

THE CORPORATION OF THE TOWN OF AMHERSTBURG

BY-LAW NO. 2017-47

**By-law to enter into a contract with SLR Contracting Group Inc. for the
Culvert #7 Replacement Over Albert McGee Drain**

WHEREAS under Section 9 of the Municipal Act 2001, S.O., 2001, c. 25, as amended, a municipality has the capacity, rights, powers and privileges of a natural person for the purpose of exercising its authority under this or any other Act.

AND WHEREAS under Section 8(1) of the Municipal Act 2001, S.O., 2001, c. 25, as amended, shall be interpreted broadly so as to confer broad authority on municipalities to enable them to govern their affairs as they consider appropriate and to enhance their ability to respond to municipal issues;

AND WHEREAS the Council of The Corporation of the Town of Amherstburg deems it expedient to enter into a contract with SLR Contracting Group Inc. for the Culvert #7 Replacement Over Albert McGee Drain;


NOW THEREFORE the Council of The Corporation of the Town of Amherstburg enacts as follows:

1. That the Council of The Corporation of the Town of Amherstburg agrees to enter into the contract as attached hereto as Schedule "A" to this By-law.
2. That the Mayor and Clerk are hereby authorized to sign and seal said agreement on behalf of The Corporation of Town of Amherstburg.
3. This By-law shall come into force and take effect immediately upon the final passing thereof.

Read a first, second and third time and finally passed this 23rd day of May, 2017.



MAYOR – ALDO DICARLO



CLERK – PAULA PARKER

The Corporation of the
Town of Amherstburg, Ontario



TENDER

**CULVERT #7 REPLACEMENT
6TH CONCESSION SOUTH OVER
ALBERT MCGEE DRAIN
T11-2017-002**



ZURICH

Zurich Insurance Company Ltd

100 King St. W., Suite 5500, P.O. Box 290, Toronto, ON M5X 1C9

LABOUR AND MATERIAL PAYMENT BOND (TRUSTEE FORM)

CCDC 222 - 2002

No. **6348745**

Bond Amount: **\$215,118.10**

SLR CONTRACTING GROUP INC. as Principal, hereinafter called the Principal, and **Zurich Insurance Company Ltd** a corporation created and existing under the laws of Switzerland and duly authorized to transact the business of Suretyship in Canada as Surety, hereinafter called the Surety, are held and firmly bound unto **THE CORPORATION OF THE TOWN OF AMHERSTBURG** as Obligee, hereinafter called the Obligee, in the amount of **TWO HUNDRED FIFTEEN THOUSAND ONE HUNDRED EIGHTEEN-----10/100** Dollars (**\$215,118.10**) lawful money of Canada, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, the Principal has entered into a written contract with the Obligee, dated the **23** day of **MAY**, **2017** for

T11-2017-002 - CULVERT #7 REPLACEMENT - 6TH CONCESSION SOUTH OVER ALBERT MCGEE DRAIN

in accordance with the Contract Documents submitted, and which are by reference made part hereof and are hereinafter referred to as the Contract.

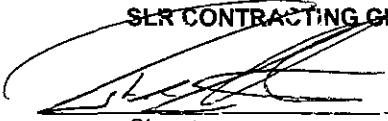
The Condition of this obligation is such that, if the Principal shall make payment to all Claimants for all labour and material used or reasonably required for use in the performance of the Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject, however, to the following conditions:

1. A Claimant for the purpose of this Bond is defined as one having a direct contract with the Principal for labour, material, or both, used or reasonably required for use in the performance of the Contract, labour and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment directly applicable to the Contract provided that a person, firm or corporation who rents equipment to the Principal to be used in the performance of the Contract under a contract which provides that all or any part of the rent is to be applied towards the purchase price thereof, shall only be a Claimant to the extent of the prevailing industrial rental value of such equipment for the period during which the equipment was used in the performance of the Contract. The prevailing industrial rental value of equipment shall be determined, insofar as it is practical to do so, by the prevailing rates in the equipment marketplace in which the work is taking place.
2. The Principal and the Surety, hereby jointly and severally agree with the Obligee, as Trustee, that every Claimant who has not been paid as provided for under the terms of its contract with the Principal, before the expiration of a period of ninety (90) days after the date on which the last of such Claimant's work or labour was done or performed or materials were furnished by such Claimant, may as a beneficiary of the trust herein provided for, sue on this Bond, prosecute the suit to final judgment for such sum or sums as may be justly due to such Claimant under the terms of its contract with the Principal and have execution thereon. Provided that the Obligee is not obliged to do or take any act, action or proceeding against the Surety on behalf of the Claimants, or any of them, to enforce the provisions of this Bond. If any act, action or proceeding is taken either in the name of the Obligee or by joining the Obligee as a party to such proceeding, then such act, action or proceeding, shall be taken on the understanding and basis that the Claimants, or any of them, who take such act, action or proceeding shall indemnify and save harmless the Obligee against all costs, charges and expenses or liabilities incurred thereon and any loss or damage resulting to the Obligee by reason thereof. Provided still further that, subject to the foregoing terms and conditions, the Claimants, or any of them may use the name of the Obligee to sue on and enforce the provisions of this Bond.
3. It is a condition precedent to the liability of the Surety under this Bond that such Claimant shall have given written notice as hereinafter set forth to each of the Principal, the Surety and the Obligee, stating with substantial accuracy the amount claimed, and that such Claimant shall have brought suit or action in accordance with this Bond, as set out in sub-clauses 3 (b) and 3 (c) below. Accordingly, no suit or action shall be commenced hereunder by any Claimant:
 - a) unless such notice shall be served by mailing the same by registered mail to the Principal, the Surety and the Obligee, at any place where an office is regularly maintained for the transaction of business by such persons or served in any manner in which legal process may be served in the Province or Territory in which the subject matter of the Contract is located. Such notice shall be given.

- i) in respect of any claim for the amount or any portion thereof, required to be held back from the Claimant by the Principal, under either the terms of the Claimant's contract with the Principal, or under the lien Legislation applicable to the Claimant's contract with the Principal, whichever is the greater, within one hundred and twenty (120) days after such Claimant should have been paid in full under the Claimant's contract with the Principal;
 - ii) in respect of any claim other than for the holdback, or portion thereof, referred to above, within one hundred and twenty (120) days after the date upon which such Claimant did, or performed, the last of the work or labour or furnished the last of the materials for which such claim is made under the Claimant's contract with the Principal;
- b) after the expiration of one (1) year following the date on which the Principal ceased work on the Contract, including work performed under the guarantees provided in the Contract;
 - c) other than in a Court of competent jurisdiction in the Province or Territory in which the work described in the Contract is to be installed or delivered as the case may be and not elsewhere, and the parties hereto agree to submit to the jurisdiction of such Court.
4. The Surety agrees not to take advantage of Article 2365 of the Civil Code of the Province of Quebec in the event that, by an act or an omission of a Claimant, the Surety can no longer be subrogated in the rights, hypothec and privileges of said Claimant.
 5. Any material change in the contract between the Principal and the Obligeé shall not prejudice the rights or interest of any Claimant under this Bond, who is not instrumental in bringing about or has not caused such change.
 6. The amount of this Bond shall be reduced by, and to the extent of any payment or payments made in good faith, and in accordance with the provisions hereof, inclusive of the payment by the Surety of claims made under the applicable lien legislation or legislation relating to legal hypothecs, whether or not such claim is presented under and against this Bond.
 7. The Surety shall not be liable for a greater sum than the Bond Amount.

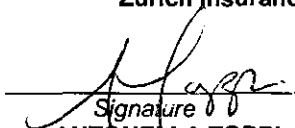
IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond dated 6th day of June, in the year 2017.

SIGNED and SEALED in the presence of

SLR CONTRACTING GROUP INC.


Signature
PAUL K. ROBINSON

Name of person signing

Zurich Insurance Company Ltd


Signature
ANTONELLA TOPPA, Attorney-in-fact

Name of person signing



Zurich Insurance Company Ltd
100 King St. W., Suite 5500, P.O. Box 290, Toronto, ON M5X 1C9

**PERFORMANCE BOND
CCDC 221 - 2002**

No. 6348745

Bond Amount: **\$215,118.10**

SLR CONTRACTING GROUP INC. as Principal, hereinafter called the Principal, and Zurich Insurance Company Ltd, a corporation created and existing under the laws of Switzerland and duly authorized to transact business of Suretyship in Canada as Surety, hereinafter called the Surety, are held and firmly bound unto **THE CORPORATION OF THE TOWN OF AMHERSTBURG** as Obligee, hereinafter called the Obligee, in the amount of **TWO HUNDRED FIFTEEN THOUSAND ONE HUNDRED EIGHTEEN-----10/100 Dollars (\$215,118.10)** lawful money of Canada, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, the Principal has entered into a written contract with the Obligee, dated the 23 day of **MAY, 2017** for

T11-2017-002 - CULVERT #7 REPLACEMENT - 6TH CONCESSION SOUTH OVER ALBERT MCGEE DRAIN

hereinafter referred to as the Contract.

The condition of this obligation is such that if the Principal shall promptly and faithfully perform the Contract then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Whenever the Principal shall be, and declared by the Obligee to be, in default under the Contract, the Obligee having performed the Obligee's obligations thereunder, the Surety shall promptly:

- 1) remedy the default, or;
- 2) complete the Contract in accordance with its terms and conditions or;
- 3) obtain a bid or bids for submission to the Obligee for completing the Contract in accordance with its terms and conditions and upon determination by the Obligee and the Surety of the lowest responsible bidder, arrange for a contract between such bidder and the Obligee and make available as work progresses (even though there should be a default, or a succession of defaults, under the contract or contracts of completion, arranged under this paragraph) sufficient funds to pay to complete the Principal's obligations in accordance with the terms and conditions of the Contract and to pay those expenses incurred by the Obligee as a result of the Principal's default relating directly to the performance of the work under the Contract, less the balance of the Contract price; but not exceeding the Bond Amount. The balance of the Contract price is the total amount payable by the Obligee to the Principal under the Contract, less the amount properly paid by the Obligee to the Principal, or;
- 4) pay the Obligee the lesser of (1) the Bond Amount or (2) the Obligee's proposed cost of completion, less the balance of Contract price.

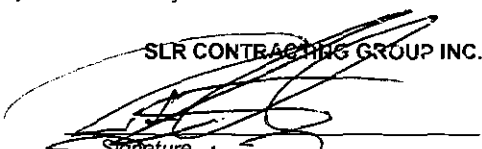
It is a condition of this bond that any suit or action must be commenced before the expiration of two (2) years from the earlier of (1) the date of Substantial Performance of the Contract as defined in the lien legislation where the work under the Contract is taking place, or, if no such definition exists, the date when the work is ready for use or is being used for the purpose intended, or (2) the date on which the Principal is declared in default by the Obligee.

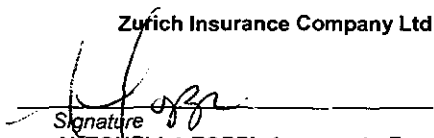
The Surety shall not be liable for a greater sum than the Bond Amount.

No right of action shall accrue on this Bond, to or for the use of, any person or corporation other than the Obligee named herein, or the heirs, executors, administrators or successors of the Obligee.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond dated 6th day of June, in the year 2017.

SIGNED and SEALED
in the presence of

SLR CONTRACTING GROUP INC.

