION	UNIT	ESTIMATED QUANTITY	UNIT BID PRICE	TOTAL PRICE
SECTION A - AIRPORT ACCESS ROAD						
ROADWAY AND GRADING						
A01	314	Granular Driveways, 150mm Granular A	m2	200		
A02	314, SP	Granular Driveways, Granular B Type I	m3	1,200		
A03	SP	Reconstruction of Fencing, Allowance	LS	1		
A04	410	450mm Pipe Culvert	m	16		
WATERMAIN						
A05	441	Watermains, 200mm Diameter	m	203		
A06	441	Water Valves, 200mm	EA	2		
A07	441	Hydrant Set Complete	EA	2		
A08	441	Water Services, 25mm	m	48		
A09	441	Water Services Appurtenances Sets	EA	4		
A10	441,SP	Connection to Existing Watermains	EA	1		
A11	1605, SP	50mm Extruded Expanded Polystyrene Insultation for	m2	310		
SANITARY SEWER						
A12	407	1200mm Sanitary Manholes	EA	3		
A13	408	Breaking Into, Adjusting and Rebuilding Sanitary Manholes	LS	1		
A14	409, SP	Closed Circuit Television (CCTV) Inspection	m	203		
A15	410	200mm Flexible Sanitary Sewer Pipe	m	203		
A16	410, SP	Sanitary Service Laterals, 150mm	m	48		
TOTAL SECTION A						\$
SECTION B - GENERAL ITEMS						
B01	100, SP	Bonding and Insurance	LS	1		
B02	SP	Mobilization and Demobilization	LS	1		
TOTAL SECTION B						\$

SECTION C - PROVISIONAL ITEMS						
C01	SP	Contingency Allowance	LS	1	\$50,000	\$ 50,000.00
C02	SP	Pole Protection and Support, Allowance	LS	1	\$5,000	\$ 5,000.00
C04	1004, SP	Clear Stone, Below Bedding	m3	200		
TOTAL SECTION C						
SUMMARY OF PRICES						
SECTION A - AIRPORT ACCESS ROAD						\$
SECTION B - GENERAL ITEMS						\$
SECTION C - PROVISIONAL ITEMS						\$
SUB-TOTAL						\$
HST						\$
TOTAL TENDER PRICE						\$

TENDER FORM

1.8 DECLARATIONS OF TENDERER

1.8.1 The Tenderer declares that no person, firm or corporation other than the Tenderer has any interest in this tender or in the proposed Contract for which this tender is made.

1.8.2 The Tenderer declares that this tender is made without any connection, comparison of figures or arrangement with, or knowledge of, any other corporation, firm or person making a tender for the same Work and is in all respects fair and without collusion or fraud.

1.9 CONDITIONS OF TENDER

1.9.1 This tender is irrevocable from the official closing time and is unconditionally open for acceptance for 60 days after the official closing time, whether any other tender has been previously accepted or not.

1.10 DISCLAIMER

1.10.1 The Tenderer agrees and acknowledges there is no representation, warranty, collateral agreement or condition, whether direct or collateral, or expressed or implied, which induced the Tenderer to submit this tender, or on which reliance is placed by the Tenderer, or which affects this tender.

1.11 SIGNATURES

Offered by the Tenderer _____

Dated at _____ this _____ day of _____, 2025.

Signature of Tenderer, Title

Signature of Witness

Signature of Tenderer, Title

Signature of Witness

TENDER FORM

Note:

If the tender is submitted by or on behalf of a corporation, it must be signed in the name of such corporation by the duly authorized officers and the seal of the corporation, or wafer seal, must be affixed. If the tender is submitted by or on behalf of an individual or a partnership a seal must be affixed opposite the signature of the individual or of each partner and each signature shall be witnessed.

END OF SECTION

AGREEMENT

SECTION 00310 - AGREEMENT

Municipality of Red Lake

For the 'Airport Access Road – Sanitary Sewer &
Watermain Extension' Project

AGREEMENT

This Agreement made in triplicate this ____ day of _____, 2025, between
_____ hereinafter called "The Contractor"

AND

_____ hereinafter called "The Owner"

WITNESSETH that The Contractor agrees with The Owner to perform all the work in accordance with the Contract Documents referred to in the tender of The Contractor dated the ____ day of _____ (which shall be deemed to form part of this Contract) to the satisfaction of the Engineer for the total contract price of \$ _____ which Contract Documents are attached hereto and which are hereby expressly made part of this Contract.

The Owner hereby agrees with The Contractor that, in consideration of the work being performed by The Contractor as specified, The Owner shall pay The Contractor for said work in accordance with the provisions set out in the attached Contract Documents.

Time shall be deemed the essence of this Contract.

IN WITNESS WHEREOF the parties hereto have executed this Agreement under their respective corporate seals and by the hands of their proper officers thereunto duly authorized.

SIGNED, SEALED AND DELIVERED
In the presence of:

OWNER

Name

Signed

Name and Title

Witness

Signed

Name and Title

Name and Title

AGREEMENT

CONTRACTOR

Name

Signed

Name and Title

Witness

Signed

Name and Title

Name and Title

Note: In the case of a tender submitted by a Corporation, the signatory or signatories warrant as follows:

“I/We have the authority to bind the Corporation”

If the tender is submitted by an individual or partnership, it is deemed to be given under seal.

AGREEMENT TO BOND

SECTION 00610 - AGREEMENT TO BOND

Date: _____, 2023

Hatch Ltd.

H-374377

Name of Surety Company: _____

Address of Surety Company: _____

THE CORPORATION OF THE MUNICIPALITY OF RED LAKE
2 Fifth Street, P.O. Box 1000
Balmertown, Ontario
P0V 1C0

Should the Corporation of the Municipality of Red Lake [hereinafter referred to as the “Owner”] accept the Tender of and execute an Agreement with _____ [hereinafter referred to as the “Tenderer”], we, the undersigned Surety Company, do hereby consent and agree to become bound to the Owner as Surety for the Tenderer in any of the following Bonds, on the standard format of the Canadian Construction Association.

1. Performance Bond for an amount equal to 100% of the Total Tender Price.
2. Labour and Material Payment Bond for an amount equal to 50% of the Total Tender Price.

We, the undersigned Surety Company, agree to furnish the Owner with the said Bonds within 7 days after written notification that the Owner has requested the said Bond or Bonds. We hereby further declare that our Company is legally entitled to do business in the Province of Ontario.

Yours truly,

AGREEMENT TO BOND

[Name of Surety Company]

[Address]

[Seal]

NOTE: This Agreement must be executed on behalf of the Surety Company by its authorized Officers under the Company's corporate seal.

**SECTION 00625 – ACCESSIBILITY FOR ONTARIANS
WITH DISABILITIES ACT, REG. 429/07**



**ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT, 2005
ONTARIO REGULATION 429/07
(Accessibility Standards For Customer Services Section 6, Training)
COMPLIANCE FORM FOR CONTRACTORS**

Contracting Party: _____

Address: _____

Location of work being provided to the Municipality: _____

Work being performed for the Municipality: _____

Anticipated duration of the contract or services being provided: _____

I have the authority to bind the contracting party and I verify that our company meets the requirements of the Accessibility For Customer Service Regulation 429/07, Section 6; Training For Staff and will continue to meet these requirements for the duration of the contract or services being provided to the Municipality.

Signature: _____

Title: _____

Date: _____

Please submit prior to beginning of any contract work for the Municipality.

TENDERING STATEMENTS

- A Tenderer's Experience in Similar Work
- B Tenderer's Senior Supervisory Staff
- C Tenderer's Construction Equipment
- D Sub-Contractors and Suppliers
- E Sources of Granular Materials, Concrete and Asphalt
- F Schedule of Equivalentents

STATEMENT “A” – TENDERER’S EXPERIENCE IN SIMILAR WORK

<u>Year</u>	<u>Description of Contract</u>	<u>Owner’s Name</u>	<u>Value</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

STATEMENT “B” – TENDERER’S SENIOR SUPERVISORY STAFF

<u>Name</u>	<u>Appointment</u>	<u>Qualification and Experience</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

STATEMENT “C” – TENDERER’S CONSTRUCTION EQUIPMENT

STATEMENT “D” – SUB-CONTRACTORS AND SUPPLIERS

The Tenderer shall quote the name and address of each proposed sub-contractor or supplier. After the Tender has been accepted by the Owner, the Contractor shall not be allowed to substitute other sub-contractors or suppliers in place of those named below without written approval of the Engineer.

NOTE: Indicate “N/A” or “None” if you intend on performing all aspects of this Work.

<u>Sub-Trade Section or Equipment</u>	<u>Name and Address of Sub-Contractor or Supplier</u>
Earth Excavation and Grading	_____
Pipe Laying	_____
Granular	_____
Paving	_____
Concrete	_____
Precast Concrete	_____

STATEMENT “E” – SOURCES OF GRANULAR MATERIALS, CONCRETE AND ASPHALT

<u>Material</u>	<u>Supplier</u>	<u>Supplier’s Pit Location</u>
Hot Mix Asphalt (HL4)	_____	_____
Granular ‘A’	_____	_____
Granular ‘B’	_____	_____
Concrete	_____	_____
Topsoil	_____	_____

STATEMENT "F" – SCHEDULE OF EQUIVALENTS

<u>Specified Article</u>	<u>Name of Submitted Equivalent</u>	<u>Catalogue No. etc. of Submitted Equivalent</u>	<u>Proposed Price Revision</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SECTION 08000 - OPS

SUPPLEMENTAL GENERAL CONDITIONS

The Ontario Provincial Standards [OPS] General Conditions of Contract, OPSS.MUNI 100, dated November 2006, are modified as follows:

SECTION GC1 - INTERPRETATION

GC1.04 Definitions

The definitions of “Controlling Operation” and “Subcontractor” in Subsection GC1.04 are deleted and replaced by the following:

“Controlling Operation” means any component of the Work, as determined by the Contract Administrator, which, if delayed, will delay the completion of the Work.

“Subcontractor” means a person, firm or corporation undertaking the execution of a part of the Work by virtue of an agreement with the Contractor which has been approved by the Owner.

Subsection GC1.04 is amended by the addition of the following definitions:

“Corporation” means the same as the “Owner”.

“Engineer” and “Consultant” and “Authority” means the Contract Administrator solely in charge of this Contract.

“Ministry” means the Ministry of Transportation of Ontario. Any reference to the Ministry or the Ministry of Transportation and Communications found in this Contract shall mean the “Owner”.

“Project Specifications” means Ontario Provincial Standard Specifications, and Special Provisions.

“Provide” means supply all labour, materials, equipment, handling and cartage required to complete installation of the item concerned.

GC1.05 Substantial Performance

Paragraph 01)(a) of Subsection GC1.05, is deleted and replaced by the following:

- a) when the Work or a substantial part thereof has passed inspection and testing and is ready for use or is being used for the intended purposes; and is ready for use.

GC1.07 Final Acceptance

Subsection GC1.07 is amended by the addition of the following paragraph:

- 02) In addition to all other prior requirements Final Acceptance will not occur until the Work has passed all inspections and testing requirements.

SECTION GC2 – CONTRACT DOCUMENTS

GC2.01 Reliance on Contract Documents

Paragraph 01)(a) of Clause 2.01 is deleted and replaced by the following:

- 01)(a) The Contractor shall assume full responsibility for obtaining the exact locations of underground utilities. The Contract Administrator does not warrant the correctness of completeness of the Plans with respect to existing public utilities and services whether underground or on the surface. The Contractor shall have no claim for additional compensation, if, in uncovering and carrying out the work, it should find that the actual location of existing utilities does not correspond with the locations shown on the Plans.

SECTION GC3 - ADMINISTRATION OF THE CONTRACT

GC3.06 Working Area

Subsection GC3.06 is amended by the addition of the following paragraph:

- 04) The location of all temporary buildings used for construction purposes must be submitted to the Contract Administrator for approval before erection work commences. Temporary buildings must be kept clean and sanitary and must not become a hazard to health or a nuisance to the adjoining properties.

GC3.07 Delays

Paragraph 01) of Subsection GC3.07 is deleted and replaced by the following:

- 01) If the Contractor is delayed in the performance of the Work by:

- a) war, blockades, and civil commotions, errors in the Contract Documents, an act or omission of the Owner, Contract Administrator, other contractors, or anyone employed or engaged by them directly or indirectly, contrary to the provisions of the Contract Documents; or
- b) 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; or
- c) the Contract Administrator giving notice under Subsection GC7.10, Suspension of Work; or
- d) abnormal inclement weather; or
- e) archaeological finds in accordance with Subsection GC3.16

then the Contractor shall **not** be reimbursed by the Owner for any costs incurred by the Contractor as the result of such delay. Any delay in the performance of the work shall be considered for the extension of Contract Time only.

In the case of an application for an extension due to abnormal inclement weather, the Contractor shall, with the Contractor's application, submit evidence from Environment Canada in support to such application. Extension of Contract Time will be granted in accordance with Subsection GC3.06, Extension of Contract Time.

Subsection GC3.07 is amended by the addition of the following paragraph:

- 04) The Contractor shall not have any claims for compensation or damages against the Corporation for any stoppage or delay from any cause whatever, whether such stoppage or delay shall be caused by or result from the action or neglect of any other contractor, or shall be caused by or result from the work being out of the hands of the Contractor, or any other contractor, by the Corporation under the provisions of this Contract made with such other contractor.