Signature
PAUL K. ROBINSON
Name of person signing

Zurich Insurance Company Ltd

Signature
ANTONELLA TOPPI, Attorney-in-Fact
Name of person signing

Zurich Insurance Company Ltd

Surety Department
First Canadian Place
100 King Street West
Suite 5500, P.O. Box 290
Toronto, ON M5X 1C9



Bond Number: 6348745

Zurich Insurance Company Ltd

RE: Notice under Part XIII of the Insurance Companies Act (Canada)

For purposes of the Insurance Companies Act (Canada), this document was issued in the course of Zurich Insurance Company Ltd's insurance business in Canada.

CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY)
06/02/2017

BROKER



HUB International Ontario Limited
24 Seacliff Drive East, Unit 100
Leamington, ON N8H0C2
Canada
Liz Hooker

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policies below.

Company A	Economical Insurance Group
Company B	
Company C	
Company D	
Company E	

INSURED'S FULL NAME AND MAILING ADDRESS
SLR Contracting Group Inc., SLR Leasing Group Inc. , 1818718 Ontario Ltd.
6260 Westar Dr.
LaSalle, ON N9J 0B5
Canada

COVERAGES

This is to certify that the policies of insurance listed below have been issued to the insured named above for the policy period indicated, notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain. The insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies. Limits shown may have been reduced by paid claims.

TYPE OF INSURANCE	CO LTR	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS OF LIABILITY (Canadian dollars unless indicated otherwise)	
COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCURRENCE <input checked="" type="checkbox"/> PRODUCTS AND/OR COMPLETED OPERATIONS <input checked="" type="checkbox"/> PERSONAL INJURY <input type="checkbox"/> EMPLOYER'S LIABILITY <input checked="" type="checkbox"/> TENANT'S LEGAL LIABILITY <input checked="" type="checkbox"/> NON-OWNED AUTOMOBILE <input checked="" type="checkbox"/> HIRED AUTOMOBILE	A	40027823	05/15/2017	05/15/2018	EACH OCCURRENCE	\$ 2,000,000
					GENERAL AGGREGATE	\$
					PRODUCTS - COMP/OP AGGREGATE	\$ 2,000,000
					PERSONAL INJURY	\$ 2,000,000
					EMPLOYER'S LIABILITY	\$
					TENANT'S LEGAL LIABILITY	\$ 500,000
					NON-OWNED AUTOMOBILE	\$ 2,000,000
					HIRED AUTOMOBILE	\$ 50,000
AUTOMOBILE LIABILITY <input type="checkbox"/> DESCRIBED AUTOMOBILES <input checked="" type="checkbox"/> ALL OWNED AUTOMOBILES <input checked="" type="checkbox"/> LEASED AUTOMOBILES ** <input type="checkbox"/> GARAGE LIABILITY <small>**ALL AUTOMOBILES LEASED IN EXCESS OF 30 DAYS WHERE THE INSURED IS REQUIRED TO PROVIDE INSURANCE</small>	A	64011427	05/15/2017	05/15/2018	BODILY INJURY PROPERTY DAMAGE COMBINED	\$ 2,000,000
					BODILY INJURY (Per person)	\$ 2,000,000
					BODILY INJURY (Per accident)	\$ 2,000,000
					PROPERTY DAMAGE	\$ 2,000,000
						\$
EXCESS LIABILITY <input checked="" type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM	A	40027823	05/15/2017	05/15/2018	EACH OCCURRENCE	\$ 10,000,000
					AGGREGATE	\$
OTHER (SPECIFY)					\$	\$
					\$	\$
					\$	\$
					\$	\$

DESCRIPTION OF OPERATIONS/LOCATIONS/AUTOMOBILES/SPECIAL ITEMS/ ADDITIONAL INSURED

The Corporation of the Town of Amherstburg, Haddad, Morgan and Associates Ltd., Golder Associates Ltd., are Additional Insureds to the Commercial General Liability Policy but only insofar as their legal liability arises, vicariously, out of the products/operations performed by, or on behalf of, the Named Insured re: Project - Culvert #7 Replacement, 6th Concession South over Albert McGee Drain T11-2017-002. Policy limits are not increased by such addition.
Proof of Automobile only.

CERTIFICATE HOLDER

CANCELLATION

The Corporation of the Town of Amherstburg
271 Sandwich Street South
Amherstburg, ON N9V 2A5
Canada

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOUR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

Per: *C. Brown*
Page 1 of 1

Clearance Certificate / Certificat de décharge

Contractor Legal / Trade Name / Appellation commerciale ou raison sociale de l'entrepreneur	Contractor Address / Adresse de l'entrepreneur	Contractor Classification Unit and Description / Unité de classification de l'entrepreneur et description	Principal Legal / Trade Name / Appellation commerciale ou raison sociale de l'entrepreneur principal	Principal Address / Adresse de l'entrepreneur principal	Clearance Certificate Number / Numéro du certificat de décharge	Validity period (dd-mm- yyyy) / Période de validité (jj/mm/aaaa)
SLR CONTRACTING GROUP INC.	6260 WESTAR DR, WINDSOR, ON, N9J3W3, CA	4122-000: Waterworks and Sewage Systems 4121-001: Highways, Streets, and Small Bridges	THE CORPORATION OF THE TOWN OF AMHERSTBURG / TOWN OF AMHERSTBURG	271 SANDWICH ST SOUTH, AMHERSTBUR G, ON, N9V2A5, CA	S000000C54TT	20-May-2017 to 19-Aug-2017

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ALBERT MCGEE DRAIN
T11-2017-002

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INFORMATION TO BIDDERS

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN**

T11-2017-002

INFORMATION TO TENDERS

1. BACKGROUND INFORMATION

The Town of Amherstburg is located in southwestern Ontario, approximately 30 kilometers southwest of the City of Windsor and is one of seven lower-tier municipalities in the County of Essex. The current population of the Town of Amherstburg is approximately 21,000.

The Town is seeking Tenders from qualified contractors to perform Culvert #7 Replacement – 6th Concession South over Albert McGee Drain inclusive of some drain work. The existing culvert is a cast-in-place structure.

2. DEFINITIONS

“Contractor” or “Bidder” means the individual, firm, company or corporation submitting a Tender to the Town in response to this Request for Tender.

“Corporate Contact” is the Town employee(s) defined as the contact in relation to the administration and technical specifications of the RFQ.

“Project Manager” is the Town employee who will oversee the completion of the contract in accordance to this tender, contract and agreement. This individual will take management of the project after the contract has been successfully awarded.

“Total Tender Price” means an evaluation of quality and service in assessment of Tenders and the sum of all expenses, warranties, taxes, local service costs, lifecycle costs, time of completion or delivery, inventory carrying costs, operating and disposal costs and any applicable disbursements that determine the lowest compliant Tender.

“Town” means the Corporation of the Town of Amherstburg

“Work” means any of the following tasks, or combinations, thereof:

- a) Supply or provision of articles or materials;
- b) Supply of labour;
- c) Performance of functions and tasks;
- d) Provision of services;
- e) Equipment operated or not operated;
- f) Construction or repairs as specified;
- g) Security deposit

3. TENDER CLOSING DATE AND TIME

Tenders, contained in a sealed envelope with the provided envelope cover (appendix A) firmly affixed, will be received by:

**Clerks Department
Town of Amherstburg – Town Hall (Upper Level)
271 Sandwich Street South, Amherstburg, Ontario, N9V2A5**

Up until:

11:00 am (local time), Thursday May 11, 2017

Tenders will be opened in public shortly after the official closing time.

Tenders must be received at the address noted above no later than the specified closing time. Tenders received after said closing time will not be accepted or considered.

4. METHOD OF SUBMISSION

Tenders must be submitted in a sealed envelope by way of hand delivery, courier service, or mail prior to the Tender closing time.

Delivery of Tender through a third party mail courier service shall be at the risk of the Bidder and must be arranged in due time for the Tender to arrive at the specified location before the Tender closing time. Failure of a third party courier service to submit the Tender prior to the Tender closing time will result in the disqualification of the Tender, and will be at no fault of the municipality.

Tenders sent by email or facsimile will not be accepted.

5. SUBMISSION ENVELOPE

The Tender must be supplied in a sealed envelope with the envelope cover supplied in Appendix A of this document. The envelope cover must be affixed to the Bidder's envelope without any extra exterior covering. Failure to affix the envelope cover to the submission envelope may result in disqualification of the Tender.

6. TENDER SUBMISSION REQUIREMENTS

Tenders shall be prepared and submitted in accordance with the outline set specified in this document.

The Tender shall be bound and contained in a sealed envelope bearing Appendix A – Envelope Cover, and include the following minimum requirements, as found in the Form of Tender (T-#) pages:

- a) T-1 – Contractor Identification Sheet
- b) T-2 to T-4 – Tender Price
- c) T-5 – Contractor Qualifications and Experience
- d) T-6 to T-7 - References
- e) T-8 – Acknowledgement of Tender Documents Received by Bidder and Addenda

7. BID BOND

No tender shall be considered as bona fide unless accompanied by a Bid Bond or Certified Cheque in the amount of 10% of the submission price and made payable to the Corporation of the Town of Amherstburg. The Certified Cheque or Bid Bond of the unsuccessful Proponents will be returned without interest upon execution of the tender with the successful contractor.

The Certified Cheque or Bid Bond of the successful Contractor will be retained as liquidated damages to indemnify the Owner in case of default until such time as the contract is executed. All Certified Cheques or Bid Bonds will be returned without interest should a contract not be executed within ninety (90) days of the date of closing of this quotation.

8. PERFORMANCE BOND AND LABOUR AND MATERIAL PAYMENT BOND

The Contractor, together with a surety company approved by the Owner and authorized by law to carry on business in the Province of Ontario, shall furnish to the Owner a Performance Bond and a separate Labour and Material Payment Bond in the amount of one hundred percent (100%) of the total tender price (not including H.S.T.) and such additional amount, if any, as may be required by the Owner.

8. PERFORMANCE BOND AND LABOUR AND MATERIAL PAYMENT BOND – Continued

The Owner will notify the selected Tenderer accordingly when the Tender has been awarded. The Contractor will be required to execute and furnish to the Owner the Performance Bond and the Labour and Material Payment Bond as required herein and after notification of the award of contract by the Owner. Contracts will not be executed without the provision of said bonds and no work shall commence until said bonds have been provided.

9. EXAMINATION OF SITE, PLANS AND SPECIFICATIONS

Each Proponent must visit the site and review the plans and specifications before submitting his tender and must satisfy himself as to the extent of the work and local conditions to be met during the testing period. He is not to claim at any time after submission of his tender that there was any misunderstanding of the terms and conditions of the contract relating to site conditions. The quantities shown as indicated on the drawings or in the tender are estimates only and are for the sole purpose of indicating to the bidders the general magnitude of the work. The Proponent is responsible for checking quantities for accuracy prior to submitting his tender.

10. AGREEMENT AND GENERAL CONDITIONS

Tenders will be received and contracts awarded only in the form as shown on the tender page unless otherwise provided, for the completion of the whole work or of specified sections thereof in accordance with the plan and specification. The Contractor agrees to enter into a formal contract with the Municipality upon acceptance of the tender.

All work included in the contract must be completed on or before the date fixed in the contract and must, at the time of completion and final inspection, be in first class condition and comply fully with the specifications.

Final inspection will be made by the Amherstburg Public Works Department within 20 days after the Municipality has received notice in writing from the Contractor that the work is completed, or as soon thereafter as weather conditions permit.

The Contractor will be held liable for any damage or expenses occasioned by his failure to complete the work on time and for any expenses of inspecting, superintending or reletting due to his neglect or failure to complete the work satisfactorily. Any such expense or damages may be deducted from the amount of the Contract or may be recovered by the Municipality from the Contractor and his sureties.

11. INSURANCE

Upon award of the contract and prior to commencement of work, the Contractor shall furnish the Manager of Engineering and Operations and the Consultant with a satisfactory Certificate of Insurance (COI) containing the information below, for the period of the execution of the work:

- i. A Commercial General Liability (CGL) policy that shall be not less than 5 million dollars per occurrence.
- ii. The CGL policy shall include bodily injury including death, personal injury, property damage, tenants legal liability, non-owned automobile and contain a cross liability/severability of interest clause. The certificate must also include acknowledgement that coverage under the policy specifically extends to the works in question. The COI shall name the Town of Amherstburg, Haddad, Morgan and Associates Ltd., and the testing consultant as additional insured to the policy.
- iii. The CGL policy shall not contain any exclusion or limitation in respect to shoring, underpinning, raising or demolition of any building or structure, pile driving, caisson work, collapse of any structure or subsidence of any property, structure or land from any cause.
- iv. The Contractor shall note that where construction works are performed within lands owned by the County of Essex or Ministry of Transportation the CGL policy shall also name the County of Essex and/or the Ministry of Transportation as additional insured to the policy.
- v. The liability insurance shall be endorsed to provide that the policy shall not be altered, cancelled or allowed to lapse without 30 days prior written notice to the Town of Amherstburg.

12. CORPORATE CONTACT AND COMMUNICATIONS

Additional information, including clarifications, regarding this Tender may be obtained by contacting the following person by telephone or email:

Administrative Inquiries (regarding tender procedures, insurance, etc.)

Bobbi Reive, Financial Planning Administrator

Town of Amherstburg

Phone: 519-736-0012 extension 226

Email: breive@amherstburg.ca

12. CORPORATE CONTACT AND COMMUNICATIONS - Continued

Technical Inquiries (regarding the scope of work of the contract)

William Tape, P.Eng.

Haddad, Morgan and Associates Ltd.

Phone: 519-973-1177, ext. 16

Email: will@haddadmorgan.com

Contact with Town of Amherstburg officials or staff other than the staff members named is not permitted and will be considered grounds for disqualification in the bidding and selection process. No verbal instructions or verbal information to bidders will be binding on the Town.

After the contract has been awarded, a Project Manager for the Town of Amherstburg may be named which may differ from the contact individual noted above. This individual will be the Manager that will oversee the completion of the contract per the specifications noted in this document.

13. TENDER VALIDITY PERIOD

Tenders shall remain valid and open for acceptance for a period of 90 days from the Tender closing date. Bidders shall ensure that sub-trade and supply tenders are valid for a sufficient length of time to accommodate the noted validity period.

14. SUBMISSION CONFIDENTIALITY

All Tenders submitted to the Town will be considered confidential, conditional to the Municipal Freedom of Information and Protection of Privacy Act. All pricing information regarding content of Tenders will remain confidential as the Town reserves the right to negotiate with bidders.

At no time will bidders divulge any confidential information provided to or acquired by the bidder or disclosed by the Town throughout the course of the intended project.

The successful bidder acknowledges that information of any kind provided throughout the course of the intended project are the exclusive property of the Town and shall not be disclosed or released to any person or organization without written authorization from the Town having been previously provided.

15. INFORMAL OR UNBALANCED TENDERS

Tender documents must be legible. All entries in the Form of Tender shall be made in ink or by typewriter. Entries or changes made in pencil shall be subject to automatic rejection, unless otherwise decided by the Town.

Alterations of any kind must be clearly made and initialed by the bidder, or the Tender may be subject to automatic rejection.

Tenders containing a project period or schedule adverse to the objectives of the Town's interests may be rejected.

Tenders containing prices so unbalanced as to adversely affect the interests of the Town may be subject to rejection.

All items must be bid with the unit price for every item and other entries clearly shown. If any amount within the Tender does not agree with the extension of the estimated quantity and unit price, the unit price shall govern and the amount and the Total Tender Price shall be corrected accordingly, unless the Town decides otherwise.

A discrepancy in addition or subtraction shall be corrected by the Town by adding or subtracting the items correctly and correcting the Total Tender Price, unless the Town decides otherwise. If an error has been made transposing an amount from one part of the Tender to another, the amount shown before transfer shall, subject to any corrections as previously noted, be taken to be correct and the amount shown after the transfer and the Total Tender Price shall be corrected accordingly.

If an omission has occurred wherein an item of work has not been provided a price in the Form of Tender, the bidder shall, unless otherwise stated in his Tender, be deemed to have allocated this price elsewhere in the Form of Tender for the cost of carrying out said item of work and, unless otherwise directed by the Town, no increase shall be made in the Total Tender Price because of said omission.

The Town may wave formalities at its discretion, provided the Town's Purchasing Policy has been adhered to.

16. CORPORATE SEAL

The Form of Proposal requires the application of the Proponent's corporate seal on a number of pages. The corporate seal must be applied on each page as required to make the proposal valid. If a corporate seal is not present on the required Form of Tender pages, the Proponent must indicate that the proposal signatory is legally authorized to bind the company by completing the acknowledgement provided below the request for the corporate seal.

Failure to provide corporate seals or acknowledgement that the signatory is legally able to bind the company in the required locations on the Form of Tender may result in the rejection of the proposal.

The Town reserves the right to request proof of legal authority to bind the company at its discretion.

17. WORKPLACE SAFETY AND INSURANCE BOARD PAYMENTS

The Contractor will be required to submit to the Municipality a Certificate of Good Standing from the Workplace Safety & Insurance Board prior to the commencement of the work and the Contractor will be required to submit to the Municipality a Certificate of Clearance for the project from the Workplace Safety & Insurance Board before final payment is made to the Contractor.

The Contractor shall provide and maintain the necessary first aid items and equipment as called for under the First Aid Regulations of the Workplace Safety & Insurance Act.

18. RESERVATION OF RIGHT

Contractors will not have the right to change conditions, terms or prices of the Tender once the Tender has been submitted in writing to the Town. Bidders may withdraw a Tender once it has been submitted, in accordance with provisions of Section 25 – Withdrawal or Qualifying of Tenders.

19. ADDENDA

Bidders may be notified during the Tender period of required additions to, deletions from, or alterations in the requirements of the Tender documents.

Any addenda issued after the posting of this Tender will be posted online and emailed to each plan-taker up to 48 hours prior to the Tender closing time. It is the sole responsibility of contractors to review and respond to addenda issued following the issuance of this request for Tender in their submissions.

If addenda are issued prior to 48 hours of closing this request for Tender, the closing date of this request for Tender will be adjusted accordingly.

Addenda must be acknowledged on page T-8 and provided with the Tender. Failure to acknowledge addendums may result in the rejection of the Tender. Bidders must also acknowledge if no addendums were received.

20. HARMONIZED SALES TAX (HST)

The Proponent will be required to calculate and include both of the following items in his Tender:

- a) Tender Price (not including HST)
- b) Total Tender Price (including 13% HST)

For the purposes of evaluating Tenders, the Total Tender Price must be the base Tender Price plus 13%. If a percentage other than 13% is added, the Tender will be assumed to be in error and will be corrected accordingly.

21. PRICING TO REMAIN FIRM

Pricing provided under this Tender shall remain firm and unchanged for the entire validity period stated in this Tender. (See Section 13 – Tender Validity Period)

22. COSTS INCURRED BY BIDDERS

Expenses incurred by bidders for the preparation and submission of Tenders to the Town, or any work done in correlation thereof, shall be borne by the bidder.

No payment will be provided for any Tenders submitted or for any other effort made by the bidder prior to the commencement of the services as defined and approved by the Town.

23. TENDER FEES

The Tender Fee shall be a firm price (upset limit) and include all payroll costs, benefits, overhead and profit. All costs for printing, telephone and facsimile charges, and approved travel shall be included.

24. PAYMENT OF FEES

Unit prices are provided for the evaluation of tenders and the selection of a successful contractor. Payment for the items in the tender will be on a unit price basis as per the tender. Quantities have been estimated based on anticipated work required.

25. WITHDRAWAL OR QUALIFYING OF TENDERS

A bidder who has already submitted a Tender may submit a further Tender at any time up to the official closing time. The last Tender received shall supersede and invalidate all Tenders previously submitted by the bidder for this contract.

A bidder may withdraw his Tender at any time up to the official closing time by presenting a letter with his signature and corporate seal. Said letter must be received at the Tender closing location in sufficient time to be marked with the time and date of receipt, and for the Tender contact to note the withdrawal of the Tender prior to the official closing time.

When a request to withdraw a Tender has been received prior to the closing time, and it has been verified to be signed and sealed by the Town, the unopened submission envelope will be returned to the bidder.

No telegrams, facsimiles, or telephone calls will be considered for official withdrawal of a Tender. If applicable, the bid deposit shall be forfeited to the Town when a bidder attempts to withdraw their Tender after the Tender closing time, in addition to any consequence or applicable legal penalty.

26. DISQUALIFIED TENDERS

The Town will not accept Tenders that:

- a) Are received by the Town at the closing location any time after the closing time advertised for the Tender
- b) Do not contain the required bid bond, certified cheque or bank draft in the required amount (if so required by the request for Tender)

Disqualifications of Tenders shall be subject to the Town's Purchasing Policy.

27. ABILITY AND EXPERIENCE OF CONTRACTOR

The successful contractor must submit satisfactory evidence that they have the ability and experience for this type of work and that they have the necessary plant and capital to enable them to proceed and complete the work in a satisfactory manner. This evidence must be provided on the submitted form of Tender.

The Town of Amherstburg may investigate as it deems necessary to determine the ability of the bidder to perform the work and the bidder shall furnish the Town of Amherstburg all such information and data for this purpose as the Town of Amherstburg may request. The Town of Amherstburg reserves the right to reject any tender if the evidence submitted by or investigation of such bidder fails to satisfy the Town of Amherstburg that the bidder is qualified to carry out the obligations of the contract.

28. PRIVILEGE CLAUSE

The lowest or any Tender may not necessarily be accepted. The Corporation of the Town of Amherstburg reserves the right to delete any part, or parts from the Tender without stating reasons therefore. In the event of any deletion, it is agreed that the contractor will have no claim for loss of potential profit or overhead costs.

29. RECORD AND REPUTATION

Without limitation to any other privilege of the Town, and notwithstanding whether a submitted Tender otherwise satisfies the requirements of the Tender or not, the Town may instantly reject any Tender from a bidder where in the opinion of Council, the affiliation between the Town and said bidder has been damaged by prior or current acts or omission of said bidder, including but not limited to:

- a) Litigation with the Town
- b) The failure of the bidder to pay, in full, any outstanding payments, interests, and costs owing to the Town after the Town has requested payment of same
- c) The refusal of the bidder to enter into the contract with the Town after the bidder's Tender has been accepted by the Town
- d) The refusal of the bidder to perform or complete performance of a contract with the Town at any time after the bidder has been awarded the contract by the Town
- e) The refusal of the bidder to follow logical directions of the Town or to alleviate a default under any contract with the Town when required by the Town or the Town's representative
- f) Acts or omissions by the bidder resulting in a claim by the Town under a bid bond, performance bond or any other security required to be submitted by the bidder on a tender, RFP or RFQ within a five year period immediately preceding the date on which the tender, RFP or RFQ is awarded

30. TENDER ACCEPTANCE OR REJECTION

It is understood that the Corporation of the Town of Amherstburg is not bound to accept the lowest, or any bid submission.

Reporting and authorization of resulting contracts shall be conducted in accordance with the Town's Procurement Policy.

A Tender is accepted by the Town when the agreement is executed by the Town and the successful bidder; or upon written authorization from the Town within the 90 day validity period, where the Town has issued a written order to commence work to the successful bidder. The acceptance of the Tender is also conditional upon the receipt of a Performance Bond (if required), and Labour and Material Payment Bond (if required).