GC3.08 Assignment of Contract

Subsection GC3.08 is amended by the addition of the following paragraph:

- 02) No assignment of this contract in whole or in part shall be valid unless it shall contain a provision that the funds to be paid to the assignee under the assignment are subject to the prior lien for services rendered or material supplied for the performance of the work called for in the

Contract in favour of persons, firms, or corporations rendering such services or supplying such materials.

GC3.10.01 Changes in the Work

Paragraph 03) of Subsection 3.10.01 is deleted and replaced by the following:

- 03) The valuation of additions to, and deductions from the Contract shall be made as follows:
- a) The prices in the Schedule of Prices shall apply where appropriate as determined by the Contract Administrator.
 - b) If the prices in Clause (a) are not appropriate, valuation will be made by one of the following methods:
 - i] Contract Administrator may ask the Contractor for a Quotation for the proposed work.
 - ii] If the Quotation referred to in [i] above is not accepted by the Contract Administrator, the actual cost of the work will be determined on a Time and Material Basis in accordance with the OPS General Conditions, Supplementary General Conditions, Project Specifications and Special Provisions.
 - c) Whenever extra work is being performed under Subsection (b) (ii) above, the Contractor shall submit daily reports in writing, to the Contract Administrator, indicating the total chargeable costs incurred, for the day. Valuation of the extra work being so performed will be made by the Contract Administrator on the basis of approved daily reports.

SECTION GC4 - OWNER'S RESPONSIBILITIES AND RIGHTS

GC4.02 Approvals & Permits

Paragraph 01) is deleted.

Paragraph 02) is deleted and replaced with the following:

- 02) The Contractor shall obtain and pay for all permits, licences and certificates solely required for project approval.

GC4.04 Construction Affecting Railway Property

Paragraph 01) of Subsection GC4.03 is deleted and replaced by the following:

- 01) When construction affects railway property, the Contractor will pay the costs of all flagging and other traffic control measures required and provided by the railway company within the Working area.

GC4.06 Contractors Right to Correct Default

Paragraphs 01), 02) and 02)(a) of Subsection GC4.06 are amended as follows:

- 01) change reference from five [5] to three [3] full working days.
02) change reference from five [5] to three [3] full working days.
02)(a) change reference from five [5] to three [3] full working days.

Section GC4 is amended by the addition of a new Clause, GC4.14, as follows:

GC4.14 Personnel Employed by Contractor

- 01) The Contractor shall not employ or hire any Town employees.

SECTION GC6 - INSURANCE, PROTECTION AND DAMAGE

GC6.01 Protection of Work, Persons and Property

Subsection 6.01 is amended by the addition of the following paragraph:

- 06) When carrying out excavation work, the Contractor may encounter such underground utilities as sewers, gas mains, telephone cables, power cables, and watermains. The Contractor shall be fully responsible for any breakage or damage to such utilities, and the Contractor shall pay the full cost of repairing such damage and making good any losses or damages which are caused as a result of his operation in carrying out this Contract.

GC6.03.02 General Liability Insurance

The first sentence of paragraph 01), of Clause GC6.03.02 is amended as follows:

- 01) General Liability Insurance shall be in the name of the Contractor, with Her Majesty the Queen in right of Ontario, her Majesty the Queen in right of Canada, the Owner, the Contract Administrator and all subcontractors named as additional insureds,”.

Add Paragraphs 08) 09) and 10)

- 08) The general liability insurance policy shall include a cross liability clause and contractual liability coverage.

- 09) Prior to the commencement of any work under this Contract the Contractor shall file with the Contract Administrator, Certificates evidencing full compliance with the above clauses.
- 10) It shall be the duty of the Contractor to fully comply with the terms and conditions of the Liability Insurance coverage, including, without limiting the generality of the foregoing, the requirement to promptly report claims to the Insurer.
- 02) The Contractor shall also promptly notify the Contract Administrator of all such claims in writing.
- 03) If a claim is settled, the Contractor shall thereupon provide the Contract Administrator with a copy of the Claimant's Release.
- 04) If a claim is rejected, the Contract Administrator shall be notified at the time of rejection.
- 05) The Contract Administrator shall be provided full information as to such claims at all times as the Contract Administrator may require and in any event should 30 days elapse after the claim has been received by the Contractor and the Contractor is not able to report settlement or rejection of the claim, the Contractor will provide a full report to the Contract Administrator as to the status of and steps being taken with respect to the claim.

GC6.04 Bonding

Paragraph 01) and 02) of Subsection GC6.04 are deleted and replaced by the following:

- 01) The Contractor, together with a Surety Company approved by the Owner and authorized by law to carry on business in the Province, shall furnish a 50% Labour and Materials Payment Bond to the Owner using CCA Document(s) 22. The Bond shall remain in effect until 12 months after the date the Contract Administrator accepts the entire work.
- 02) The Contractor, together with a Surety Company, approved by the Owner and authorized by law to carry on business in the Province in which the work is to be performed, shall furnish a Performance Bond to the Owner using CCA Document(s) 21 in the amount of 100% of the contract price. The Bond shall unconditionally guarantee the performance of the contract, shall be at the expense of the Contractor, and shall remain in effect until 12 months after the date of the Certificate of Total Performance of the work.

SECTION GC7 - CONTRACTOR'S RESPONSIBILITIES AND CONTROL OF THE WORK

GC7.01 General

Paragraph 02) of Subsection 7.01 is deleted and replaced with the following:

- 02) The Contractor shall commence the Work within 14 days after receiving Notice from the Contract Administrator. The Contractor will not commence the work until the contract has been officially accepted by the Corporation, the Insurance Certificates and the Performance and Labour and Material Payment Bonds are satisfactory to the Corporation, and the Contractor has received Notice from the Contract Administrator to commence the work.

Paragraph 16) of Subsection GC7.01 is deleted and replaced with the following:

- 16) The Contractor shall arrange with the appropriate utility authorities for the stake out of all-underground utilities and service connections, which may be affected by the Work. The Contractor shall be responsible for any damage done to the underground utilities and the service connections by the Contractor's forces during construction. The Contractor shall attend such meetings with the Contract Administrator and the utility authorities for each utility affected by the Contract. The Contractor shall notify the local gas authority at least 48 hours in advance of the commencement of any work, which may affect pipes belonging to the gas utility company.

Subsection 7.01 is amended by the addition of the following paragraphs:

- 17) To co-ordinate the work, the Contractor or a person authorized to act for the Contractor will attend regular meetings with the Contract Administrator or his representative during the period over which the work under the contract is carried out, at a time and place to be decided by the Contract Administrator.
- 18) The Contractor shall install at its own expense all sheeting and shoring required to support trenches or to protect existing structures or works. The Contractor is responsible for obtaining the certificates by a Professional Engineer that all shoring will meet Ministry of Labour safety requirements. Evidence of such certification shall be provided to the Contract Administrator.
- 19) The Contractor shall provide for efficient drainage of all sections of the work during all stages of construction at his own expense. The Contractor will be responsible for all damage which may be caused through his failure to provide proper drainage facilities. The Contractor shall restore any existing drainage works which are disturbed as a result of his construction activities.

- 20) In order to assist the Corporation in inspecting the progress of the work, the Contractor shall prepare a Schedule of Work prior to starting the contract and shall revise the schedule weekly for any changes throughout the contract.

GC7.02 Layout

Subsection GC7.02 is amended by the addition of the following:

- 09) The Contractor will give the Contract Administrator at least 48 hours notice in writing before requiring any levels, lines, or stakes, in connection with the work. The Contractor shall clearly state in such notice the exact location where levels, lines, or stakes are required. The Contractor must satisfy himself before commencing work as to the meaning and correctness of all stakes and marks, and no claim will be entertained by the Corporation for or on account of any alleged inaccuracies, unless the Contractor notified the Contract Administrator of such inaccuracies in writing before commencing the work.
- 10) The Contractor shall provide the layout for all contract work unless otherwise noted. The Contractor shall supply one copy of all the alignment and grade sheets to the Contract Administrator.

GC7.06 Condition of the Working Area

Subsection GC7.06 is amended by the addition of the following paragraphs:

- 02) Streets beyond the limits of the work and other construction areas shall be kept clean. Dusty materials shall be transported in covered haulage vehicles. Wet materials shall be transported in suitable watertight haulage vehicles.
- 03) The Contractor shall take such steps as may be required to prevent dust nuisance resulting from its operations either within the limits of the work or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a roadway through the Work.
- 04) 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.
- 05) Permitted dust control measures may include the application of calcium chloride, oil or water. In general, the use of calcium chloride and oil shall be kept to a minimum and is restricted to vehicle rights-of-way - more frequent applications of water in close proximity to watercourses. The Contract Administrator's acceptance shall be obtained before chemicals or oil for dust control are used.

GC7.07 Maintaining Roadways and Detours

Paragraph 07) of Subsection GC7.07 is deleted and replaced by the following:

- 07) The Contractor will bear the cost of maintaining, in a satisfactory condition for traffic, a road through the working area. The road through the Work will include any detour constructed in accordance with the Contract Documents or required by the Contract Administrator. Compensation for all labour, equipment and materials to do this work and to maintain the road, shall be considered to be included in the prices bid for the various tender items and no additional payment will be made.

Paragraph 07) and 08) of Subsection GC7.06 is deleted and replaced by the following:

Subsection 7.07 is amended by the addition of the following paragraphs:

- 12) In order to satisfy the Corporation that the Contractor has addressed concerns regarding traffic control and safety it will be required to submit a sketch indicating its proposed method of barricades and/or signage for each of the work sites included in the Contract per the Ontario Traffic Manual, Book 7 requirements. This information shall be available for review and approval by the Contract Administrator at the Contract pre-construction meeting.
- 13) Prior to shutting down operations for the day, the Contractor shall ensure that 2 lane traffic is reinstated to accommodate overnight traffic.

GC7.10 Suspension of Work

Subsection GC7.10 is amended by the addition of the following paragraphs:

- 02) The Contract Administrator may stop any portion of the Work, if in his judgement the weather is such as to prevent the Work from being properly done. No compensation of any kind will be made for such stoppage except an extension of time for the completion of the Work as provided in GC3.07.
- 03) The Contractor shall, upon written notice from the Contract Administrator, discontinue or delay any or all Work of base, foundation, or paving construction on any section of any road or highway, if in the opinion of the Contract Administrator, the foundation is not sufficiently compacted or settled for surfacing of the Work in question, and the Work shall not be resumed until the Contract Administrator shall in writing so direct, and the Contractor shall not be entitled to any compensation for such stoppage or delay to the Work, other than an extension of time.

GC7.12 Notices by the Contractor

Subsection GC7.12 is amended by the addition of the following paragraphs:

- 03) The Contractor shall notify the local gas authorities at least 48 hours in advance of the commencement of any work which may affect pipes belonging to the gas utility company.
- 04) Spills or discharge of pollutants or contaminants under the control of the Contractor, and spills or discharges of pollutants or contaminants that are a result of the Contractor's operations that cause or are likely to cause adverse effects shall forthwith be reported to the Contract Administrator.

Such spills or discharges and their adverse effects shall be as defined in the Environmental Protection Act R.S.O. 1990, Chapter E.19. All spills or discharges of liquid, other than accumulated rainwater from luminaires, internally illuminated signs, lamps and liquid type transformers under the control of the Contractor, and all spills or discharges from this equipment that are a result of the Contractor's operations shall, unless otherwise indicated in the Contract, be assumed to contain PCB's and shall forthwith be reported to the Contract Administrator. This reporting will not relieve the Contractor of his legal or contractual responsibilities regarding such spills or discharges.

GC 7.18 Drainage

Subsection GC 7.18 is deleted and replaced with the following:

The Contractor shall provide for efficient drainage of all sections of the work during all stages of construction at his own expense. The Contractor will be responsible for all damage which may be caused through his failure to provide proper drainage facilities. The Contractor shall restore any existing drainage works which are disturbed as a result of his construction activities.

SECTION GC8 - MEASUREMENT AND PAYMENT

GC8.02.02 Advance Payments for Material

Subsection GC8.02.02 is deleted and replaced by adding the following paragraph:

The Corporation will not make advance payments for material under this Contract.

GC8.02.03.01 Progress Payment Certificates

Paragraph 03) of Clause 8,02.03.01 is deleted and replaced with the following:

One copy of each progress payment certificate shall be delivered by the Contract Administrator to the Contractor. The Contractor shall present to the Contract Administrator one copy of the estimate certified to be correct. Upon receipt of the progress payment certificate verified as aforesaid and upon its approval by the Contract Administrator, the Owner will process the payment to the Contractor.

Subsection 8.02.03.01 is amended by the addition of the following paragraphs:

- 05) Notwithstanding Paragraph 04) the Owner may withhold any or all payments to the Contractor or portion thereof in circumstances where the Contractor is considered by the Owner or Contract Administrator to be unreasonably in default of specified times for completion of the Work.
- 06) The Contractor shall furnish the Contract Administrator with satisfactory evidence in the form of a WSIB Certificate of Clearance that he has made suitable provision for meeting any liability under The Workman's Compensation Act of Ontario, prior to the release of any monthly progress payment.
- 07) The Contractor shall furnish the Contract Administrator with a Statutory Declaration that all liabilities incurred by the Contractor and its sub-contractors in carrying out the Contract have been discharged and that all liens in respect of the Contract have expired or have been satisfied, discharged or provided for by payment. The Statutory Declaration shall be provided prior to all monthly progress payments except the first one.