The Town is not responsible for any liabilities, expenses, loss or damage to the Bidder subsequent to or by reason of the acceptance or non-acceptance by the Town of any Tender or by reason of any delay in the acceptance of a Tender. Tenders are subject to a formal contract being prepared and executed.

If an insufficient number of Tenders are received, Tenders may be returned unopened.

31. TENDER RESULTS

A Council report indicating the results of this Tender shall be a matter of public record. The results of the Tender, when requested, may be made public by the Town, and may contain the Total Tender price.

The name of the successful bidder and the contract price shall be deemed public information following the award of contract, however unit prices contained in the form of Tender will not be released.

Unsuccessful bidders may request information regarding their Tender evaluation from the Corporate Contact.

32. AGREEMENT

The successful bidder will be required to enter into an agreement with the Town upon acceptance of their Tender. An agreement will be executed in quadruplicate by the Town and will be provided to the Contractor in the executed contract.

If a mathematical error has been found in the Contractor's submission and has been properly corrected and initialed by the bidder, the price stipulated in the agreement will be the corrected price.

33. CONTRACT EXECUTION

Upon approval of the award of contract, the successful bidder will be notified by the Town that their Tender has been accepted and an official award of contract letter will be provided.

The successful bidder will be given no more than fourteen days from the receipt of the contract documents for execution of the contract documents and to provide the necessary guarantees, insurance, etc. Failure to execute the contract documents, and failure to provide the required guarantees, insurance, etc. within the specified time may result in forfeiture of the Tender deposit (if applicable). No work shall commence on the project until the documents have been executed by the bidder and the insurance and guarantees have been received.

There shall be no variation or substitution from this Tender unless approved in writing by the Town.

Receipt of materials, equipment, work or service will not waive any of the requirements of the contract. Defective goods, materials, or equipment found will be returned at the risk of the supplier and at the supplier's expense.

Failure to deliver or complete the terms of the contract outside of the stipulated project schedule shall entitle the Town to cancel the contract without being liable for any costs, fees, or charges of any kind.

In the event of labour or supplier strikes, or unexpected events that cease work, the Town reserves the right to suspend this contract.

34. BIDDER DECLARATION

The bidder, by submission of a Tender, declares that:

- a) The bidder has carefully reviewed the required deliverables and specifications in accordance to this Tender
- b) No one other than the bidder has any interest in this Tender or in the assignment of the pending contract from this Tender
- c) That all representation in the Tender submission are true and factual
- d) The bidder and their heirs, administrators, successor, executor and assigns are to forfeit all claims against the Town under the contract. This includes claims for all work done and/or supplies and/or service provided under the contract should it seem that a member of Council or a Town employee has been furnished with a direct or indirect financial benefit.

35. CONFLICT OF INTEREST

Contractors participating in this Tender process shall disclose, prior to entering into an agreement, any potential direct or indirect conflict of interest. If such a conflict exists, the Town of Amherstburg may, at its discretion, withhold the award of a contract from the Contractor until the matter is resolved. If the conflict is deemed to remain unresolved, and the Town deems it necessary, the Town reserves the right to withhold the award of contract to the bidder altogether and provide the contract to the next qualified bidder.

36. SUBCONTRACTORS OR SUPPLIERS

If the Contractor proposes to use any product or services from another firm or subcontractor for any part of the work, other than those listed in the Form of Tender, the contractor must request approval in writing from the Project Manager. The Owner reserves the right at any time to object or refuse to accept any subcontractor, firm or supplier for inclusion in the work and shall not be required to give a reason for such objection or refusal.

No substitute for any firm, subcontractor or supplier shall be allowed without written consent from the Project Manager. Nothing contained in the contract documents shall create any contractual relationship between any subcontractor, firm or supplier and the Owner. Should the contractor request to change any subcontractor, firm or supplier, the Owner will not be responsible for any additional costs incurred by the contractor as a result of this request.

37. CONTRACTOR'S LIABILITY

The successful Bidder, his agents, employees, or persons under his control including sub-contractors, shall use due care that no person or property is injured and that no rights are infringed in the prosecution of the work. The Contractor shall be solely responsible for all damages, by whomsoever claimable, in respect to any injury to persons or property of whatever description and in respect of any infringement of any right, privilege or easement whatever, occasioned in the carryon of the work, or by any neglect on the Contractor's part.

38. INDEMNIFICATION

The Contractor will indemnify and save harmless the Town, its officers, partners, agents, employees and Council members from and against all claims, demands, losses, damages, costs, expenses, actions and suits that may arise, directly or indirectly from its performance of the contract or by reason of any matter or thing done, permitted or omitted to be done by the Contractor, its sub-contractors or their agents or employees with respect to the contract.

39. ERRORS AND OMISSIONS

The Town shall not be held liable for any errors or omissions contained in any part of this Tender. The Town has put forth significant effort to ensure accurate data in this Tender. The information contained in this Tender is supplied exclusively as parameters for bidders. The information contained in the Tender documents is not guaranteed or warranted to be accurate, nor is it necessarily comprehensive. No information provided in the Tender is intended to relieve the bidder from forming their own conclusions with respect to the matters contained therein.

40. CONTRACT DOCUMENTS

The Proponent shall take note that the Contract Documents shall include a Contract Agreement, a Certificate from the Workplace Safety & Insurance Board, a Certificate of Insurance, Labour and Materials Payment Bond and a Performance Bond, all to be furnished by the Contractor in a form satisfactory to the Owner's solicitor. The Proponent shall consult with the Owner's solicitor as to the forms required for the Contract and the Proponent shall not qualify his Quotation in respect to these matters.

41. LIQUIDATED DAMAGES

If the works are not entirely completed by **September 1, 2017** the contractor's payment will be reduced for liquidated damages in the amount of \$1,000.00 for each day beyond **September 1, 2017** until such time the Town indicates the project has been completed.

42. PROJECT COMMENCEMENT AND COMPLETION DATE

This project shall not proceed until July 1, 2017 and must be complete in every respect by September 1, 2017. Once mobilized, the contractor must remain on site until the work is completed.

43. OCCUPATIONAL HEALTH AND SAFETY ACT

The contractor shall comply with all requirements of the Occupational Health and Safety Act, 1990 and Regulation for Construction Projects and Amendments, as administered by the Ontario Ministry of Labour and all subsequent amendment of said act. In the event that the contractor fails to comply with the requirements of the above mentioned act, the Town may suspend the continuation of the work forthwith and the suspension will remain in effect until the contractor has taken whatever remedies are necessary to comply with said act. Suspension of the work by the Town on account of the provisions of this clause, shall not allow the contractor an extension of the time of completion and the contractor may be liable for liquidated damages to the Town.

44. PROCUREMENT POLICY BY-LAW / GOVERNING LAW

Tenders will be called, received, evaluated, accepted and processed in accordance with the Town's Procurement and Purchasing Policy, respecting purchasing (copy available upon request). By submitting a Tender for this subject, the Contractor agrees to be bound by the terms and conditions of such Policy and any amendments thereto, as fully as if it were incorporated herein.

Any Contract resulting from this Request for Tender shall be governed by and interpreted in accordance with the laws of the Province of Ontario.

45. ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT (AODA)

The Contractor shall ensure that all its employees, agents, volunteers, or others for whom the Contractor is legally responsible receive training regarding the provision of the goods and services contemplated herein to persons with disabilities in accordance with Section 6 of Ontario Regulation 429/07 (the "Regulation") made under the Accessibility for Ontarians with Disabilities Act, 2005, as amended (the "Act"). The Contractor shall ensure that such training includes, without limitation, a review of the purposes of the Act and the requirements of the Regulation, a review of the Town's Policy on Accessible Customer Service Standards, as well as instruction regarding all matters set out in Section 6 of the Regulation.

The Contractor shall also maintain a record of all training provided to the Contractor's personnel on the Town's accessible customer service standards as required under this section, which shall include at a minimum the dates on which the training was provided and the number of individuals to whom the training was provided. The Vendor shall furnish any required records of accessible customer service training to the Town within ten (10) days of the Town's request, unless otherwise agreed upon by the Town. The Town reserves the right to require the contractor to amend its training policies to meet the requirements of the Act and the Regulation.

The Town's Accessible Customer Service Standards Policy has been provided in Appendix B.

Information on accessible customer service training is available online from the Ministry of Community and Social Services at www.accesson.ca/index.aspx.

FORM OF TENDER

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN**

T11-2017-002

FORM OF TENDER

CONTRACTOR IDENTIFICATION SHEET

BUNINESS NAME OF CONTRACTOR:	SLR CONTRACTING GROUP INC.
MAILING ADDRESS OF CONTRACTOR (including postal code):	6260 WEBSTAR DR. WINDSOR, ON, N9S 5W3
NAME OF CONTACT PERSON REPRESENTING CONTRACTOR:	DAVID SKILLINGS
TELEPHONE NUMBER & EXTENSION OF PERSON REPRESENTING CONTRACTOR:	519-257-3490
FAX NUMBER OF CONTRACTOR:	519-978-3111
EMAIL ADDRESS OF PERSON REPRESENTING CONTRACTOR:	dskillings@slrcontracting.ca
NAME OF PERSON SIGNING ON BEHALF OF CONTRACTOR:	PAUL ROBINSON
TITLE OF PERSON SIGNING ON BEHALF OF CONTRACTOR:	VICE - PRESIDENT

SIGNATURE OF PERSON AUTHORIZED TO ACT ON
BEHALF OF PROPONENT:



CORPORATE SEAL:

(Please affix Corporate Seal)

If a corporate seal does not exist, please acknowledge the following:

*"The signature of the person applied to this proposal document is authorized to act
on behalf of the proponent and is legally able to bind the company."*

_____ Signatory Initials

TENDER PRICE

We the undersigned, having examined the locality and site of the Works, Drawings and Specifications as prepared by The Town of Amherstburg and hereby offer to furnish all materials including all appropriate sales taxes and perform all the work necessary as described in the above documents and in accordance with the said documents under the supervision of the Project Manager of the Town of Amherstburg, made up as follows:

ITEM NO.	SPEC PROV.	SUB	DESCRIPTION	UNITS	ESTIMATED QUANTITY	UNIT PRICE	AMOUNT	
GENERAL								
1	-		Mobilization and demobilization	L.S.	1	\$ 4000	\$ 4000	✓
2	1		Supply, install, remove and operate drain diversion	L.S.	1	\$ 4000	\$ 4000	✓
3	2, 3		Traffic Control Plan and Implementation	L.S.	1	\$ 3000	\$ 3000	✓
4	4		Environmental protection	L.S.	1	\$ 500	\$ 500	✓
5	5		Clearing and grubbing as needed for access	L.S.	1	\$ 1500	\$ 1500	✓
6	17		Restoration	L.S.	1	\$ 500	\$ 500	✓
7	21		Expose utilities on site	Hours	4	\$ 350	\$ 1400	✓
PAVEMENT WORKS								
7	6		Removal of pavement	m ²	140	\$ 3	\$ 420	✓
8	7.8		Removal of road base	m ³	77	\$ 70	\$ 5390	✓
9	15		New road base	Tonnes	175	\$ 30	\$ 5250	✓
10	16		New asphalt pavement	Tonnes	37	\$ 250	\$ 9250	✓

CONTINUES ON NEXT PAGE

REMOVALS							
11	9		Earth excavation and grading off including disposal of extra material Culvert #7	L.S.	1	\$ 5000	\$ 5000 - ✓
12	10		Remove existing culvert and structures Culvert #7	L.S.	1	\$ 4000	\$ 4000 - ✓
DRAINAGE WORK							
13	14		Cleaning and reshape drain at Culvert	L.S.	1	\$ 3000	\$ 3000 - ✓
CULVERT RECONSTRUCTION							
14	11		Supply and install precast culvert with backfill and subbase	L.S.	1	\$ 65000	\$ 65000 - ✓
15	12		Supply and install waterproofing and protection board	m ²	101	\$ 60 -	\$ 6060 - ✓
16	13		Supply Riprap and filter cloth as shown	m ²	450	\$ 25 -	\$ 11250 - ✓
17	19		Installation of replacement culvert pipe at existing	LS	1	\$ 3000	\$ 3000 - ✓
18	20		Precast retaining wall structures	LS	1	\$ 10,000	\$ 10,000 - ✓
PROVISIONAL							
19	-		Fish Salvage	EACH	1	\$ 2500	\$ 2500 - ✓
20	18		Install Energy Attenuation and guiderail	L.S.	1	\$ 15,000	\$ 15,000 - ✓
21	13		Rip Rap and filter cloth installation north of site	m ²	45	\$ 30 -	\$ 13500 ✓
22	-		Testing Allowance	L.S.	1	\$ -	\$ 4,000.00
23	-		CONTINGENCY ALLOWANCE	L.S.	1	\$ -	\$ 25,000.00
TOTAL TENDER PRICE EXCLUDING HST						\$	190,370.00 ✓
H.S.T. (13%)						\$	24,748.10 ✓
TOTAL TENDER PRICE INCLUDING H.S.T.						\$	215,118.10 ✓

CONTINUES ON NEXT PAGE

SIGNATURE OF PERSON AUTHORIZED TO ACT ON
BEHALF OF PROPONENT



CORPORATE SEAL:

(Please affix Corporate Seal)

If a corporate seal does not exist, please acknowledge the following:

*"The signature of the person applied to this proposal document is authorized to act
on behalf of the proponent and is legally able to bind the company."*

_____ *Signatory Initials*

CONTRACTOR'S QUALIFICATIONS AND EXPERIENCE

Please include a list of other similar projects and services completed by your firm and for whom the services were provided, when they were provided, and the approximate value of services provided.

1. AMHERSTBURG CULVERT REPLACEMENT PROGRAM

- REPLACEMENT OF CULVERT STRUCTURES

- ROAD RECONSTRUCTION

- \$887,000

- TOWN OF AMHERSTBURG

2. CULVERT C-42-052 REPLACEMENT

- REPLACEMENT OF PRECAST STRUCTURE

- ROAD RECONSTRUCTION

- \$682,000

- COUNTY OF ESSEX

3. REPLACEMENT OF BRIDGE 004-0163

- REPLACEMENT OF PRECAST STRUCTURE

- \$790,294

- COUNTY OF DUFFERIN

*Provide any attachments in this regard immediately following this sheet

REFERENCES

Provide a minimum of three (3) separate references for related projects successfully completed by the contractor. Note that the references may be contacted.

Reference No.1

Company Name: COUNTY OF ESSEX

Address: 360 FAIRVIEW AVE. WEST, ESSEX, ON

Contact Name & Title: PETER BEWIK, MANAGER OF ENGINEER

Telephone Number: 519-776-6441 Fax Number: 519-776-4455

Description of Project: PRECAST CULVERT REPLACEMENT,
PRECAST BLOCK WALL INSTALLATION, ROAD
RECONSTRUCTION

Date of Project: 2016, JULY

Reference No.2

Company Name: BURNSIDE ENGINEERING

Address: 15 TOWNHIDE, ORANGETHORN, ON

Contact Name & Title: CHRIS KNECHTEL, PROJECT ENGINEER

Telephone Number: 519-941-5331 Fax Number: 519-941-8120

Description of Project: PRECAST CULVERT REPLACEMENT
PRECAST RETAINING WALLS, ROAD
RECONSTRUCTION, SHEET PILING

Date of Project: DECEMBER, 2016

REFERENCES- (cont'd)

Reference No.3

Company Name: WSP/MMM GROUP

Address: 610 CHARTWELL DR., OAKVILLE, ON

Contact Name & Title: SUNIL KOIRALA, PROJECT ENGINEER

Telephone Number: 905-823-8500 Fax Number: 905-823-8503

Description of Project: PRECAST CULVERT REPLACEMENT
ROAD RECONSTRUCTION, SHEET PILING,
RSS WALL INSTALLATION

Date of Project: DECEMBER 2016

**Provide any attachments in this regard immediately following this sheet*

**ACKNOWLEDGEMENT OF TENDER DOCUMENTS AND ADDENDA
RECEIVED BY CONTRACTOR**

I/We, the undersigned, hereby acknowledge and confirm on behalf of _____

SLR CONTRACTING GROUP INC

That I/We have received all of the documents noted in the Table of Contents contained in this document and have been provided with all of the details required to permit me/us to submit a bid on Request for Tender.

1. I/We declare that this bid is made without any connection, knowledge, comparison of figures or arrangements with any other company, firm or person submitting a Tender for the supply of the same goods and services.
2. I/We declare that I/We have carefully read this document and have satisfied ourselves as to the nature of the goods and services required and do hereby make our bid to the Corporation of the Town of Amherstburg for the goods and services described herein.
3. I/We acknowledge that we have received the following addendum to this Request for Tender and that it is my/our responsibility to ensure that all addenda issued by the Corporation of the Town of Amherstburg has been received.

Receipt of Addendum No: 1 to 1.

Witness (if applicable)



Signature



Dated:

2017-05-11

Name & Position (please print)

PAUL K. ROBINSON
VICE PRESIDENT



ZURICH

Zurich Insurance Company Ltd
100 King St. W., Suite 5500, P.O. Box 290, Toronto, ON M5X 1C9

BID BOND
CCDC 220 - 2002

No. 6328782-72

10%

SLR CONTRACTING GROUP INC. as Principal, hereinafter called the Principal, and **Zurich Insurance Company Ltd**, a corporation created and existing under the laws of Switzerland and duly authorized to transact the business of Suretyship in Canada as Surety, hereinafter called the Surety, are held and firmly bound unto **THE CORPORATION OF THE TOWN OF AMHERSTBURG** as Obligee, hereinafter called the Obligee, in the amount of **TEN PERCENT OF THE AMOUNT OF TENDER-----00/100 Dollars (10%)** lawful money of Canada, for the payment of which sum the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally.

WHEREAS, the Principal has submitted a written bid to the Obligee, dated 11 day of **MAY**, in the year **2017** for

T11-2017-002 - CULVERT #7 REPLACEMENT - 6TH CONCESSION SOUTH OVER ALBERT MCGEE DRAIN

The condition of this obligation is such that if the Principal shall have the bid accepted within the time period prescribed in the Obligee's bid documents, or, if no time period is specified in the Obligee's bid documents, within **NINETY (90)** days from the closing date as specified in the Obligee's bid documents, and the Principal enters into a formal contract and gives the specified security, then this obligation shall be void; otherwise, provided the Obligee takes all reasonable steps to mitigate the amount of such excess costs, the Principal and the Surety will pay to the Obligee the difference in money between the amount of the bid of the Principal and the amount for which the Obligee legally contracts with another party to perform the work if the latter amount be in excess of the former.

The Principal and Surety shall not be liable for a greater sum than the Bond Amount.

It is a condition of this bond that any suit or action must be commenced within seven (7) months of the date of this Bond.

No right of action shall accrue hereunder to or for the use of any person or corporation other than the Obligee named herein, or the heirs, executors, administrators or successors of the Obligee.

IN WITNESS WHEREOF, the Principal and the Surety have Signed and Sealed this Bond dated 5th day of May, in the year 2017.

SIGNED and SEALED
in the presence of

SLR CONTRACTING GROUP INC.

Signature

PAUL K. ROBINSON

Name of person signing

Zurich Insurance Company Ltd

Signature

ANTONELLA TOPPI, Attorney-in-fact

Name of person signing

(CCDC 220 – 2002 has been approved by the Surety Association of Canada)

Zurich Insurance Company Ltd

Surety Department
First Canadian Place
100 King Street West
Suite 5500, P.O. Box 290
Toronto, ON M5X 1C9



Bond Number: 6328782-72

Zurich Insurance Company Ltd

RE: Notice under Part XIII of the Insurance Companies Act (Canada)

For purposes of the Insurance Companies Act (Canada), this document was issued in the course of Zurich Insurance Company Ltd's insurance business in Canada.

FORM OF AGREEMENT

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN**

T11-2017-002

AGREEMENT

THIS AGREEMENT made in quintuplicate this 23rd day of May, 2017.

BETWEEN THE CORPORATION OF THE TOWN OF AMHERSTBURG

(hereinafter called the Corporation) of the first part.

AND

SLR CONTRACTING GROUP INC.

(hereinafter called the Contractor) of the second part.

WHEREAS the Corporation is desirous that certain works should be designed for the implementation of:

**CULVERT #7 REPLACEMENT – 6TH CONCESSION SOUTH
OVER ALBERT MCGEE DRAIN
T11-2017-002**

In the Town of Amherstburg and has accepted a Quotation by the Contractor for this purpose.

NOW THIS AGREEMENT WITNESSES AS FOLLOWS:

The Contractor hereby covenants and agrees to provide and supply at his expense, all and every kind of labour and materials for, and to undertake and complete in strict accordance with his Tender submitted to the Town on the:

11th day of May, 2017

And the Agreement Documents (consisting of the contents and requirements for this Tender, including all modifications thereof and incorporated in the said documents before their execution) prepared by the Town of Amherstburg and all of which said documents are annexed hereto and form part of this Agreement to the same extent as fully embodied herein, the construction of the above noted works for the sum of:

One Hundred and Ninety Thousand, Three Hundred and Seventy Dollars (\$ 190,370.00)
excluding H.S.T.

The Contractor hereby covenants and agrees with the Corporation in the following manner:

(1) To execute and perform the whole of the work herein mentioned in a workmanlike manner, in strict accordance with the provisions of this Agreement, including the said Specifications,

General Conditions and the Plans (where applicable) therein referred to. The Contractor shall, in the execution and performance of the said work perform, observe, fulfill and abide by all the covenants, agreements, stipulations, provisions and conditions mentioned and contained in this Agreement.

(2) The Contractor will indemnify and save harmless the Town, its officers, partners, agents, employees and Council members from and against all claims, demands, losses, damages, costs, expenses, actions and suits that may arise, directly or indirectly from its performance of the contract or by reason of any matter or thing done, permitted or omitted to be done by the Contractor, its sub-contractors or their agents or employees with respect to the contract.

(3) To pay to the Corporation, on demand, all loss, costs, damages or expenses incurred by the Corporation or any of its officers, servants or agents in consequence of any such action, suit, claim, lien, execution or demand, and any monies paid or payable by the Corporation or any of its officers, servants or agents in settlement or in discharge thereof, or on account thereof. If in default of said monies so paid or payable by the Corporation, its officers, servants or agents, including any monies payable by the Contractor under any of the terms and conditions of the Contract, these said monies may be deducted from any monies of the Contractor then remaining in possession of the Corporation on account of this or any other Contract, or may be recovered from the Contractor or the Surety named in the Bond hereto attached in any court of competent jurisdiction and monies paid at their request.

The Corporation covenants with the Contractor that if the said work, including all extras in connection therewith, shall be duly and properly executed as aforesaid, the Corporation will pay the Contractor the Contract price mentioned in said tender (which are to apply to all extras of the character specified in the schedule of rates forming part of said Tender). Payment shall be made in the manner, subject to drawbacks and liquidated damages mentioned in the said General Conditions, upon estimates or certificates signed by the Engineer, issued in accordance with the conditions incorporated with and made part of this Agreement.