GC8.02.03.03 Sub-contract Statutory Holdback Release Certificate and Payment

Sub-section 8.02.03.03 is amended by the addition of the following paragraph:

- 05) If any lien is registered or if the Town receives notice of any claim for lien, then the Town may hold back from the money due to the Contractor hereunder, in addition to the normal statutory lien holdback, sufficient monies to cause a discharge or vacation of the registration of any such lien or any certificate of action relating thereto and to indemnify it completely against such lien or claim for lien or proceedings arising therefrom and from all expenses and costs related thereto, including, but not limited to, legal fees and disbursements on a solicitor and client basis.

GC8.02.03.08 Interest

Subsection 8.02.03.08 is deleted and replaced with the following:

- 01) The Owner is not liable to pay interest on any amount which may at any time become payable to the Contractor under this Contract whether or not the payment is in default and whether or not any action or other proceeding has been commenced in respect thereof.

GC8.02.03.09 Interest for Late Payment

Subsection 8.02.03.09 is deleted.

GC8.02.03.10 Interest for Negotiations and Claims

Subsection 8.02.03.10 is deleted.

GC8.02.04.06.02 Stand-by Time

Subsection 8.02.04.06.02 is deleted and replaced with the following:

- 01) The Owner is not liable to pay Stand-by Time for any labour or equipment rental under this Contract.

GC8.02.09 Liquidated Damages

Subsection GC8.02.09 is deleted and replaced by the following:

Time for Completion and Liquidated Damages

01) Time

Time shall be strictly of the essence of this Contract.

02) Progress of the Work and Time for Completion

The Contractor shall complete this Contract in its entirety by the completion date specified in the Tender Form.

If the time limit 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 therefor.

An Extension of Time may be granted in writing by the Contract Administrator in his or her sole discretion in the event of the Work being delayed beyond the prescribed time for completion. Such extension shall be for such time as the Contract Administrator may prescribe and the Contract Administrator shall fix the terms on which such an extension may be granted. An application for an Extension of Time shall be made in writing by the Contractor to the Owner at least 15 days prior to the date of completion fixed by the Contract. The date of

expiry of all Bonds and other Surety furnished to the Owner by the Contractor shall be extended at the expense of the Contractor.

Any Extension of Time that may be granted to the Contractor shall be so granted and accepted without prejudice to any rights of the Owner whatsoever under this Contract and all of such rights shall continue in full force and effect after the time limited in this Contract for completion of the work and whenever in this Contract, power or authority is given to the Owner or the Contract Administrator or any person to take any action consequent upon the act, default, neglect, delay, breach, 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 Owner. In the event of the Owner granting an Extension of Time, time shall continue to be deemed strictly of the essence of this Contract.

03) 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 by the completion date specified in the Tender Form or as amended by the Contract Administrator, damage 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 therefore agree that the Contractor will pay to the Owner the sum of **\$2,000** for Liquidated Damages for each and every calendar day's delay in completing the Work beyond the date of completion prescribed and it is agreed that 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 alternatives that may be available to the Owner.

The Contractor shall not be assessed with Liquidated Damages for any delay caused by Acts of God, or of the Public Enemy, Act of the Corporation, the Contract Administrator, or of any Foreign State, Fire, Epidemics, Quarantine Restrictions, Embargoes, or Delays of sub-contractors due to such causes. If the Contractor is delayed by reason of alterations or changes made under Section GC.03.11 of the General Conditions, the time of completion shall be extended as determined by the Contract Administrator in his or her sole discretion

GC8.02.10 Maintenance Security Holdback

Subsection 8.02.10 is added as follows:

- 01) In addition to any other holdback required by statute or otherwise agreed by the Parties, the Owner will retain, until expiry of the warranty referred to in GC7.15, money in the amount calculated pursuant to Paragraphs 02) and 03) hereof which money may be applied by the Owner in whole or in part in order to reimburse the Owner for losses, costs incurred or funds expended by the Owner as a result of default by the Contractor respecting the warranty obligations of the Contractor set out in the Contract.
- 02) The said holdback for warranty obligations referred to in the preceding paragraph shall be first retained by the Owner when the Contract Administrator certifies that Work to the value of 70% of the Contract Price has been performed and shall be calculated and shown as an amount to be retained in the monthly applications for payment by the Contractor in succeeding applications, commencing when the Contractor makes his first application for payment on the basis that work to the value of 70% of the Contract Price has been performed.
- 03) A Maintenance Security Holdback will be calculated in accordance with the following Table:

<u>Contract Value</u>	<u>Amount of Maintenance Security Holdback</u>
less than \$ 300,000	2% of contract value
\$300,000 - 800,000	\$10,000
\$800,000 - 1,500,000	\$15,000
greater than \$1,500,000	1% of contract value

- 04) The Maintenance Security Holdback is in addition to any other rights or remedies of the Owner in respect to the correction of the Contractor's default of the Contractor's warranty obligations.

SECTION 01000 – GENERAL REQUIREMENTS

1. GENERAL

1.1 DESCRIPTION OF WORK

The Work of the Contract includes:

The Work under this Contract includes the following:

- Removal of existing pavements and sidewalk;
- Removal, abandonment, and replacement of sanitary and storm sewers and appurtenances;
- Removal, abandonment, and replacement of watermain and appurtenances;
- Cathodic protection of watermains;
- Placing of HL4 asphalt;
- Excavation and Grading;
- Granulars;
- Steel Beam Guiderail;
- Topsoil and Hydroseed
- Concrete Curb and Gutter;

The description of the Work stated above is not, nor is it intended to be, a complete and all-inclusive "Description of Work".

1.2 LIMITS OF CONTRACT

The limits, of the Contract, are the limits of the property and/or road allowances in which the work is to be performed or is otherwise shown on the drawings

1.3 PRECONSTRUCTION MEETING

(A) Following award of the Contract and the instruction to commence the Work, the Contract Administrator will convene a preconstruction meeting with the Owner's representative, the Consultant and the Contractor, and affected utilities.

(B) The meeting agenda will include:

1. The appointment and notification of official representatives of participants in the Work;
2. Requirements for temporary facilities, site signs, offices, storage sheds, utilities, hoarding, site access and use;

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3. Health and Safety issues;
 4. Site security;
 5. The Work schedule, including the Products delivery schedule;
 6. A schedule for submission of shop drawings, samples and similar documents;
 7. A schedule for site meetings;
 8. A review of administrative procedures, including change notices, change orders, site instructions, record drawings, maintenance manuals, takeover procedures, progress claims;
 9. The appointment of inspection and testing agencies or firms; and
 10. Other items as arise at the meeting.
- (C) The Contract Administrator will arrange space and facilities for the meeting and document the responsibilities and necessary activities of the participants during construction as discussed and prepare and distribute minutes of the meeting to each attendee.

1.4 SITE MEETINGS

- (A) Provide suitable accommodation in which to hold site meetings.
- (B) Site meetings will be held on a regular schedule agreed to at the preconstruction meeting. The Owner, Consultant and Contractor will be in attendance. The purpose of these meetings is to discuss the progress of the Work and related matters including:
1. Review and acceptance of previous meeting minutes;
 2. Field observations and any problems or conflicts;
 3. Any problem that may impede Work progress and the construction schedule and corrective measures required;
 4. Revisions to the construction schedule and the Products delivery schedule; and,
 5. Review of submittal schedules.

1.5 SITE PROGRESS RECORDS

(A) Maintain, at the site, a permanent written record of progress of the Work. Make the record available to the Consultant upon request and provide him with a copy if requested. Include in the record each day:

1. the weather conditions with maximum and minimum temperatures;
2. the conditions encountered during excavation;
3. the commencement and the completion dates of the Work of each trade in each area of the Contract;
4. the erection and removal dates of formwork in each area of the Contract;
5. the dates, the quantities, and the particulars of each concrete pour;
6. the dates, the quantities, and the particulars of roofing installation;
7. the numbers and classifications of the Contractor's and the Subcontractor's tradesmen working at the site and the numbers and classifications of construction machinery and equipment and the number of hours each is operated;
8. visits to the site by the Owner, the Consultant, the regulatory authorities, the testing companies, the subcontractors and the suppliers.

When the Work commences at the site, and at monthly intervals, thereafter, provide the Consultant with each application for payment, two sets of 200 mm x 250 mm colour, glossy photographic prints of six different viewpoints of the Work. Photographs are to be taken by a professional photographer and are to show the general extent of the Work by both exterior and interior views. The Consultant will select each viewpoint.

Title each photograph at the bottom so no pertinent detail is obscured. Include in the title, the Contract name, the Contractor's name, the direction of view and the date when taken.

The copyrights to all photographs taken at the site are to be vested in the Owner.

1.6 WORK ADJACENT TO PUBLIC OR PRIVATE PROPERTY

Obtain written consent from the owner of adjacent property before proceeding with a part of the Work that necessitates entry onto such property for the underpinning of adjacent structures and where overswing of cranes may occur. Such written consent will not limit the Contractor's responsibility for property damage or personal injury.

GENERAL REQUIREMENTS

1.7 TEMPORARY CONSTRUCTION FACILITIES, SERVICES AND CONTROLS

- (A) Provide temporary facilities, services and controls required as construction aids or by regulatory authorities.

1.8 CONTRACT ADMINISTRATOR'S SITE OFFICE

- (A) Provide an insulated field office at the site for the exclusive use of the Contract Administrator. The office to include the following:
1. A minimum floor area of 48 m²
 2. Vinyl floor tile;
 3. Four opening windows with insect screens;
 4. A lockable door and screen door assembly;
 5. A plan table of 1.4 m² min. area;
 6. A drawing board of 1.4 m² min. area;
 7. A desk and three chairs;
 8. A private telephone line with telephone and message recorder;
 9. Benches to seat a minimum of four persons;
 10. A lockable, four-drawer, insulated, fire-resistant filing cabinet;
 11. A storage rack for contract drawings and survey instruments;
 12. A coat rack for a minimum of five coats;
 13. A shop drawing storage rack or cabinet;
 14. A notice board;
 15. A private sanitary facility (toilet);
 16. An appropriately sized first aid box as required by the Workers' Compensation Board and number of workers;

GENERAL REQUIREMENTS

1.9 ROADS AND TRAFFIC CONTROL

When public thoroughfares are to be closed, or traffic restricted, notify the Road Authority, the Fire Department, the Police Department, the Transit Authority and Ambulance Service, giving at least seven days notice of the closing or restriction.

Close thoroughfares or restrict normal traffic flow only with the consent of the Authorities having jurisdiction, and in accordance with their requirements.

When arterial streets are scheduled to be closed in either direction for a duration exceeding 7 days, provide detour signage as per OTM Book 7. Submit detour plan to the Contract Administrator for review.

1.10 SANITATION FACILITIES

(A) Do not use existing washroom facilities. Provide temporary sanitary facilities in accordance with the Occupational Health and Safety Act.

1.11 WATER SUPPLY

(A) Potable water from designated outlets may be used at no cost. Provide hoses as required. Obtain certification for backflow preventer for each hydrant installation. Obtain training on use of hydrant from the Municipality. Record volume of water/loads taken on daily basis and report to the Municipality. Repair any damage caused during use of existing water outlets.

1.12 ELECTRICAL POWER

(A) Provide temporary electric power as may be required at no cost to the Municipality for all construction needs

1.13 TESTING AND QUALITY CONTROL

(A) Furnish to the Contract Administrator, when requested and consistent with progress of the Work, test results and mix designs specified in the Contract Documents or required by bylaws, statutes and regulations relating to the Work and the preservation of public health.

(B) Unless otherwise noted, the Contract Administrator will select and the Owner will pay for the services of a testing agency or laboratory for tests that are required but not specified, other than tests required by bylaws, statutes and regulations applicable to the Work.

GENERAL REQUIREMENTS

- (C) Remove and replace Products indicated in inspection and test reports as failing to comply with the Contract Documents.
- (D) Correct improper installation procedures reported in the inspection and test reports.
- (E) Pay the costs for the re-inspection and testing of replaced work.
- (F) It is not the responsibility of the inspection and testing agents to supervise, instruct in current methods, or accept or reject a part of the Work, but only to inspect, test and to report conditions.
- (G) Notify the Contract Administrator and the appropriate inspection and testing agent not less than forty-eight hours prior to the commencement of the part of the Work to be inspected and tested.
- (H) Ensure the presence of the authorized inspection and testing agent at the commencement of the part of the Work specified to be inspected or tested.
- (I) Ensure the inspection and testing reports are issued promptly (normally within forty-eight (48) hours), and that the Contract Administrator is notified forthwith if the report indicates improper conditions or procedures.
- (J) Cooperate with and provide facilities for the inspection and testing agents to perform their duties.
- (K) Provide proper facilities for the storage of concrete specimens at correct temperature, free from vibration or damage in accordance with the instruction of the inspection and testing agent and the governing standard.
- (L) Submit four copies of each laboratory test report, unless specified otherwise, each copy signed by a responsible officer of the inspection and testing laboratory. Each report is to include:
 - 1. Date of issue;
 - 2. Contract name and number;
 - 3. Name and address of inspection and testing company;
 - 4. Name and signature of inspector or tester;
 - 5. Date of inspection or test;

GENERAL REQUIREMENTS

6. Identification of the Product and Specification section covering inspected or tested Work;
 7. Location of the inspection or the location from which the tested Product was derived;
 8. Type of the inspection or test;
 9. The remarks and observations on compliance with the Contract Documents.
- (M) Correct defective work within the Contract Time; the performing of such work is not a cause for an extension of the Contract Time.

1.14 CODES AND STANDARDS

- (A) In the case of a conflict or discrepancy between the Contract Documents and the governing standards, the more stringent requirements apply.
- (B) Unless the edition number and date are specified, the reference to the manufacturers and published codes, standards, and specifications are to the latest edition published by the issuing authority, current at the date of tender closing.
- (C) Reference standards and specifications are quoted in this Specification to establish minimum standards. Work in quality exceeding these minimum standards conforms to the Contract.
- (D) Where reference is made to a manufacturer's direction, instruction, or specification it is deemed to include full information on storing, handling, preparing, mixing, installing, erecting, applying, or other matters concerning the Products pertinent to their use and their relationship to the Products with which they are incorporated.
- (E) Where reference is made to regulatory authorities, it includes all authorities who have, within their constituted powers, the right to enforce the laws of the Place of Work.

1.15 LABOUR, PRODUCTS AND WORKMANSHIP

- (A) Products, named in the Specifications or on the Drawings by manufacturer's name and model number, establish the size, quality and performance standards for the Work. In most cases, alternate manufacturers' Products are listed as acceptable for the named manufacturer's Product. Base the Tender Price on the named manufacturers Product or the Product of an alternate manufacturer. If no alternate manufacturers are listed, base the tender price on the named manufacturer's Product.

GENERAL REQUIREMENTS

- (B) The Work has been designed based on the named manufacturer's Product. If the tender price is based on an alternate, acceptable, manufacturer's Product, ensure the alternate, acceptable manufacturer's Product is equivalent in size, quality and performance to the named manufacturer's Product. Include in the tender price for any modifications to the Work necessary to accommodate the alternate, acceptable manufacturer's Product and submit for the Contract Administrator's review a dimensioned layout of the space into which such Product is to be installed.
- (C) Give preference to the hiring of local workers, provided they are available and physically fit and qualified by training and experience to perform the Work. The foregoing does not apply to Superintendent, Timekeeper, Supervisor and construction equipment and machine operators, or until ten days after the commencement of the Work. Make available at all reasonable times for examination by the Owner, the labour rolls for the determination of the domicile of the workers.

1.16 SUBMITTALS

- (A) Unless otherwise noted, make submittals to the Contract Administrator for review.
- (B) Make submittals with reasonable promptness and in an orderly sequence to avoid any delay in the Work. Failure to submit in ample time is not considered cause for an extension of Contract Time, and no claim for extension by reason of such default will be allowed.
- (C) Do not proceed with Work affected by submittals until review is complete.
- (D) The Contractor's responsibility for errors and omissions, for providing the specified Products and for the construction of the Work in accordance with the Contract Documents is not relieved or diminished in any way by the Contract Administrator's review of submittals.

1.17 SCHEDULES

- (A) Within fourteen (14) days of the written notification of tender acceptance, submit for the Contract Administrator's review, the following schedules:
 - 1. A construction schedule;
 - 2. A submittal schedule for shop drawings and Product data sheets;
 - 3. A submittal schedule for samples and;
 - 4. A Product delivery schedule

GENERAL REQUIREMENTS

- (B) Prepare each schedule in the form of a horizontal bar chart, with a separate bar for each trade or operation, and a time scale identifying the first work day of each week.
- i. the construction time shown on the initial schedule shall not extend beyond the specified Contract completion date. The construction schedule shall include all non-working periods and appropriate allowances for inclement weather.
 - ii. the Contractor shall select the activities so that the work is identifiable, and the progress of each activity can be determined. At a minimum, each trade and operation shall be identified on the schedule. The Municipality reserves the right to limit or increase the number of activities on the diagram.
 - iii. Each activity in the initial and updated construction schedules shall include a description of the operation and the number of days allocated or actually used for it. When the duration of an activity is dependent on weather conditions, the number of days allocated shall include an allowance for normal frequency of inclement weather. When the activity has an associated tender item quantity, the approximate quantity shall also be shown.
 - iv. The construction schedule shall show the sequence and interdependence of all activities required to complete the work under the Contract. All network connections used to create a logical schedule and the corresponding durations shall be shown. The time scale of the construction schedule may be divided into days or weeks.
- (C) Consult with the Contract Administrator during preparation of the schedules; make any corrections agreed to during the review period, and issue final copies to the Contract Administrator.
- (D) Periodically, update each schedule during the course of construction and issue revised copies.
- (E) If the progress of any part of the construction falls behind schedule, immediately notify the Contract Administrator in writing giving the reason for the delay and the action to be taken to regain the construction schedule to complete the Work at the Contract Time.
- (F) The Contractor shall not be permitted to start work until the Contract Administrator receives a construction schedule, in conformance with the contract.
- (G) If, for any reason, the Contractor cannot produce an acceptable construction schedule within 30 business days of initial submission of the construction schedule, the Contractor shall be in default of the contract.

GENERAL REQUIREMENTS

1.18 SHOP DRAWINGS AND PRODUCT DATA

- (A) Submit the shop drawings and Product data sheets as specified in sections of the Specification.
- (B) Show on the shop drawings the Products, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for proper performance of the Work. Where Products attach or connect to other Products, indicate that such items have been coordinated, regardless of the Section under which the various products have been specified. Identify by cross reference to design drawings and Specifications.
- (C) Product data sheets are defined as manufacturer's catalogue sheets, brochures, literature, technical data, performance charts and diagrams and similar data used to illustrate quality, characteristics, capacity and performance of the specified, manufactured Products.
- (D) Submit one clear and legible sepia print or AutoCAD disk and one white print of each shop drawing.
- (E) Submit a minimum of six (6) copies of Product data sheets for each item.
- (F) The Contract Administrator will review the shop drawings and Product data sheets and will indicate his review status by stamping shop drawings and product data sheets copies as follows:
 - 1. "Reviewed" or "Reviewed as Noted" – If the Contract Administrator's review of a shop drawing or Product data sheet is final, the Consultant will stamp the shop drawing or Product data sheet "Reviewed" or "Reviewed as Noted" (appropriately marked) and keep his own required number of copies. The sepia or AutoCAD disk and one white print will be returned to the Contractor.
 - 2. "Revise and Resubmit" – If the Contract Administrator's review of a shop drawing or Product data sheet is not final, the Contract Administrator will stamp the shop drawing or Product data sheet "Revise and Resubmit", mark the submission with his comments, keep one copy for his records, and return the sepia and a marked print to the Contractor. Revise the shop drawing or Product data sheet in accordance with the Contract Administrator's notations and resubmit.
- (G) The shop drawings and the Product data sheet reviews do not authorize changes in cost or time. Changes involving cost or time are authorized only by a signed change order.

GENERAL REQUIREMENTS

- (H) It is understood that the following is to be read in conjunction with the wording on the Contract Administrator's shop drawing review stamp applied to each and every data sheet or drawing submitted:

"This review by the Contract Administrator is for the sole purpose of ascertaining general conformance with the Contract design concept. This review does not mean that the Contract Administrator approves the detail design inherent in the shop drawings, responsibility for which remains with the Contractor, and such review does not relieve the Contractor of the responsibility for errors or omissions in the shop drawing or of his responsibility for meeting all requirements of the Contract Documents. Be responsible for confirming and correlating dimensions at the Place of the Work, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the work of all subtrades."

1.19 SAMPLES

- (A) Submit, in duplicate unless otherwise noted, samples as specified in Specification sections. Label samples as to origin and intended use in the Work.
- (B) Deliver samples prepared to the Contract Administrator's business address or testing company as directed.
- (C) Notify the Contract Administrator in writing, at the time of submission, of any deviations in samples from requirements of the Contract Documents and state the reason for such deviations.
- (D) Adjustments made on samples by the Contract Administrator are not intended to change the Contract Price. If adjustments affect the value of the Work, state such in writing to the Contract Administrator prior to proceeding with the Work.
- (E) Make changes in samples, which the Contract Administrator may require, consistent with the Contract Documents.
- (F) Where changes or modifications of the Products for which samples are submitted are required, resubmit samples embodying the required changes or modifications.
- (G) Where colour, pattern or texture is a criterion, submit a full range of samples.
- (H) Reviewed samples will become the standard of workmanship and material against which the performed Work will be verified and accepted.

GENERAL REQUIREMENTS

1.20 RECORD DRAWINGS

- (A) When work begins at the site, obtain from the Contract Administrator a white print set of the Contract Drawings.
- (B) Record on the white prints on a daily basis, work constructed differently than shown on the Contract Documents. Record all changes in the Work caused by site conditions, or originated by the Municipality, the Contract Administrator, the Contractor, or a Subcontractor and by addenda, supplemental drawings, site instructions, supplementary instructions, change orders, correspondence, and directions of regulatory authorities. Accurately record the location of concealed mechanical services and electrical main feeders, junction boxes and pull boxes. Do not conceal critical Work until its location has been recorded. Do not use these drawings for daily working purposes and make the set available for periodic inspection by the Contract Administrator.
- (C) Make records in a neat and legibly printed manner with a non-smudging medium.
- (D) Dimension the installed locations of concealed service lines on the site or within the structure by reference from the centre line of the service to structure column lines or other main finished faces or other structural points easily identified and located in the finished Work.
- (E) Submit record drawings to the Contract Administrator for review.

1.21 MEASUREMENTS FOR PAYMENT

- (A) Notify the Consultant sufficiently in advance of operations to allow required measurements for payment. Unless otherwise specified, measurements will be taken in the horizontal plane.

1.22 WARRANTY INSPECTION

- (A) The Contract Administrator will arrange and conduct with the Municipality and the Contractor a warranty inspection at the site prior to expiration of the one-year warranty period.

1.23 HOURS OF WORK

- (A) All work shall be scheduled and carried out within sunrise and sunset unless otherwise approved by the Contract Administrator.

GENERAL REQUIREMENTS

- (B) No work on Sundays or Statutory Holidays unless specifically approved by the Contractor Administrator.

1.24 RESTORATION OF WORK SITES

Meet interval milestones on cleanup of work sites as follows:

(A) Paving Projects

- 1) Apply base paving within two (2) weeks of final grading (subject to any curb and gutter work).

(B) Sewer and Water Projects

- 1) Provide suitable backfill and grading to allow property access within one (1) week after pipe installations.
- 2) No more than two (2) successive blocks under construction without curbing or final grading work underway.

(C) Regulatory Signs

- 1) At no point will open streets be left without proper regulatory signs (i.e., stop signs) in place.

Failure to meet interim cleanup schedules will result in the Municipality stopping the workflow to other sites/blocks or otherwise calling a default on the work progress.

1.25 CONTRACTOR COMMUNICATION

The successful Contractor must provide the City Administration with a valid email account. It is expected that this email account is checked periodically and a reply will be received before the end of the following business day.

ENVIRONMENTAL PROTECTION

SECTION 01561 - ENVIRONMENTAL PROTECTION

1. INTENT

The Section covers the work for environmental protection, including the management and disposal of excess materials, control of water in dewatering, temporary erosion control measures, and the use of explosives.

2. EXECUTION

2.1 MANAGEMENT AND DISPOSAL OF EXCESS MATERIALS

OPSS 180

2.2 DEWATERING OF PIPELINE, UTILITY AND ASSOCIATED STRUCTURE EXCAVATION

OPSS 517

Prior to doing any work on the shoreline or in the water body, the Contractor must first apply for and receive a work permit from the Ministry of Natural Resources.

2.3 CONTROL OF WATER FROM DEWATERING OPERATIONS

OPSS 518

2.4 TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES

OPSS 805, except the following:

- i. The Municipality reserves the right to require the Contractor to provide a formal temporary erosion and sediment control plan prior to the commencement of construction.
- ii. All temporary erosion and sediment control measures shall be installed prior to the commencement of construction.
- iii. Catch basin sediment control devices to be installed at all catch basins within construction area. Additional catch basin sediment control devices may be required at catch basin locations downstream from construction zone as directed by the Contract Administrator.
- iv. The following OPSD's are referenced as applicable for temporary erosion and sediment control measures: 219.110 (Light Duty Silt Fence Barrier), 219.130 (Heavy Duty Silt Fence Barrier), 219.180 (Straw Bale Flow Check Dam), 219.210 (Rock Flow Check Dam V-Ditch), and 219.211 (Rock Flow Check Dam Flat Bottom Ditch).

ENVIRONMENTAL PROTECTION

- v. Payment for these works, including sediment removal, installation, inspection, maintenance, and removal of these works shall be included in the tendered prices for items in the Contract which require the temporary works.

OPSS 805, except that payment for these works shall be included in the tendered prices for items in the Contract, which require the temporary works.

2.5 SITE WORKING AREAS

Confine operations to limits of the site working area shown on Drawings.

Provide access roads to the site working area and on the site in locations shown or otherwise acceptable to the Contract Administrator.

Install fencing, suitable to the Engineer, to clearly define the working limits to the site working area, haul routes, parking areas, access routes and maintenance areas to ensure all activity is confined to these areas.

Provide interim site drainage for street under construction. Take responsibility for erosion that occurs during construction operations.

2.6 REFUELING

Carry out all equipment maintenance and refuelling out so as to prevent the entry of petroleum products into the ground or watercourses at all times.

2.7 NOISE EMISSIONS

Control noise emission from equipment and plant to local authorities' noise emission requirements.

2.8 DUST CONTROL

Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

2.9 ARCHAEOLOGY

During the performance of the work, have regard to the requirements of the Ontario Heritage Act, RSO 1980, Chapter 59, and the Cemeteries Act; RSO 1980, Chapter 337.