No monies shall become due or be payable under this Agreement unless and until an estimate or certificate therefore shall have been signed by the said Engineer, the possession of which is hereby made a condition precedent to the right of the Agreement to be paid or to maintain any action for such money or for any part thereof, the Corporation shall not be liable or compelled to pay for any extras or additional work not included in this Agreement, except only in the manner and as provided for herein. The Corporation shall not be liable or compelled to grant or insure any estimate or certificate for work rejected or condemned by the said Engineer or to pay any money therefore until the work so rejected or condemned has been replaced by new material and workmanship to the written satisfaction of the said Engineer. It is hereby expressly provided that the granting of any estimate or certificate, or the payment of any monies thereunder, shall not be construed as an acceptance of any bad or defective work or material, to which the same relates, or as an admission of liability to pay any money in respect thereof, and shall not in any manner lessen the liability of the Contractor to replace such work

or material, although the condition of the same may not have been known to, or discovered by the said Engineer at the time such estimate or certificate was granted, or monies paid thereon.

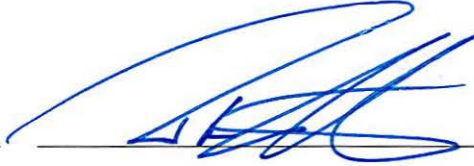
AND it is understood and agreed between the parties hereto as follows:

That this Agreement, and the covenants and conditions herein, and in the said General Conditions contained shall extend to and be binding upon the heirs, executors, administrators, successors and assigns, of the said Contractor and the Corporation respectively. In this Agreement, and in the Contract, of which this Agreement forms a part, the words, "person", "plans", "shall", "may", "herein", "work", "Contract", "Contractor", "Inspector", "Engineer", and words used in the singular number of the masculine gender, shall have the meaning and effect given them in the General Conditions hereto annexed or in the Interpretation Act of the Revised Statutes of Ontario.

IN WITNESS WHEREOF the parties hereto have hereunto affixed their Corporate Seals, if any, duly attested by the signature of their proper officers in that behalf, respectively.



WITNESS AS TO SIGNATURE OF
CONTRACTOR



Contractor's Signature and Seal

SLR Contracting Group

Contractor's Name

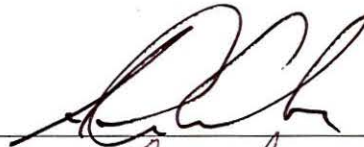
6260 Westar Drive, Windsor Ontario N9J 3W3

Contractor's address

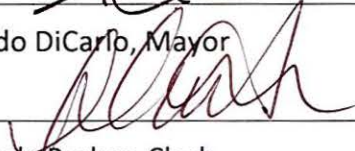
CORPORATION OF THE TOWN OF AMHERSTBURG



WITNESS AS TO SIGNATURE OF
CORPORATION



Aldo DiCarlo, Mayor



Paula Parker, Clerk

GENERAL SPECIAL PROVISIONS

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN**

T11-2017-002

GENERAL SPECIAL PROVISIONS

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GENERAL SPECIAL PROVISIONS

The Contractor shall note that the following are the Specific Contract General Provisions.

1. GENERAL

These General Special Provisions shall apply to and form part of this Contract and in case of conflict shall supersede the Standard Specifications pertaining to the Contract.

2. PRIVATE PROPERTY

The Contractor shall assume full responsibility for crossing or making use of private property. Before the Contractor or any of his sub-contractors shall make use of any private property for any purpose, he shall first submit to the Consultant a copy of a written agreement granting permission by the Owner.

3. PEDESTRIAN AND VEHICULAR ACCESS

The Contractor shall be required to provide for pedestrian and vehicular access to private homes, business premises and through the construction work to streets where and as directed by the Consultant. This may require the provision of adequate temporary board walks, steps or ramps where necessary to allow pedestrian and/or vehicular access to new houses and business premises temporarily cut off from normal traffic due to new construction.

4. FIRST AID EQUIPMENT

The Contractor shall provide and maintain the necessary first aid items and equipment as called for under the First Aid Regulations of the Workplace Safety and Insurance Act.

5. EMERGENCY TELEPHONE NUMBER

The Contractor shall have a representative from his staff on call, 24 hours a day, and seven days a week. The representative should be familiar with the project, and be able to handle any emergency that may arise during the course of the project.

6. COMPACTION OF MATERIALS

All Contract references to maximum compacted densities by whatever method specified, shall be interpreted as being “the maximum dry density as determined by current A.S.T.M. procedures”. Current A.S.T.M. procedures shall mean the methods described in the current A.S.T.M. Standard D698-66T or “The Constant Dry Weight Method” as set out in Research Report No. 141 by the Ministry of Transportation and Communications. Any deviation between current A.S.T.M. procedures and methods formerly specified or any modifications to current A.S.T.M. procedures which may be introduced shall be for the purpose of increasing the reliability of the test results and speed in field testing and will result in no increase in the compactive effort required.

When it is impossible to compact earth or granular materials immediately adjacent to footings, abutments, wingwalls, piers, pipe culverts, retaining walls, sewers, manholes, catchbasins, etc., with the larger types of compaction equipment, the Contractor shall provide and use mechanical hand compaction equipment as directed by the Consultant and shall perform the compaction to his satisfaction as required. No separate payment shall be made for the compaction of Sand Cushion, Selected Granular Base Course Class “A” or “B” granular backfill to structures or granular backfill to sewers, manholes, catch basins or sub-drains, except where otherwise provided for in the contract.

7. CONFLICTS AND OMISSIONS

The Contractor shall do all work and furnish all materials in accordance with the best practice and in the event of any inconsistency or conflict in the provisions of the plans or specifications such provisions shall take precedence and govern in the following order:

- .1 Special Provisions
- .2 Plans
- .3 Standard Specifications
- .4 Form of Tender
- .5 General Conditions

Neither party to the Contract shall take advantage of any apparent error or omission in the plans or specifications, but the Consultant shall be permitted to take such corrections and interpretations as may be necessary for fulfillment of the intent of the plans and specifications. Any work or material not included herein but which may be fairly implied as included in this Contract, of which the Consultant shall be the judge, shall be done or furnished by the Contractor as if such work or materials has been specified.

8. EXCESS MATERIALS

All materials determined to be excess by the Consultant, including earth and rock excavations, broken concrete, rubble and broken asphalt, shall be removed from the work by the Contractor. He shall make his own arrangement as to disposal, but must comply with Municipal regulations.

The cost of removal and disposal of excess materials shall be included in the Contractor's tendered prices.

9. PROGRESS SCHEDULE

The Contractor shall be required to submit a progress schedule to the Consultant for approval prior to commencement of the work. Such schedule shall be in a form acceptable to the Consultant, and shall indicate clearly the proposed order and time allowance for the various phases of the work, in sufficient detail to show weekly progress.

The approval of the progress schedule by the Consultant shall not cast any responsibility upon the Consultant or the Owner in seeing to it that the progress schedule is adhered to since timely execution of the work is the entire responsibility of the Contractor. The Consultant may, in his discretion, vary the progress schedule in whole or in part without relieving the Contractor from any of his responsibility to execute the Contract in a timely way, nor shall such variation cast any responsibility whatsoever upon either the Consultant or the Owner.

10. PAYMENT FOR TESTING

The following tests called for and required by the Consultant, will be paid for by the allowance:

- .1 Compaction tests. If the result of any compaction test is below that specified, the Consultant may call for retesting, and all costs associated with such retesting shall be paid for by the Contractor.
- .2 Analysis of granular materials and approval of sources. Limit of one analysis per source of material.
- .3 Analysis of aggregates for asphalt mix design. Limit of one analysis per class of asphalt.

If the results of any test are below that specified, the Consultant may call for retesting and the Contractor shall pay all costs associated with such retesting.

11. CONSTRUCTION SAFETY

The Contractor's attention is directed to the Occupational Health for Construction Projects Safety Act, 1978 and to the Regulations proclaimed thereunder.

12. EXTRA WORK

Extra work is work which is required, but not described in the Contract Documents or on the plans.

No work shall be regarded as extra work unless it is approved in writing by the Consultant, and with the agreed price and method of payment for it specified in the said approval, provided the said price is not otherwise determined by this Contract.

All notifications of claims for extra work shall be made to the Consultant before the extra work is started. Notwithstanding anything contained in the General Conditions, when it is necessary to perform work additional to the Tender items, unit prices to cover the cost of the work shall be negotiated whenever possible.

Where it is impracticable, due to the nature of the work, to negotiate unit prices for extra work not included in the Tender, the cost of the additional work may be paid for by a force account, previously agreed upon and authorized by an order issued prior to carrying out the work, and for which payment is based on hourly rates for labour and equipment and on material invoices.

13. CLAIMS

If a Contractor considers that he has a claim for compensation for costs which he has incurred or for loss he has suffered during the performance of the Contract, he should immediately advise the inspector of his intent to claim on any specific portion of the Contract and he should also advise the Consultant in writing of the said intent within seven (7) calendar days of the commencement of the work on which he intends to claim. He shall submit his claim not later than thirty (30) days after the date of his receipt of the final detailed statement for the entire work.

Where notice of claim is not given or the claim is not submitted within the periods prescribed by this section, the claim may be disallowed.

14. LINES AND GRADES

The Consultant will provide base lines, monuments and bench marks as shown on the Drawings required by the Contractor for establishing line and grade.

The Contractor shall provide qualified personnel to properly lay out and establish secondary lines and grades necessary for construction. He shall construct and maintain substantial batter boards, alignment markers and secondary bench marks as may be required for the proper execution of the Contract.

15. SITE MEETINGS

Site meetings shall be held at regular intervals as further described by the Consultant. The Contractor shall provide a responsible representative for such meetings.

16. RELOCATION OF SIGNS, MAILBOXES, ETC.

The Contractor shall take note that all existing signs and mailboxes, etc. in the direct work area shall be removed during the course of the work and after completion of same, the Contractor shall be required to reinstall them to their proper location in accordance with the requirements of the Ministry of Transportation of Ontario, the Federal Postal Service, or any other regulatory body having jurisdiction. The cost for this work shall be deemed to be included in the overall tender price and no additional payment will be made.

17. REMOVAL OF TREES

Whenever practical, in the opinion of the Consultant, existing trees will be preserved. The Contractor shall exercise the utmost caution to ensure that the trees are not damaged or disturbed.

18. WORK IN OPEN TRENCHES

The Contractor's attention is drawn to the regulations issued by the Ministry of Labour for the Province of Ontario in regard to work in open trenches, tunnels and open caissons. The Contractor's attention is also directed to the Construction Safety Act in regard to work in open trenches.

19. CONTROL OF WATER

The Contractor shall be solely responsible for ensuring that all work is carried out in the dry and that partially completed work shall remain dry. The method or methods of controlling surface or subsurface water shall be by pumping, ditching, dyking, close sheet piling, or a combination of these or other methods as may be approved by the Consultant.

20. DEFECTIVE WORK

The Contractor shall at any time when directed by the Consultant make openings for inspection to any part of the work. Should the work be found, in the opinion of the Consultant, defective in any respect, the whole of the work shall be corrected to the satisfaction of the Consultant and at the expense of the Contractor.

21. WATER, SNOW AND ICE

The Contractor shall assume full responsibility for all damages done to the works through the influence of water, snow and ice. He shall immediately make good any damage so caused without extra cost to the Owner.