ENVIRONMENTAL PROTECTION

If any archaeological and historical resources are discovered during the performance of the work, the performance of the work in the area of the discovery is to halt. Notify the Ministry of Citizenship, Culture and Recreation, Archaeology & Heritage Planning Branch, for an assessment of the discovery. Do not resume work in the area of the discovery until cleared to do so by the Ministry.

2.10 SITE RESTORATION

In general, restore the site to conditions equal to or, if specified elsewhere, to a condition better than existing conditions.

Restore lands outside of the limits of the Work, which are disturbed by the Work to their original condition.

2.11 SPILLS REPORTING

In the event of a spill or other emission of a pollutant into the natural environment, every person responsible for the emission of who causes or permits it must forthwith notify:

- a) the Ministry of Environment (Tel. 1-800-268-6060);
- b) the municipality or the regional municipality within the boundaries of which the spill occurred;
- c) the owner of the pollutant, if known;
- d) the person having control of the pollutant, if known; and
- e) the Contract Administrator of the spill, of the circumstances thereof, and of the action taken or intended to be taken with respect thereto.

2.12 CONTINGENCY PLAN

Prior to commencing construction, prepare a contingency plan for the control and clean up of a spill. Submit for the Contract Administrator's review and the review of other responsible Parties a copy of the Contingency Plan and make appropriate changes to it based on review comments received. The plans shall be reviewed at the pre-construction meeting. The contingency plan shall include:

- a) the names and the telephone numbers of the persons in the local municipalities to be notified forthwith of a spill;

ENVIRONMENTAL PROTECTION

- b) the names and the telephone numbers of the representatives of the fire, the police and the health departments of the local municipalities who are responsible to respond to emergency situations;
- c) the names and the telephone numbers of the companies experienced in the control and cleanup of hazardous materials that would be called upon in an emergency involving a spill;
- d) the Contractor's proposal for the immediate containment and control of the spill, the cleanup procedures to be initiated immediately and any other action to be taken to mitigate the potential environmental damage while awaiting additional assistance; and
- e) the name and the office and home telephone number of the Contractor's representative responsible for preparing, implementing, directing, and supervising the contingency plan.

2.13 PROTECTION OF TREES

2.13.1 Definitions

Tree Protection Zone

The Tree Protection Zone shall be the area within the drip zone of any trees within or adjacent to the limits of the Contract, not designated for removal under the Contract.

The minimum Tree Protection Zone will be the area within a 3.0 m radius of the centre of a tree.

2.13.2 Protection Required with Tree Protection Zones

- (i) Protect tree zone with 25 x 150 x 2,440 mm board, with a double wrap of snow fence or approved equal.
- (ii) In designated areas, install snow fence along the limits of the Protection Area.
- (iii) Operate equipment to prevent damage to trees; do not permit heavy equipment to travel over Protection Areas.
- (iv) Do not locate stockpiles, surplus excavated material, or construction materials within Protection Areas.
- (v) Where construction operations must impact Protection Areas, prune the trees in advance. Cut roots with clean severances.
- (vi) Excavations within Protection Areas shall be carried out using low impact methods such as vacuum excavation or directional drilling, unless otherwise specifically authorized by the Contract Administrator.

ENVIRONMENTAL PROTECTION

2.13.3 Tree Pruning (includes Root Pruning)

Where tree pruning is required and the Contractor is authorized to carry out the pruning, the following specification applies:

Pruning – Comply with ANSI Specification A300

Pruning Guidelines:

- Prune to provide a vertical clearance of 4 m over streets, 2.5 m over sidewalks
- Temporarily tie back branches in lieu of pruning where practical
- Avoid pruning limbs greater than 10 cm in diameter, where practical, except for dead limbs
- Carry out pruning between late winter and early fall except for silver maple and white birch, which shall not be pruned until after the leaves are formed and American elm which shall not be pruned between April 1 and July 31

2.13.4 Damaged Trees

Notify the Contract Administrator of any damage to trees.

Provide remedial action to damaged trees using a qualified tree service

Submit the remedial program recommended by the tree service to the Contract Administrator, for approval, before carrying out the work.

If a tree is damaged beyond repair, replace the tree with two trees. The Contract Administrator will determine the species of the replacement trees.

Deciduous trees shall have a minimum diameter of 40 mm measured at a point 30 cm above the root ball or finished grade and be a minimum of 2 m in height. Coniferous trees shall be balled or wrapped in burlap and be a minimum of 1.8 m in height measured from the top of the root ball.

Plant and maintain trees in accordance with Section 02530.

2.14 SITE CLEARING AND PLANT PROTECTION

1. Protect trees and plants on site and adjacent properties where indicated.

ENVIRONMENTAL PROTECTION

2. Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping, and storage of materials over root zones.
3. Minimize stripping of topsoil and vegetation.
4. Restrict tree removal to areas indicated or designated by Contract Administrator.

SECTION 02510 – ROADS, SIDEWALK & APPURTENANCES

1. INTENT

This section covers the work for the construction and /or rehabilitation of hot-mix hot-laid, asphalt pavements, gravel pavements, sidewalks and walkways, curb and gutter, culverts, subdrains and other surface works.

1.1 INSPECTION AND TESTING

1.1.1 Responsibility for Testing

Provide samples of all materials for testing.

The Contract Administrator shall arrange for testing of asphalt, granular materials, and concrete. All testing will be carried out by certified testing laboratories. The Owner will pay for the services of the testing laboratory, except in cases where the samples do not meet the specifications and re-sampling and testing is required. The cost of these additional tests shall be recovered from the Contractor.

OPSS 310.08.03.01 is amended by changing “5,000 tonnes” to “500 m3”.

1.1.2 Mix Designs

Prepare and submit mix designs for asphalt and concrete together with aggregate samples to the Contract Administrator for approval thirty (30) days in advance of commencing placing of these materials.

1.2 SUBMITTALS

Prior to starting the work, documentation shall be submitted, verifying that the Contractor’s representative of the concrete curb and gutter placing crew(s) shall be onsite for the duration of the work and shall have the Ready Mixed Concrete Association of Ontario (RMCAO) Municipal Exterior Flatwork Certification or American Concrete Institute (ACI) Flatwork Certification or an approved equivalent.

2. PRODUCTS

2.1 AGGREGATES

General – OPSS 1001

Concrete Aggregates – OPSS.MUNI 1002

Asphalt Aggregates – OPSS.MUNI 1003

Miscellaneous – OPSS.MUNI 1004

Granular Base, Subbase, Select Subgrade and Backfill Material – OPSS.MUNI 1010

5/8" Crushed Stone – OPSS.MUNI 1010 with the following gradation:

<u>Sieve Size</u>		<u>Percentage Passing by Weight</u>
5/8"	(16.0 mm)	100
1/2"	(13.2 mm)	75 – 95
3/8"	(9.5 mm)	50 – 80
No. 4	(4.75 mm)	25 – 50
No. 16	(1.18 mm)	10 – 40
No. 50	(300 um)	2 – 20
No. 200	(75 um)	0 - 5

2.2 BITUMENS

2.2.1 Performance Graded Asphalt Cement – OPSS.MUNI 1101, PG 52-34

2.2.2 Hot Mix Asphalt, HL4, HL8 - OPSS 1150

2.3 PERMANENT PAVEMENT MARKINGS

Polymer Pavement Markings OPSS 1714, or

Thermo Plastic Markings OPSS 1713

2.4 PORTLAND CEMENT

OPSS 1301, Type 10

2.5 CONCRETE JOINT FILLER

OPSS 1308

2.6 CONCRETE CURING COMPOUND

OPSS 1315

White Pigmented Compound – Sealtight 1220 by W.R. Meadows, or approved equal.

2.7.1 CONCRETE PENETRATING SEALER

OPSS.MUNI 1350

Master Protect H 1000 by BASF Master Builders or approved equal

2.7 CONCRETE

OPSS.MUNI 1350

- minimum 32 MPa with 5-8% air entrainment
- exposure class C-2
- no chemical admixtures
- hot water to be used for concrete after October 15th

3. EXECUTION

3.1 RESTORING UNPAVED SURFACE

OPSS 301

3.2 PRIMING GRANULAR BASE

OPSS 302

3.3 ASPHALT SIDEWALK, BOULEVARD OR DRIVEWAY

OPSS 311

3.5 HOT-MIX HOT-LAID ASPHALT CONCRETE

OPSS 310

3.6 PREPARATION FOR PAVING

OPSS 310

Patch holes and pad depressions, in existing asphalt by hand, grader or spreader prior to paving.

Place a tack coat strip 300 mm wide along all asphalt overlays, and under any feathered layer above existing asphalt where new asphalt thickness is less than 20 mm.

Where directed by the Contract Administrator, in lieu of a tack coat strip, mill a 1.5 metre wide strip (40 mm thickness) for making the joint at the beginning and end of asphalt overlays.

Place tack coat on vertical surfaces where top course asphalt abuts curbs or gutters, or the edge of existing asphalt.

Manholes to be reset 24 hours prior to paving. Maximum 6mm grade tolerance on final paving lift between manhole cover and final surface asphalt.

3.7 GRANULAR BASE, SUBBASE, SURFACE AND SHOULDERS

OPSS 314
OPSS 501

3.8 SAWCUT ASPHALT JOINTS

Where directed by the Contract Administrator, saw cut the existing asphalt to provide a butt joint against the new pavement.

3.9 PAVING ADJACENT TO MANHOLE AND CATCHBASIN FRAMES AND COVERS, AND VALVE BOXES

Paint all frames, covers and valve boxes with fuel oil prior to paving to prevent asphalt from bonding with metal surfaces.

3.10 SETTING MANHOLE AND CATCHBASIN FRAMES AND COVERS, AND VALVE BOXES TO GRADE

Set all manhole and catchbasin frames and covers, and valve boxes to grade prior to placing of the top course of asphalt.

3.11 ASPHALT RAMPING OF MANHOLE FRAMES AND COVERS, AND VALVE BOXES

Ramp manholes and valve boxes, which project above the pavement with asphalt or cold mix to prevent damage to vehicles traveling on the street. Adjust to final grade just before the final lift is laid.

3.12 WATER

Sprinkle the granular material with water during rolling, tamping and blading, when and if, directed by the Contract Administrator to aid compaction. Apply water uniformly immediately ahead of the compacting unit.

Apply water when directed by the Contract Administrator to reduce dust nuisance.

The Owner will supply the Contractor with water, from a designated hydrant nearest the job site, at no cost. Hydrant training and compliance with Water Use Permit will apply.

Apply to the Environment Division prior to the start of construction to designate a hydrant in the area. Provide a 75 mm valve to control the water flow; do not control the flow with the hydrant valve. Install approved backflow preventer valve or provide air gap on truck fill piping.

The Owner may supply the Contractor with water from a designated hydrant nearest the job site at no cost.

Apply to the Municipality prior to the start of construction to designate a hydrant in the area. Provide a 75 mm valve to control the water flow, do not control the flow with the hydrant valve. Install approved double check valve backflow preventer valve or provide air gap on truck fill piping.

3.13 SHOULDERS

Remove all debris and deleterious material before commencing shoulder operations.

Place granular material for shoulder construction by means of a shoulder spreader. Where obstacles on the shoulder prohibit the efficient use of a spreader, place the shoulder material adjacent to such obstacles by dumping.

Commence shouldering operations after 24 hours have elapsed from the time of completion of the final bituminous pavement course in that section. Complete shoulder operations within the next 24 hours after sections are opened to traffic.

Regardless of method of placing and width of shoulders, place all shoulder material directly onto the shoulder without segregation.

Remove any spillage and material dragged onto the pavement surface without damage to the pavement.

Clear the area so affected with the use of a power broom or other suitable means.

Shape the shoulder to line, grade and cross-section as specified in the Contract drawings.

3.14 CONCRETE CURB AND GUTTER SYSTEMS

OPSS 353

When concrete curb and gutter is placed by the extrusion method, form contraction joints by saw cutting the hardened concrete within a sufficient time of placing of the curb and gutter to prevent uncontrolled cracking. Contraction joints may also be formed using a “guillotine” knife in the wet concrete.

The width of the joint shall be 3 mm to 5 mm and the depth 65 mm minimum, at 6.0 metre maximum spacing.

Retain a minimum distance of 20m between any grading or compaction operations and the placement of new curb and gutter.

3.15 BACKFILL BEHIND CURB

Backfill along the paved edge of the gutter with wet and solidly compacted Granular B fill and crushed gravel. Backfill behind curbs immediately after curing and prior to placing granular road base.

3.16 RECONSTRUCTION OF CONCRETE DRIVEWAYS AND PRIVATE SIDEWALKS

Reconstruct portions of the existing concrete driveways and private sidewalks as directed by the Contract Administrator. Provide a sidewalk or driveway equal to or better than the original construction except that in no case shall the thickness be less than 125 mm. Reinforced with M.W. 13.3/M.W. 13.3 wire, 152 mm x 152 mm, opening wire mesh. Reconstruction of private concrete sidewalks shall include the construction of steps, if required by the Contract Administrator.

3.17 ACCESS TO BUSINESSES

Maintain access to all businesses where they abut the work area.

3.18 PAVEMENT MARKINGS

OPSS 710

3.19 RECONSTRUCTION OF ASPHALT DRIVEWAYS

Remove and reconstruct driveways as shown on the Contract Drawings and as directed by the Contract Administrator. This reconstruction shall be equal to or better than the original construction. Excavate for, supply, and compact at least 150 mm Granular, and at least a 50 mm course of HL 4 asphalt concrete. Where the existing driveways have driveway sealer, the Contractor shall supply and install one (1) coat of coal tar epoxy driveway sealer.