If the Contractor continues his construction operations in freezing weather, special precautions shall be taken to prevent damage to the works. No pipe shall be laid in trenches on a frozen subgrade or base course. All work shall be protected during freezing weather with straw, tarpaulins, wet steam or by any combination thereof as considered necessary for the protection of the works by the Consultant. The cost of all such special precautions shall be included in the Tender Price submitted by the Contractor.

22. PROVISIONS FOR TRAFFIC AND SIGNING

The Contractor shall, without notice or order from the Consultant, and at his own expense, provide, erect and maintain adequate traffic protection signs, barricades and lights to ensure safety to the public. The Contractor shall designate an employee to be responsible for the protection of devices at night, on Sundays and holidays. All barricades and obstructions shall be illuminated at night and all lights shall be kept burning from sunset to sunrise. The Contractor shall be responsible for all accidents or expenses arising by reason of neglect or failure to comply with this clause.

23. FISH SALVAGE

A fish rescue and relocation should be conducted once the work area is isolated. Any fish rescued will be released downstream of the isolated work area. If flows in the drain overtop the isolation barrier, a fish rescue and relocation will need to be conducted again. The Contractor is to contact the designated company to transport fish once the work area is isolated, if the isolation area is breeched, or if any fish are found while working the construction zone. Fish salvage will be paid at the unit rate in the Form of Tender.

24. SEASONAL PRICING

The Contractor's bid prices are considered to have taken into account prevailing weather conditions. No compensation or time extensions will be considered.

25. PROJECT SCHEDULING

A commencement date of July 1, 2017 and a completion date of September 1, 2017 should be considered for this project. The successful Tenderer must ensure that unit prices reflect this proposed construction schedule, unless otherwise specified in other items of the General Special Provisions or the Special Provisions.

Tenderers are advised to inform their Sub-Contractors of the above requirement.

Any materials placed in cold weather that are either not properly protected (for concrete work) or cannot be properly compacted (for granular materials and asphalt) will be rejected by the Consultant.

In the opinion of the Consultant, when it becomes evident that the Contractor's construction methods relative to weather conditions are likely to result in unnecessary hardship and inconvenience to the residents and motoring public, the Corporation of the Town of Amherstburg reserves the right to dictate the construction methods used, and/or stop work on the project. The Contractor shall note that every effort should be made to minimize the construction effects on routine local traffic flows.

Upon award of the tender, the Contractor is to submit a proposed schedule of work that outlines how the Contractor will comply with this requirement.

26. STAGING OF CONSTRUCTION

The Contractor shall submit a detailed construction schedule including construction methods and staging.

27. AGENCY APPROVALS

This project is subject to approvals from the Corporation of the Town of Amherstburg, Essex Region Conservation Authority (ERCA), Ministry of Natural Resources (MNR) and the Department of Fisheries and Oceans Canada, as required.

During the execution of this project, the Contractor shall be bound to comply with all conditions of approval including the preparation and implementation of any supplement plans required by the approval agencies.

28. WORKING HOURS

Working hours shall be scheduled to comply with applicable local noise by-laws.

No work is permitted on Sundays and statutory holidays.

29. ENVIRONMENTAL PROTECTION

In general, the Contractor shall satisfy the requirements of the Ministry of the Environment in protecting air, land and water.

The Contractor shall control dust nuisance resulting from their operations. Water or calcium chloride solution shall be applied to areas as authorized by the Consultant as being necessary and unavoidable for the prevention of dust nuisance or hazard to the public caused by the Contractor.

The Contractor shall make all efforts to minimize the disruption to fish habitat.

The Contractor shall not kill any wildlife species of any kind.

The Contractor shall be responsible for implementing and conducting his operations, and those of any Subcontractor, in conformance with the Environmental Mitigation Plans enclosed with this document as Appendix A.

The following is a list of minimum environmental protection measures to be implemented on site by the Contractor while executing this project. The Contractor shall be responsible for providing, implementing and maintaining any additional requirements mandated by the regulatory authorities:

- Do not direct or block watercourses with the exception of the cofferdam and diversion line with pump.
- A contingency plan to ensure that the maintenance activities do not create any obstruction to flows in the event of a major storm.
- Work may not be conducted at times when flows are elevated due to local rain events, storms or seasonal floods. Work shall not be undertaken between March 15 and June 30.
- All disturbed soils on both banks and within the channel, including spoils, must be immediately stabilized upon completion of work. The restoration of the site must be completed to a similar or better condition than what existed prior to the work.
- To prevent entry of sediment into the drain, in the event of an unexpected rainfall, silt barriers and/or traps must be placed in the channel during the work and until the site has been stabilized. It is incumbent on the proponent and his/her Contractors to ensure that sediment and erosion control measures are functioning properly and are maintained/upgraded as required.
- Silt or sand accumulated in the barriers/traps must be removed and stabilized on land once the site is stabilized.
- All activities must be controlled to prevent the entry of petroleum products, debris, rubble, concrete, trash or other deleterious substances into the water.
- Isolate all cast-in-place concrete, grout and mortar from precipitation and the watercourse for a minimum of 48 hours after placement.
- Vehicular and equipment refuelling and maintenance should be conducted away from the water.
- Do not construct temporary water crossings.
- Store all construction material and debris away from the watercourse.

- Limit all emissions from abrasive blasting medium, debris from concrete removals, saw-cutting dust etc. Emissions shall not enter the watercourse.

The cost of complying with all applicable environmental protection requirements as mandated by the applicable approval agency shall be imbedded in the price of paid items which are included in the Form of Tender. No additional claim shall be made.

30. TRUCK HAUL ROUTES

Confine trucking operations to the routes permitted by the appropriate road authorities.

There is a load restriction on County Road 8 from County Road 3 to County Road 9 and on County Road 8 from County Road 11 to Hwy. 3. Roads owned by the Town of Amherstburg are not haul routes.

The road authorities may impose load restrictions on their roads including the truck haul routes at anytime as they may deem necessary and/or according to the by-laws. The Contractor shall comply with these conditions.

31. TRAFFIC CONTROL IN AND AROUND THE WORK AREA

As required by the Occupational Health and Safety Act, the Contractor shall prepare a Traffic Protection Plan which shall be presented to The Corporation of the Town of Amherstburg for information prior to the commencement of construction.

The Contractor shall undertake all required traffic control in the approved plan throughout the duration of the project including but not limited to signage, delineators, flagging, etc. The Contractor shall ensure that The Corporation of the Town of Amherstburg, through the Consultant is kept informed as to the status of expected traffic movements.

The Contractor shall be responsible to ensure that all signage meets the requirements of the latest edition of the Ontario Traffic Manual – Book 7: Temporary Conditions and shall be required to install any additional signs stipulated by the above mentioned manual or as otherwise required to ensure the safety of the public traveling through or around the work area.

The Contractor shall be responsible to provide written notice to all local residents and businesses ten (10) calendar days in advance of any road closures or detours and may require additional notices during different stages of construction. The Contractor shall also notify all emergency services of such road closures.

The Contractor shall be responsible to supply, erect, maintain and at the completion of the project remove all detour signage as noted in the contract drawings.

32. LAYOUT

The Contractor shall provide qualified personnel to properly layout and establish all lines and grades necessary for construction. He shall construct and maintain substantial batter boards, alignment markers and secondary bench marks as may be required for the proper execution of the Contract.

33. UTILITIES

The Contractor shall arrange for any measures required to protect or temporarily relocate overhead lines during construction in order to comply with the Occupational Health and Safety Act and/or the Utility Company requirements. Any additional costs resulting there from shall be borne by the Contractor.

The Contractor shall visit the site to ascertain the locations of the overhead utilities, at grade markers and appurtenances.

The Contractor shall stay a minimum of 3 metres away from high voltage conductors. The Authority shall be contacted to hold poles (at a cost to be paid by the Contractor to the Authority) if there is any excavation closer than 1 metre from the base of the utility poles.

The cost of this item shall be imbedded in the prices of paid items, which are included in the Form of Tender. No additional claim shall be made.

34. CONSTRUCTION SPECIFICATIONS

The following OPSS documents, all material specifications or other specifications referred to therein shall form part of the Contract, although not included in the Tender Document. Please note that all OPSS specifications and drawings shall apply to applicable items in this Contract unless amended in this General Special Provisions section or as shown on the drawings.

Payment for all work in this Contract is to be in accordance with the items in the Form of Tender and Special Provisions and not in accordance with the Payment Section in the applicable OPSS.

A copy of this is available on-line from the Ministry of Transportation at no cost to all users. On-line access to the OPSS Publications can be obtained from the MTO website or through links established within the Ontario Good Roads Association (OGRA), The Road Authority (TRA) and Ontario Provincial Standards (OPS) websites. Hard copy and CD version of the OPSS publications are available through Publications Ontario which can be contacted by Toll Free Number 1-800-668-9938.

OPSS 127	Schedule of Rental Rates for Construction Equipment Including Model and Specification Reference
OPSS 128	Supply of Pre-Qualified Material and Products
OPSS 180	Management of Excess Material

OPSS 182	Environmental Protection for Construction in Waterbodies and on Waterbody Banks
OPSS 201	Clearing, Close Cut Clearing, Grubbing and Removal of Surface Boulders
OPSS 206	Grading (Reissued November 2010)
OPSS 301	Restoring Unpaved Roadway Surfaces
OPSS 302	Priming Granular Base
OPSS 307	Stockpiling of Patching Material
OPSS 308	Tack Coating and Joint Painting
OPSS 310	Hot Mix Asphalt
OPSS 311	Asphalt Sidewalk and Sidewalk Resurfacing Asphalt Sidewalk, Driveway, Boulevard and Sidewalk Resurfacing
OPSS 312	Asphalt Curb and Gutter Systems and Asphalt Surfacing of Gutters
OPSS 313	Hot Mix Asphalt – End Result
OPSS 314	Untreated Granular, Subbase, Base, Surface, Shoulder and Stockpiling
OPSS 401	Trenching, Backfilling, and Compacting (Formerly OPSS 514)
OPSS 402	Excavating, Backfilling and Compacting for Maintenance Holes, Catch Basins, Ditch Inlets, and Valve Connections (Formerly OPSS 516)
OPSS 407	Manholes, Catch Basins and Ditch Inlets (MTC)
OPSS 422	Precast Reinforced Concrete Box Culverts and Box Sewers In Open Cut (Reissued November 2010)
OPSS 491	Preservation, Protection, and Reconstruction of Existing Facilities (Formerly OPSS 504)
OPSS 492	Site Restoration Following Installation of Pipelines, Utilities, And Associated Structures (Formerly OPSS 507)
OPSS 501	Compacting
OPSS 506	Dust Suppressants
OPSS 510	Removal
OPSS 511	Rip-Rap, Rock Protection and Gravel Sheeting
OPSS 518	Control of Water (Reissued November 2010)
OPSS 530	Winter Sanding and Salting
OPSS 531	Treatment and Stockpiling of Screened Sand for Winter Sanding
OPSS 539	Temporary Protection Systems
OPSS 706	Traffic Control Signing (Formerly OPSS 543)
OPSS 710	Pavement Marking (Formerly OPSS 532)
OPSS 740	Concrete Barriers (Formerly OPSS 553)
OPSS 801	Protection of Trees (Formerly OPSS 565)
OPSS 802	Topsoil (Formerly OPSS 570)
OPSS 803	Sodding (Formerly OPSS 571)
OPSS 804	Seed and Cover (Formerly OPSS 572)
OPSS 805	Temporary Erosion and Sediment Control Measures (Formerly OPSS 577)
OPSS 902	Excavation and Backfilling Structures
OPSS 904	Concrete Structures
OPSS 905	Steel Reinforcement for Concrete
OPSS 909	Prestressed Concrete -- Precast Members

OPSS 914	Waterproofing Bridge Decks with Hot Applied Asphalt Membrane
OPSS 1001	Aggregates – General
OPSS 1002	Aggregates – Concrete
OPSS 1003	Aggregates – Hot Mix Asphalt
OPSS 1004	Aggregates – Miscellaneous
OPSS 1010	Material Specifications for Aggregates Base, Subbase, Select Subgrade and Backfill Material
OPSS 1150	Hot Mix Asphalt
OPSS 1213	Hot Applied Rubberized Asphalt Waterproofing Membrane
OPSS 1301	Cementing Materials
OPSS 1302	Water
OPSS 1303	Admixtures for Concrete
OPSS 1308	Joint Filler in Concrete
OPSS 1350	Concrete – Materials and Production
OPSS 1352	Pre-cast Concrete Barriers
OPSS 1440	Steel Reinforcement for Concrete
OPSS 1442	Epoxy Coated Steel Reinforcement for Concrete
OPSS 1504	Steel Beam Guide Rail
OPSS 1505	Channel Components for Steel Beam Guide Rail
OPSS 1716	Water-Borne Traffic Paint
OPSS 1821	Material Specification for Precast Reinforced Concrete Box Culverts
OPSS 2501	Calcium Chloride Solid and Calcium Chloride Solution

35. REMOVALS

Removals will be governed by OPSS 510 which shall apply and govern except as amended and/or extended herein.