3.20 RECONSTRUCTION OF GRANULAR DRIVEWAYS

Remove and reconstruct driveways as shown on the Contract Drawings and as directed by the Contract Administrator. This reconstruction shall be equal to or better than the original construction. Excavate for, supply, and compact at least 150 mm Granular A.

3.21 RECONSTRUCTION OF BOULEVARDS

Remove vegetation to the limits as shown on the Contract Drawings and as directed by the Contract Administrator. This reconstruction shall be equal to or better than the original construction. Excavate for, supply, and compact at least 75 mm or at least 50mm of Granular A as shown on the Contract drawings.

3.22 RECONSTRUCTION OF FENCING

Remove and reconstruct and/or permanently or temporarily relocate fencing as required to facilitate the Work. This reconstruction shall be equal to or better than the original construction.

3.23 ADJUST EXISTING MANHOLE FRAMES, CATCHBASIN FRAMES AND CURB AND VALVE BOXES

Adjust existing manhole and catchbasin frames and curb, and valve boxes to suit finished pavement grades.

Use precast concrete rings or modify masonry as necessary to adjust the grade at manhole and catchbasin frames.

If the existing item is replaced with a new frame and cover, or grate or valve box, the Municipality may supply the replacement part at no cost to the Contractor.

3.24 EXISTING SIGNS (NOT ALL THE EXISTING SIGNS ARE SHOWN ON THE DRAWINGS)

Where existing street signs, stop signs, traffic signs, etc. are to be relocated, remove the signs and, except for stop signs, place the signs on the boulevards out of the way of work so that they will not be damaged. Any stop sign, which must be removed to carry out construction, shall be relocated in an alternate position by the Contractor as directed by the Contract Administrator. Such relocation of stop signs shall be done so as not to confuse or mislead motorists. The Contractor will be back charged for the cost of any missing or damaged signs upon completion of the work.

4 MEASUREMENT FOR PAYMENT / BASIS OF PAYMENT

4.1 GENERAL

Payment for all items shall be full compensation for all labour, equipment and materials to complete the work.

4.2 HOT-IN-PLACE ASPHALT

OPSS 310, except that the Owner will be responsible for sampling and testing. Include the cost of ramping at manhole covers and valve boxes and the cost of coating of frames, covers, grates and valve boxes with diesel fuel in the unit price for this item.

4.3 RESTORING UNPAVED SURFACES

There shall be no separate payment for this item or for water for compaction of the restored surface. Include the cost for this item under Contract items for asphalt paving. Payment for additional materials shall be in accordance with OPSS 314.

4.4 TACK COAT

Include the cost for tack coat in the unit price bid for asphalt.

4.5 ASPHALT IN SIDEWALKS, BOULEVARDS AND DRIVEWAYS

Measurement shall be based on square meters of asphalt placed. Payment for this item shall include the cost of the hot-mix asphalt.

4.6 GRANULAR BASE, SUBBASE, SURFACE AND SHOULDERS

OPSS 314, except that payment for this item shall also include the application of water for compaction.

4.7 ADJUST EXISTING MANHOLE FRAMES AND COVERS, CATCHBASIN FRAMES AND GRATES, AND CURB STOP AND VALVE BOXES TO GRADE

Include the cost to excavate and adjust these items to its finished grade before top course paving under the Contract item for asphalt paving.

4.8 WATER FOR COMPACTION AND DUST CONTROL

All water, required for compaction or dust control, shall be supplied by the Corporation, from a designated hydrant at no cost to the Contractor.

4.9 EXISTING SIGNS

Include the cost to remove and dispose, remove, and relocate and remove and reinstall signs and sign supports under the Contract item for asphalt paving.

4.10 CONCRETE CURB AND GUTTER SYSTEMS

OPSS 353

4.11 PAVEMENT MARKINGS

OPSS 710

EXCAVATION AND GRADING

SECTION 02520 – EXCAVATION AND GRADING

1. INTENT

This section covers excavation, grading, filling and compaction for roads, parking lots and adjacent areas.

1.1 RELATED WORK SPECIFIED ELSEWHERE

Related work specified elsewhere includes:

Section 02530 – Landscaping

Section 02570 – Excavation and Backfill of Trenches

2. PRODUCTS

Gabion Baskets – OPSS 1430

Rip Rap, Rock Protection, Sheeting – OPSS 511

Boulevard fill must be free of stones, boulders, debris, clay or granular material.

3. EXECUTION

3.1 CLEARING AND GRUBBING

OPSS 201, except that the Contractor shall be responsible for the disposal of trees.

3.2 EXCAVATION, FILLING AND GRADING

OPSS 206

EXCAVATION AND GRADING

3.3 EXCAVATION AND FILL, EXISTING BOULEVARDS

Remove all existing vegetation as shown on the Contract Drawings and as directed by the Contract Administrator. Do not remove vegetation within the drip line of existing boulevard trees.

Removal of sod is to be paid for under the unit price tendered for the excavation item.

When directed by the Contract Administrator, dump and spread suitable excavated material on the boulevards. Remove boulders, stones, debris, and other undesirable material. Spread and rake the fill as directed by the Contract Administrator. Spread and rake the fill on the boulevards before the surface course of asphalt is placed.

3.4 REMOVAL OF EXISTING CURBS, GUTTERS, DRIVEWAYS AND SIDEWALKS

Remove the lengths of curb, gutter, sidewalk, and driveways as designated by the Contract Administrator. Dispose of all materials removed.

Saw cut the limits of the work prior to commencing the removal. Saw cutting of existing asphalt or concrete driveways should be done after the sidewalk is poured to determine proper grade. The Contractor shall cut driveways initially for rough grade for excavation and a second cut is required for final matching to grade.

Remove sidewalk foundation walls, if encountered. Ensure no damage to tree root system.

Root pruning and root curtains as specified.

3.5 GRADING BOULEVARDS

Slope boulevards to provide a uniform rising grade, 2% minimum, between the top of the curb or edge of shoulder and the property line.

3.6 MAILBOX RELOCATION

Relocate the mailboxes and posts (complete), as directed by the Contract Administrator. Mailbox relocation shall be acceptable to property owners and Canada Post.

EXCAVATION AND GRADING

4. MEASUREMENT FOR PAYMENT / BASIS OF PAYMENT

4.1 EXCAVATION, FILLING AND GRADING

OPSS 206

Include payment for fill and cut stripping of vegetation in the unit cost of excavation and granular items.

4.1.1. Water

All water required for compaction or dust control shall be supplied by the Corporation from a designated hydrant. Unless specifically indicated in the Tender Form, the Contractor shall include the cost of using water for compaction or dust control in the unit cost of excavation or granular items.

4.2 RIP RAP, ROCK PROTECTION AND GRAVEL SHEETING

OPSS 511

4.3 CLEARING AND GRUBBING

Include the cost of removal and disposal of trees and stumps 150 mm in diameter or greater, measured 600 mm above existing grade in the unit cost of the excavation item.

No payment will be made for trees that require removal, but are less than 150 mm in diameter.

4.4 REMOVAL OF SIDEWALKS, CURBS AND GUTTERS

The unit price bid for these Items shall apply both to spot removals or removals of lengthy sections, based on those sections designated to be removed by the Contract Administrator.

No additional payment shall be made for the removal of foundation walls, if found beneath existing sidewalks.

If there is no tender item for the removal of concrete curbs, sidewalks or driveways include the cost of this work in the unit price tendered for earth excavation.

4.5 BOULEVARD FILL

If suitable materials are available from excavation operations on site, the unit price bid for the excavation shall include the cost of placing, compacting and grading this material in the boulevards.

EXCAVATION AND GRADING

If imported fill is required, payment will be made under the applicable item.

4.6 RELOCATION OF PARKING METERS, MAILBOXES AND/OR SIGNS

No additional payment will be made for this work.

4.7 DITCHING

Measurement for payment will be based on the actual length of ditching or re-ditching, measured along the ditch following the contour of the ground.

SECTION 02530 – LANDSCAPING

1. INTENT

This section covers the planting of seed, sod, trees and vegetation.

1.1 REFERENCES

Agriculture and Agri-Food Canada;
The Canadian System of Soil Classification, Third Edition, 1998.

Canadian Council of Ministers of the Environment;
PN1340-2005, Guidelines for Compost Quality.

U.S. Environmental Protection Agency (EPA)/Office of Water;
EPA 832R92005, Storm Water Management for Construction Activities: Developing
Pollution Prevention Plans and Best Management Practices.

1.2 DEFINITIONS

Compost is a mixture of soil and decomposing organic matter used as fertilizer, mulch, or soil conditioner. Compost is processed organic matter containing 40% or more organic matter as determined by Walkley-Black or Loss On Ignition (LOI) test. Product must be sufficiently decomposed (i.e. stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below 50, and contain no toxic or growth inhibiting contaminants). Composed bio-solids to: CCME Guidelines for Compost Quality, Category A.

Topsoil is a mixture of mineral particulates, microorganisms and organic matter, which provides suitable medium for supporting healthy plant growth.

1.3 SUBMITTALS

At the request of the Contract Administrator, the Contractor shall make available or submit Quality Control test results a minimum of seven (7) days prior to delivery of the material. When more than one source is used for supplying materials, test data from each source and product shall be managed independently.

2. PRODUCTS

2.1 TOPSOIL

OPSS 802

Topsoil shall contain no toxic elements or growth inhibiting materials and the consistency is friable when moist. The finished surface of topsoil shall be free from; debris and stones over

50mm diameter, coarse vegetative material 10mm diameter and 100mm length occupying more than 2% of the soil volume, and couch or crabgrass rhizomes.

Topsoil shall meet the requirements of Table 1:

TABLE 1
TOPSOIL MATERIAL REQUIREMENTS:

	Minimum	Maximum
Sand ^{Note 1}	40%	65%
Silt ^{Note 1}	20%	40%
Clay ^{Note 1}	15%	25%
Organic Matter ^{Note 1}	5%	11%
pH	6.0	8.0
Available Nitrogen	20 mg/kg	40 mg/kg
Phosphorus	10 mg/kg	60 mg/kg
Potassium	75 mg/kg	250 mg/kg
Calcium, Magnesium, Sulfur, and micro-nutrients	Note 2	Note 2

Notes:

1. Soil texture based on The Canadian System of Soil Classification
2. Present in balanced ratios to support germination and/or establishment of intended vegetation.
- 3.

The following topsoil amendments are permitted as required to achieve the minimum requirements set out in Table 1:

- i. Fertilizer may be added as required. Fertilizer containing phosphorus shall only be applied subsurface, when seeding or sodding, by mixing it into the top layer of topsoil.
- ii. Organic matter: compost Category A in accordance with CCME PN1340, unprocessed organic matter, such as rotted manure, hay, straw, bark residue or sawdust, meeting the organic matter, stability and contaminant requirements.

Compost Category B may be used for landfill reclamation and large scale industrial applications.

- iii. Peat Moss:
 - Derived from partially decomposed species of Sphagnum Mosses
 - Elastic and homogeneous, brown in colour
 - Free of wood and deleterious material, which could prohibit growth
 - Shredded particle minimum size: 5 mm

- iv. Manure:
 - Well-rotted and aged a minimum of three (3) years
 - May be sheep or steer manure
- v. Mushroom Compost
- vi. Sand: washed coarse silica sand, medium to coarse textured
- vii. Limestone:
 - Ground agricultural limestone containing minimum calcium carbonate equivalent of 85%
 - Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve
- viii. Bone Meal:
 - Finely ground with a minimum analysis of 20% phosphoric acid

The Contractor shall be responsible for all Quality Control sampling and testing required to show complete conformance of the topsoil with this specification. These records shall be made available to the Contract Administrator upon request. The Municipality reserves the right to further test the material. Failed QA tests will be charged to the Contractor.

Testing shall be conducted by a qualified laboratory holding a valid certificate from Ontario Ministry of Agriculture and Food (OMAFRA) and/or Canadian Association for Laboratory Accreditation (CALA).

Quality Control test results shall indicate conformance with pH, Organic Matter, Available Nitrogen, Phosphate, and Potassium parameters listed in Table 1.

2.2 SEED AND COVER

OPSS 804

Seed mix for boulevard areas shall be 15% Kentucky Blue Grass, 20% Perennial Rye, 65% Creeping Red Fescue with an application rate of 225 kg/ha. Fertilizer shall be 8-32-16 with an application rate of 10 kg/100 sq.m and applied subsurface.

Hydraulic mulch cover.

3. EXECUTION

3.1 PLACING OF TOPSOIL

OPSS 802

Depth: 75 mm

3.2 SEED AND COVER

OPSS 804

Top dress, fertilize, and over seed all sparse areas to obtain substantial growth throughout the warranty period.

4. MEASUREMENT FOR PAYMENT / BASIS OF PAYMENT

4.1 TOPSOIL

Include the cost for all the labour, equipment, and material to execute the work in the unit bid price for reconstruction of boulevard item.

4.2 SEED AND COVER

Include the cost for all the labour, equipment, and material to do the work in the unit bid price for reconstruction of boulevard item.

4.3 CLEAR STONE

Measurement for payment shall be based on the cubic meters of material placed.

SECTION 02560 – FENCING & SIGNS

1. INTENT

This section covers the construction of fencing and signs.

2. PRODUCTS

Signs – OPSS 2001, OTM Book 2, OTM Book 6
Sign Posts and Supports– OPSS 2011

3. EXECUTION

3.1 Signs and Support Systems – OPSS 703

3.2 Reconstruction of Fencing

Remove and reconstruct and/or permanently or temporarily relocate fencing as required to facilitate the Work. This reconstruction shall be equal to or better than the original construction.

4. BASIS OF PAYMENT / MEASUREMENT FOR PAYMENT

4.1 Sign and Sign Support

Include the cost for the supply and installation of a new sign and sign support in the unit cost for the steel beam barricade item.

4.2 Reconstruction of Fencing.

Payment for the item shall be full compensation for all labour, equipment, and material to complete the work.

SECTION 02570 - EXCAVATION AND BACKFILL OF TRENCHES

1. INTENT

This section covers excavation and backfilling of trenches for the installation of underground utilities, culverts and subdrains.

2. PRODUCTS

Bedding - Compactable granular material with no stones larger than 25 mm
Crushed Stone – 100% passing a 25 mm sieve, 100% retained on a No. 4 sieve
Granular Materials – Granular A and B, OPSS 1010
Hot-Mix Asphalt – OPSS 1150
Wire Mesh Reinforcing – M.W.13.3 x M.W.13.3, wire; 152 mm x 152 mm openings
Concrete – OPSS 1350

3. EXECUTION

3.1 EXCAVATION AND BACKFILL

OPSS 401

When existing soils, undisturbed by the Contractor, are considered, by the Contract Administrator to be unstable, the Contract Administrator may order the unsuitable material to be excavated and backfilled with crushed stone.

Native material shall not be used to backfill trenches.

3.2 EXCAVATION MAY BE STOPPED

The Contract Administrator may stop the excavation and any portion of the work and require the Contractor to complete the pipe laying and backfilling up to such point as he may direct, before excavation proceeds further. The Contractor shall not be entitled to receive any allowance or compensation, other than an extension of the time of completion for as many days as the Contract Administrator may determine.

If work is stopped on the whole, or any part of a trench, and the trench is left open for any unreasonable length of time in advance of the construction of the sewer, the Contractor shall, when directed by the Contract Administrator, refill such trench or part thereof, and temporarily repave over the same, at his own cost and expense, and shall not again open such trench, or part thereof, until he is ready to proceed with the construction of the sewer. If the Contractor refuses to completely refill such trench and temporarily repave over same within 48 hours after the receipt of Notice in writing to do so, the Contract Administrator may refill and temporarily repave such trench, and the cost and expense thereof shall be charged to the Contractor.

3.3 MATERIAL TO BE EXCAVATED

Excavation shall include top soil, organic silt, peat, muskeg, clay, shale, hardpan, and all vegetation, debris, junk, brick, gravel, concrete, asphalt pavement, loose or disintegrated rock, stone or boulders 1 cubic metre or less in volume and other material encountered within the excavated limits.

Clear and grub the surface wherever necessary. Remove all excess material of whatever nature or kind. Separate the excavated material so that no broken pavement, curbs, sidewalk, boulders or other objectionable material is present in the material to be as backfill.

3.4 DISPOSAL OF EXCAVATED MATERIAL

Excess materials shall be managed following OPSS 180, and Section 01561 – Environmental Specification.

Where possible, do not place excavated material on the traveled portion of streets, access to lots, lawns, walks, driveways, etc. Cast material to one side of the trench only, unless otherwise directed.

The Contract Administrator shall be the sole judge as to the amount of excavated material, which can be stockpiled alongside the trench, and may order any or all of the excavated material removed and stockpiled.

3.5 DEWATERING

Comply with OPSS 517.

Provide sufficient pumping equipment. Do not allow water to run through the newly laid pipe.

The Municipality is not responsible for additional costs incurred by the Contractor due to leakage from existing services or utilities.

3.6 MAINTAINING FLOW IN DRAINS

Provide for and maintain the flow, where required, of all sewers, drains, ditches and gutters, house or inlet connections, and all watercourses. Do not allow the contents of any sewer, drain, house or inlet connection or watercourse to flow into the trench or the sewers to be constructed under this Contract, except where permission is given by the Contract Administrator. Remove all offensive matter from proximity of the work, using such precaution in so doing as may be directed by the Contract Administrator.

3.7 RELOCATION OR REBUILDING OF UTILITIES

Should any utility be so situated or in such condition as in the opinion of the Contract Administrator, to require its removal, realignment or reconstruction, strip, uncover, support or sustain the structure requiring removal. The work or removal, realignment or change shall be done without cost to the Contractor. There shall be no compensation for delays incurred due to the removal, realignment or change of any utility.

The Contractor shall uncover and expose other utilities in advance of the proposed new work that may require relocation.

3.8 LOWER EXISTING WATERMAINS

Provide all necessary fittings, tie rods, thrust blocks and cathodic protection. Provide 48 hours' notice prior to proceeding with the work.

3.9 RE-LAY EXISTING SANITARY SEWER AND WATER SERVICES

Where the installation of the new sewer conflicts with existing water and sewer service connections, re-lay the service connection as directed by the Contract Administrator.

3.10 BEDDING

Bedding types are shown on the drawings. Crushed stone shall not have direct contact with watermain pipe.

3.11 EXISTING ROADS, ROAD SHOULDERS, AND BOULEVARDS

Comply with OPSS 402.

Where pipes are laid beneath existing paved roads, break out the pavement so that the cut edges are vertical and straight. Any irregularities will be saw cut or milled, if required, as directed by the Contract Administrator. Wheel cutting will be permitted on base course asphalt. If a uniform edge is not obtained, re-cut asphalt prior to final paving. Take care during excavation of trenches not to undermine the portions of the existing pavement left in place.

3.12 MAINTENANCE OF TRENCHES

Maintain all trenches for a period of **one (1) year** from the date of completion. Any shrinkage or settlement during this period will be made good by the Contractor at its own expense.

3.13 ROCK EXCAVATION

Comply with OPSS 403 and OPSS 206.

Only hydraulic impact methods are acceptable.

Excavate rock trenches 3 meters beyond the end of main line sewers or structures where directed and all lateral sewer pipes. Backfill with select excavated material.

3.14 EXCAVATION, BACKFILLING, AND COMPACTION FOR SEWER AND WATER APPURTENANCES

OPSS 402

3.15 GRANULAR BASE COURSES

OPSS 314

3.16 HOT-MIX, HOT-LAID ASPHALT

OPSS 310

3.17 RESTORATION

Comply with OPSS 492.

Restore disturbed areas to a condition equal to or better than the original construction, but no less than the following:

Grassed Areas – 75 mm topsoil and seed and hydraulic mulch.

Gravelled Areas – 150 mm Granular A

Asphalt Areas – 150 mm Granular A, 50 mm HL4, coal tar epoxy seal if existing driveway is sealed

Asphalt Roads - 150 mm Granular A, 50 mm HL4 unless otherwise stated in the Contract Drawings

Concrete Driveways – 75 mm Granular B, 125 mm concrete with wire mesh reinforcing

3.18 BOULEVARD TREE ROOT PROTECTION

Provide specialized tree root protection measures and excavation methods to preserve existing boulevard trees when replacing/relaying existing sewer and water services.

Work to include, but not limited to, small excavation equipment, protective trench shoring measures, root cutting and non-evasive directional bore, pulling, jacking or sleeving of new service connection piping within the tree protection root zone.

4. BASIS OF PAYMENT / MEASUREMENT FOR PAYMENT

OPSS 401

4.1 IMPORTED GRANULAR MATERIAL

Additional payment shall be made, at the unit price bid, for imported granular material when authorized by the Contract Administrator.

4.2 RESTORATION

No additional payment shall be made for restoration except where specifically noted in the Contract documents.

Payment for surface restoration of the roads to the edge of shoulder, as detailed on the on the typical cross sections will be paid for under the applicable granular item.

4.3 CRUSHED STONE

The unit price bid for this item shall include supplying, placing and compacting of crushed stone in the trench, together with the cost of additional excavation and disposal of excess material.

Measurement for payment will be to the neat, calculated area of the widths and depths and lengths instructed to be placed.

4.4 BOULEVARD TREE ROOT PROTECTION

Include the cost to preserve existing boulevard trees and root zone protection in the items that require excavation and backfill of trenches.

No additional payment will be made for sewer and water excavation beyond the root zone or if only stump removal is necessary.

SECTION 02575 – STORM AND SANITARY SEWERS

1. INTENT

This section covers the construction of storm and sanitary sewers and appurtenances.

2. PRODUCTS

Pipe – OPSS 410, Type, class and diameter as shown on the Contract Drawings

Service Lateral Pipe – PVC SDR 28

Sanitary Laterals – 150 mm diameter

Manholes, Catchbasins and Appurtenances – OPSS 1351

Components – OPSD 701.010

Pipe to Manhole Seals – Approved Tylox Connector or approved equivalent

Manhole and Catchbasin Frames and Covers – OPSS 1850

Manhole and Catchbasin Frames and Covers – OPSS 1850

Connectors to Existing Service Laterals – Approved Romac Coupling or approved equivalent

3. EXECUTION

3.1 SEWERS

OPSS 410

Minimum grade on lateral connections – 2%.

Contractor to procure Uni-Jet Industrial Pipe Sewers to provide closed circuit television (CCTV) inspection prior to placing top course asphalt. The Municipality shall be present during the inspection.

CCTV inspection to be re-verified if defects found and corrections required.

Reconnect existing services to the new sewer, where required.

3.2 SEWER ANCHORAGE

For sanitary sewer pipe exceeding slopes of 20 degrees, provide and install concrete anchors as shown on the Contract Drawings.

3.3 FILL AND PLUG SEWERS

Fill sewers with sand, plug ends of sewers and service connections with bricks and mortar. Remove all structures to 1 metre below finished grade.

3.4 STYROFOAM INSULATION

Where, directed by the Contract Administrator or as shown on the drawings, place Styrofoam insulation.

3.5 TESTING

Testing with water and deflection testing is not required under this Contract.

3.6 MANHOLES CATCHBASINS AND APPURTENANCES

OPSS 407

3.7 BREAKING INTO, ADJUSTING AND REBUILDING SANITARY MANHOLES

Include the cost of removing and replacing any masonry work and rungs in the existing structures, which in the opinion of the Contract Administrator require replacement.

This shall be in addition to the payment for resetting minus the 300-masonry limit included in that price.

3.8 TEMPORARY SEWER SERVICE

The Contractor is responsible for temporary bypass pumping of sewage flows as required during sanitary sewer replacement to avoid interruptions of sewer services to the residents. The cost for temporary sewer service for the sanitary sewer replacement shall be included in the appropriate tender item, an no additional payment shall be made.

4. BASIS OF PAYMENT/MEASUREMENT FOR PAYMENT

Sewers - OPSS 410, except that the unit price bid shall include trenching and compaction of the bedding, cover and backfill material to the top of subgrade.

Manholes - OPSS 407, except that payment for manholes shall include the cost of any leakage tests.

Include the cost of reconnecting existing sewer connections to the new sewer in the unit price bid sanitary service laterals.

Styrofoam insulation measurements will be taken of the area of Styrofoam insulation placed.

The unit price bid shall include all costs of excavation and placement of the insulation as shown on the drawings.

No additional payment will be made for existing water service connections that have to be raised or lowered to suit sewer construction.

SECTION 02580 – WATERMAIN

1. INTENT

This section covers the construction of watermains and appurtenances.

2. PRODUCTS

2.1 PIPE – OPSS 441

Pipe type, diameter and class as shown on the drawings.

150mm PVC pipe – AWWA C900 DR 18

Ductile Iron pipe - Class 52, cement lined. Only to be used at tie-ins, lowering or shear protection with the exiting water system to maintain metallic continuity.

150mm Polyethylene pipe - AWWA 906 DR 11

25mm PEX A Service Line –AWWA C904 Municipex or approved equivalent.

Service line valves, fittings, saddles – AWWA C800

Concrete pressure pipe, Class 14 steel cylinder type, prestressed reinforced concrete AWWA - C301 (NOT USED)

2.2 JOINTS

PVC – push on joint

90 degrees bends are not to be used without the approval of the Owner. 2 – 45-degree bends with thrust restraints are to be used in lieu.

Ductile – mechanical joint where required.

Polyethylene – Thermal Butt Fusion or Electro-fusion couplings

2.3 THAW / TRACER WIRE

AWG No. 2/7 strand Type RWU90 copper cable with black colour jacket where service connections have flared joints.

AWG No. 8/7 copper cable with RWU-90 black insulation where service connections have compression joints.

2.4 FITTINGS AND SPECIALS

PVC AWWA C-900-7, CAN/CSA B137.3-M-90, 200 mm and under.
D.I. AWWA C-110 or C-153, 250 mm and greater, cement mortar lined C-104.
All non-stainless or uncoated fittings to be wrapped in Denso tape or approved equal.

2.5 COUPLINGS

Romac Macro HP restrained joint coupling or approved equivalent for connections between existing steel, cast iron, asbestos cement or other types of plastic pipe and new PVC pipe

Romac Alpha restrained joint coupling or approved equivalent for connections between ductile iron, HDPE, PVC and new PVC pipe.

Any approved Fernco couplings used in the Work shall be wrapped in Polyken Black

2.6 TAPPING SADDLES

Stainless steel saddles for service connections

2.7 GATE VALVES

AWWA C-509, non-rising spindle, operating nut 50.8 mm square, opening counter-clockwise

Working Pressure:

50 mm – 300 mm - 1,375 kPa

350 mm – 1,200 mm - 1,035 kPa

Triple 'O' Ring Seal

Joints, mechanical joint, 'O' Ring

Provide 1" rod extensions on valves.

2.8 VALVE BOXES

Screw type valve box with No. 6 base as manufactured by Bibby Foundry Limited, Star, WD valve or equal, Cambridge, Ontario (or equal), and described as follows (see standard drawing W-103-2);

Cover – 5-C-S; Upper – 5SC-U; Extension – 5SC-24E (600 mm); Lower – 5SC-L30 (750 mm); 5SC-L40 (1016 mm); Base – 5-6B; Complete Box – 5SC-30 (750 mm); 5SC-40 (1016 mm).

2.9 HYDRANTS

McAvity M-67B

Minimum bury 7 feet; ports 2 x 2 ½"; pumper port 5.75"; 6 threads per inch.

Colour – Chrome yellow body, aluminum port and spindle caps.

Drain holes plugged.

2.10 SERVICE CONNECTIONS

Water service pipe: PEX A – AWWA C904 Municipex or approved equivalent

Corporation Stops: Ford FB1000-4-NL or approved Cambridge equivalent. Stops must have pack joints.

Curb Stops: Ford B66-444-NL or approved Cambridge equivalent. Stops must have pack joints.

Couplings: New Service - Cambridge Series 118 cjxcj-nl or Ford C22, C44. Reconnections – Flared couplings or compression with jumper

Brass – All brass fittings shall be no lead type. NSF approved

Copper Pipe: Type K

Polyethylene Pipe: Series 160 or 200 Type K copper sizes

Curb Boxes: Supply with stainless steel rods, Type 304 18-8 composition. The crimp at the top of the rod shall be designed to centre position the rod in the curb box standpipe and allow for easy rod rotation.

Certify by the manufacturer, that the weld holding the bottom clip can withstand turning torques. The bottom clip to accommodate the approved curb stops.

No cotter pins are to be used. Substitute stainless bolt and nut.

Trace/thaw cable fasteners:

Copper services – electrical grounding clamp.

Plastic services – electrical tape.

Curb Boxes for various sizes shall be as follows:

20 mm – 25 mm

Approved WD Industrial VB-19, 7' – 9' Small Service Box with a minimum 300 mm adjustable telescopic rod galvanized lower and upper riser sections and a stainless steel rod of a length to place the top of the rod 1 metre below finished grade.

2.11 STYROFOAM INSULATION

H.I. plastic foam soil insulation as manufactured by Dow Chemical of Canada, or approved equal

2.12 TAPPING SLEEVES AND VALVES

Smith-Blair sleeves No. 622 or approved equal.

2.13 CONCRETE

OPSS 1350. Not to be used for thrust blocking.

3. EXECUTION

3.1 PIPE AND APPURTENANCES

OPSS 441

Comply with the manufacturer's recommendations.

3.2 SHOP DRAWINGS

Submit shop drawings for all valves, hydrants, and appurtenances and for concrete pressure pipe for review prior to delivery.

3.3 TEST CERTIFICATES

Provide certified test certificates for watermain pipe.

3.4 VALVES

OPSS 441

Inspect 'O' ring seals and tighten glands before installation.

Install all valve boxes in hot mix asphalt.

3.5 ANCHORAGE OF WATERMAIN AT PVC TEES, CROSSES, BENDS, PLUGS, SHAND THRUST BLOCKS

Install tie-rods and thrust blocks as shown on the contract drawings.

Concrete is not to be used for thrust blocking. Use tie rods and clamps installed in accordance with manufacturers recommendations and treated wood blocking.

THAW / TRACER WIRE

Install thaw / tracer wire along all non-metallic watermains and service connections, as shown on the drawings. Secure wire to pipeline with electrical tape at 3 metre intervals. Cadweld wire to hydrant boots.

Loop wire around hydrants and valves, leaving slack in the cables to permit future removal of the fitting.

Test for conductivity following backfill of trenches.

3.6 FIRE HYDRANTS

OPSS 441

The hydrant drain openings shall be plugged with standard pipe plugs. No lead is to be used.

3.7 TIE-IN TO EXISTING MAINS

Confirm outside diameter of existing mains before proceeding with the work.

Prior to tying into existing pressurized watermains, arrange with the Municipality to temporarily reduce or shut off pressure where there is risk of movement due to the pressure.

Use tapping sleeves where specified. Otherwise, connections to existing mains shall be made using cut in tees and required fittings.

Use similar main materials for lowerings, hydrant branches when tying into existing system.

3.8 FLUSHING AND DISINFECTION OF WATERMAINS

OPSS 441

Access points for chlorination shall be within 3 metres of all dead ends, in accordance with AWWA 651. Access points are to be removed prior to final connection or capped with approved fitting.

Disinfection of watermains shall be in accordance with the Ontario Watermain Disinfection Procedure.

New main work shall be physically separated from existing distribution system until after disinfection of new work. Physical separation may include an air gap, an approved RP Back Flow Preventer (Ontario Watermain Disinfection Procedure), but not a closed distribution valve. Note: the blind flange does not meet the standard without an air gap and should be removed.

For preliminary flushing prior to disinfection referred to in Sections 4.4.2 and 4.5.2 of ANSI/AWWA Standard C651, if the requirements of ANSI/AWWA Standard C651 for a velocity of 3.0 ft/sec (0.91m/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.

The Contractor is advised that results for bacteriological testing typically requires a minimum of 72 hours.

Bacteriological sampling shall be in accordance with AWWA Standard C651.

Swab all watermain pipe and fittings, not subject to flushing and disinfection, with chlorine solution with 50 mg/liter chlorine concentration, prior to installation.

Discharge chlorinated water to sanitary sewers where available. Dechlorinate all superchlorinated water. De-chlorinate water, if chlorine residual is not otherwise eliminated, before discharge to a watercourse.

Make provisions through blow offs or flushing to maintain water quality within the existing distribution system at locations created by isolation for the new work.

3.9 NOTIFICATION OF SHUT-OFFS

Where permitted by the Contract Administrator, the Contractor may shutoff water in existing mains to make connections. If such permission is sought and obtained by the Contractor, notify the Contract Administrator 24 hours in advance (and water users in the area at least 24 hours in advance – overnight notice is preferred) of the time of shutoffs and the anticipated duration. All shutoffs shall be done under the supervision of the Contract Administrator or his representative.

If there are extenuating circumstances that prohibit a water shutdown, the Contractor is responsible to arrange rescheduling of the shutdown or provision of temporary water service. Connections to existing watermains may require weekend work or night work due to water requirements of local customers.

3.10 TEMPORARY WATER SERVICE

OPS 493

Provide and maintain temporary water services to houses and businesses that are disconnected or isolated from the watermain, during the watermain construction for durations greater than 8 hours.

Submit the proposed method of temporary water supply to the Contract Administrator for approval prior to starting the work. All supply piping or hoses shall be CSA approved for potable water use and shall be disinfected and flushed prior to use.

Provide for continuous bleeding of temporary water supplies to maintain water quality.

Disinfection of watermains shall be in accordance with the Ontario Watermain Disinfection Procedure.

Bacteriological sampling shall be in accordance with AWWA Standard C651.

Connect the temporary water supply to the Municipality's distribution system using approved backflow prevention devices (AWWA Standard C651) at the source and at the connection to the customer. Obtain certification of backflow prevention device prior to use. Backflow prevention devices supplied by the Municipality will be subject to a back charge rental in the contract.

Notify the 24 hours, prior if temporary water impacts restaurant/food business establishments.

Flush the water service connection prior to returning the service to normal operation.

3.11 RECONNECTION OF EXISTING WATER AND SEWER CONNECTIONS

Upon the completion of testing and disinfection of the watermain, reconnect existing water connections.

Install pipe of same diameter as existing service with minimum diameter of 20 mm.

3.12 ABANDONING WATERMAINS

Fill watermains larger than 250 mm with sand, plug open ends with bricks and mortar, turn off main stops and crimp the open ends of abandoned water services.

Remove and salvage curb boxes and valve boxes from abandoned water service connections and watermains. Remove all structures to 1 metre below finished grade.

Where a line to be abandoned is connected to a main, which will remain, remove the connecting fitting and replace with a straight pipe or revised fitting as appropriate.

3.13 PRE-CAST CONCRETE VALVE CHAMBERS

Construct valve chambers in accordance with the drawings. Seal all leaks.

Submit shop drawings of valve chambers to the Contract Administrator for review prior to delivery.

3.14 OPERATION OF VALVES

The operation, of water valves and curb stops, in connection with the watermain work, shall be conducted by the operating authority only. Contractor shall give 48 hours notice.

3.15 CHEMICALS AND MATERIALS

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.

The Contract Administrator may request additional documentation from the Contractor to ensure that all chemicals, materials, products, etc. meet the above criteria.

4. BASIS OF PAYMENT / MEASUREMENT FOR PAYMENT

OPSS 441, except that the unit price bid shall include trenching and compaction of the bedding, cover, and backfill material to the top of subgrade.

Temporary Potable Water, except that the unit price bid shall include trenching and compaction of the bedding, cover, and backfill material to the top of subgrade.

SECTION 02585 – CATHODIC PROTECTION FOR WATERMAINS

1. GENERAL

This section covers the construction of cathodic protection for metallic underground pipelines.

2. PRODUCTS

2.1. SACRIFICIAL ANODES

Sacrificial anodes are supplied in cardboard containers holding the anode, selected packaging material and 3000 mm of AWG No. 10/7 strand copper cable with RWU-90 blue insulation for magnesium anodes and RWU-90 white insulation for zinc anodes. The cable is silver soldered to the steel core of the anode casting.

Zinc anodes ASTM B418 Type II – 24 lbs.

Magnesium anodes ASTM B843 – 32 lbs.

2.2. BOND CABLES

AWG No. 2/7 strand copper wire with RWU-90 black insulation.

2.3. WATERMAIN TEST LEADS

AWG No. 8/7 strand cable with RWU-90 black insulation.

Compression connectors – C-taps (grey dye, as manufactured by Thomas and Betts).

Electrical tape – 20 mm PVC.

Waterproof tape – 25 mm Neoprene rubber as manufactured by Bishop.

Mastic - Royston Roskote – A-51 Master or approved equal.

Cadweld Cartridges and moulds:

- i) Ductile Iron Pipe – for bond cables.
 - Cartridge: Cadweld – CA 32.
 - Mould: 200 mm or less CAHAA-1VB – 250 mm to 350 mm CAHAA-1VC - 400 mm or greater CAHAA-1V.
- ii) Ductile iron pipe – for anode and test leads:
 - Cartridge: Cadweld – CA-15.
 - Sleeve (anode lead only): Cadweld CAB-133-1H.
 - Mould: CAHAA-1G.

CATHODIC PROTECTION FOR WATERMAINS

- iii) Cast iron pipe – for bond cables:
 - Cartridge: Cadweld CA4SXF-19.
 - Mould: Cadweld CAEA-1G-XX - where “XX” is pipe diameter in inches.

3. EXECUTION

3.1. EXISTING WATER SYSTEMS

Whenever an existing metallic structure associated with a waterworks system is exposed, install 32 lb. magnesium anodes as follows:

Tees, crosses, bends, reducers – 1

Fire hydrants – 1

Curb stops – 1

Copper water service – first 6 metres – 1; each additional 6 metres – 1.

3.2. NEW WATER SYSTEMS

When installing new watermain systems, install 24 lb. zinc anodes on metallic structure, as follows:

Tees, crosses, bends reducers – 1, Note: Multiple fittings (up to 4 maximum) can be protected by a single anode if they are all located within 3.0 m of each other.

Fire hydrants – 1

Exposed copper services – 1

New copper service – first 6 metres – 1; each additional 6 metres – 1.

3.3. ELECTRICAL CONDUCTIVITY

Bond all pipe joints, fittings and electrical discontinuities in the piping system, as shown on the drawings, to ensure electrical conductivity.

Test to verify conductivity upon completion.

3.4. INSTALLATION OF ANODES

Install anodes in accordance with manufacturer’s recommendations and as shown on the drawings. Leave sufficient slack in lead wires to prevent stress on connections due to backfilling.

CATHODIC PROTECTION FOR WATERMAINS

Connect anodes to copper services using Burndy Corrosion Resistant Bronze Ground connection with durium hardware. Use Model GA2 for pipe sizes up to 25.4 mm in diameter, use Model GA3 for pipe sizes 31.75 mm to 50.8 mm in diameter.

3.5. ELECTRICAL BONDING OF JOINTS

Thermite weld one bond cable as specified across every pipe-to-pipe and pipe-to-fitting joint. CAB-133-1H sleeves are not required for bond cables.

Coat the thermite welds and the exposed surface of the pipe liberally with mastic.

Remove bare copper bands if supplied with the piping.

Do not use bare copper bond straps, conductivity screws or conductivity wedges to provide electrical continuity.

3.6. ELECTRICAL BONDING OF EXISTING PIPING

Perform a test cadweld on a sample section of the removed pipe to ensure the weld does not perforate the pipe's inner wall.

Where possible, install bond cable to the existing pipe prior to installation of new replacement section. Visually inspect the inner surface after welding.

4. BASIS OF PAYMENT / MEASUREMENT FOR PAYMENT

The unit prices tendered for the various works to be constructed shall include the cost of all corrosion protection works.