This work shall consist of all labour, equipment and materials to complete the work described herein.

All removed material shall either be removed and disposed of off site or stored and re-used as specified in these General Special Provisions.

The Contractor shall prevent removed material from entering the water course. If any deleterious material falls into the drain, the Contractor shall remove the material immediately and shall notify the authorities in accordance with the relevant regulations.

The Contractor is responsible for all utilities within the vicinity of the work and shall carry out the work in a manner which minimizes the risk of damage.

36. HANDLING AND DISPOSAL OF EXCESS MATERIAL

Materials that are classified as not “inert fill”, as defined under Section 18 of Regulation 309 of the EPA must be disposed of at a disposal site certified by the Ministry of the Environment.

All costs associated with the removal and disposal of such waste shall be included in the tendered price.

37. MATERIALS

.1 General

OPSS shall apply and govern except as amended and/or extended herein.

.2 Concrete

OPSS 1303 and 1350 shall apply and govern except as amended and extended herein.

All concrete work performed on site shall conform to the latest requirements of CSA-CAN-23.1 and shall meet the following requirements:

Class of exposure	C-1
Minimum compressive strength at 28 days	35 MPa UNO
Maximum aggregate size	19 mm
Air content	5% - 6%
Maximum water/cement ratio (by weight)	0.40
Slump at time and point of discharge	50 – 110 mm

The use of supplementary cementing materials is prohibited. No water shall be added to the mix on site or during transport. The Town of Amherstburg shall appoint an independent inspection and testing company to test the concrete in accordance with CSA A23.2. The Contractor shall assist the testing company as needed to carry out the testing of cylinders (laboratory and field-cured), slump tests and air entrainment tests. Air entrainment tests will be carried out on every load of concrete delivered to the site. Concrete not in conformance with these specifications will be rejected. The Contractor shall bear all costs associated with the rejection and replacement of out-of-spec concrete.

.3 Reinforcing Steel

Concrete reinforcing steel shall be deformed bars conforming to CSA-G30.12 having minimum yield strength of 400 MPa.

38. RESTORATION

The Contractor shall carry out restoration as required to any area disturbed by their operations, whether within the limits of the contract or outside the limits of the contract. The restoration shall be to a condition equal to or better than that which existed prior to disturbance by the Contractor. The cost of all removals, restoration and reinstatement, unless noted otherwise shall be included in the tendered price.

39. RESTORATION BY SEEDING

Where restoration by seeding is required, the Contractor shall compact the native material to 95% SPMDD and place a minimum of 100 mm (4") topsoil. The area shall be seeded with Primary Seed Type 1, Canada No. 1 grass seed mixture as follows:

Creeping Red Fescue	55%
Kentucky Blue Grass	25%
Perennial Rye Grass	12%
Red Top	5%
White Clover	3%

The work shall include preparation of the area, supply and placement of required topsoil, fertilizer, seeding, mulch or a non-netted erosion control blanket, such as Curlex NetFree or approved equal, and watering.

All work shall be in accordance with OPSS and the Town of Amherstburg standards.

40. ASPHALT ESCALATION

The payment for liquid asphalt will be adjusted based on the Ministry of Transportation's performance graded asphalt cement price index. The price index will be published monthly on the MTO Contract Bulletin and displayed on the OHMPA website (www.ohmpa.org). The price index will be used to calculate the amount of payment adjustment per tonne of asphalt cement accepted into the work.

The price index will be based on the price, excluding taxes, Freight on Board (FOB) the depots in the Toronto area, of asphalt cement grade PG 58-28 or equivalent. One index will be used to establish and calculate the payment adjustment for all grades. As of July 2006 the price index for each month will reflect the average of the same month's prices and will be published on the last day of the month and be retroactively applied to Hot Mix Asphalt (HMA) laid in the same month.

A price adjustment per tonne of asphalt cement (AC) will be established for each month in which paving occurs when the price index for the month differs by \$15.00/tonne from the AC price index for the month prior to the tendering opening. When the price index differential is less than \$15.00/tonne, there will be no payment adjustment for that month. Payment adjustments due to changes in the price index are independent of any other payment adjustments made to the hot mix tender items. Harmonized Sales Tax (HST) adjustment should be applied to the adjustment (either way).

The payment adjustment per tonne will apply to the quantity of asphalt cement in the hot mix accepted into the work during the month for which it is established. The payment adjustment for the month will be calculated by the following means:

- .1 When AC Prices are Rising by more than \$15.00/tonne the payment adjustment to be paid to the Contractor is the result of subtracting the price index for the month, prior to the tender opening, from the price index in effect when paving takes place, minus the \$15.00 float, multiplied by the number of tonnes of Performance Graded Asphalt Cements (PGAC) incorporated in the mix(es), as determined by the job mix formula. HST on the adjustment will be included.
- .2 When AC Prices are Falling by more than \$15.00/tonne the payment adjustment made in favour of the Owner is the result of subtracting the price index in effect when paving takes place, plus the \$15.00 float from the price index for the month prior to the tender opening, multiplied by the number of tonnes of PGAC incorporated in the mix(es) by the job mix formula. HST on the adjustment will be included.

The quantity of asphalt cement includes all grades of new asphalt cement supplied by the Contractor with and without polymer modifiers. For each month in which a payment adjustment has been established, the quantity of the escalation/de-escalation will be calculated using the hot mix quantity accepted in the work and its corresponding asphalt cement content as required by the job mix formula. The Recycled Asphalt Product (RAP) component of the job mix formula shall not be included.

Example 1 – AC Prices Increasing

PGAC 64-28 specified, 3,000 tonnes of HL3 @ 5.2% AC (156.0 tonnes AC)
The effective Price Index on July 17, 2006 on tender opening is \$433.80
(June 2006/tonne (PGAC 58-28))
The applicable Price Index as published on August 31, effective for the
August 17 – 24, 2007 actual paving dates, is \$504.00/tonne (PGAC 58-28)

Payment adjustment to be paid to the Contractor:
[(\$504.00 - \$15.00) - \$433.80] x 156 tonnes
AC = \$55.20 x 156 tonnes AC = \$8,611.20 + 13% HST

Example 2 – AC Prices Decreasing

PGAC 58-28 specified, 4,500 tonnes of HL8 @ 4.6% AC (207.0 tonnes AC)
The effective Price Index on May 5, 2007 on tender opening is \$508.60

(April 2007)/tonne (PGAC 58-28)

The applicable Price Index, as published on October 31, effective for the October 11 – 18, 2007 actual paving dates, is \$451.35/tonne (PGAC 58-28).

Payment adjustment to be credited to the Owner:

$[\$508.60 - (\$451.35 + \$15.00)] \times 207 \text{ tonnes AC} = \$42.25 \times 207 \text{ tonnes}$

AC = \$8,745.75 + 13% HST

41. SUBSTANTIAL PERFORMANCE

The Consultant shall determine when the project can be declared substantially complete based on the definition as set out in the Construction Lien Act. A Certificate of Substantial Performance will then be issued and published in a construction trade publication and/or the Daily Commercial News all in compliance with the Construction Lien Act.

42. CONTINGENCY ALLOWANCE

In the event that the Contractor encounters an item of work that is not listed or specified in the Form of Tender, such work required will be paid at a price negotiated with the Town or on a Force Account Basis. Such work must be authorized by the Town prior to any work having been completed and executed in accordance with the Engineer's instructions.

43. GEOTECHNICAL INFORMATION

See appendix.

44. REFUSE AND RECYCLING PICKUP

The Contractor will liaise with The Corporation of the Town of Amherstburg Environmental staff to ensure that there is ready access for the pickup of refuse and recycled material. If required, the Contractor will move the material to a mutually agreed upon pick up location.

Note that exceptions may occur following holidays and other special events. The Contractor shall be aware of those instances.

45. SHOP DRAWINGS

The Contractor shall submit four (4) copies of shop drawings to the Consultant for review. Prior to submission, the Consultant and the Contractor shall review shop drawings and satisfy themselves that they are in accordance with the Contract Documents.

Shop drawing submissions shall be made prior to the fabrication/construction of the item.

46. PRE-CONSTRUCTION SURVEY ON EXISTING DWELLINGS, STRUCTURES AND UTILITIES

The Contractor shall retain a Professional Appraiser, Surveyor or Engineer to carry out a survey of the existing dwellings, structures and utilities, which may be affected by the culvert works before commencing construction on the site.

Existing condition of dwellings, structures and utilities shall be surveyed and examined. If necessary, photographs and/or video shall be taken.

It is the Contractor's responsibility to follow any recommendation from the Appraiser, Surveyor or Engineer to protect the existing dwellings, structures and utilities from damage by sewer construction.

Submit a copy of survey report including photographs and/or video tapes to the Consultant.

Payment for the pre-construction survey shall be full compensation for supplying all labour, equipment and material required to perform the work of pre-construction surveyors specified and shall be included in the lump sum price quoted in the Form of Tender.

SPECIAL PROVISIONS

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN**

T11-2017-002

SPECIAL PROVISIONS

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SPECIAL PROVISIONS

The Contractor shall note that the following are the Specific Contract Provisions, which will be indicated in Column 2 of the Schedule of Quantities.

1. DIVERSION

.1 General

The drawings and approvals for this project shall form the basis for this item.

.2 Scope

All labour, equipment and materials required to carry out the work as specified herein. Supply and install all equipment and cofferdams as defined in the contract. Price will also include cost to remove all elements at completion. All equipment, cofferdams and arranging must be kept in good order at all times. Contractor is to submit shop drawings defining equipment, methodology and layout for diversion prior to commencing any work.

.3 Measurements

No measurements will be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

2. PROJECT SIGNS

.1 General

OPSS 706 shall apply and govern except as amended and/or extended herein.

.2 Scope

The Contractor shall supply, erect and maintain project notification signage starting one week prior to construction. Signs shall be posted clearly showing the construction schedule.

.3 Measurement

Measurement for payment of this item will be made on a unit basis.

.4 Payment

Payment will be made at the Unit Price bid in the Form of Tender.

3. CONSTRUCT AND MAINTAIN DETOUR, SIGNING AND BARRICADES

.1 General

The contents of contract drawings shall apply and govern.

.2 Scope

This work consists of all material, equipment and labour required to supply, place, relocate and maintain signs for the duration of the Contract; safely route traffic to alternate roadways; provide sufficient barricades to prevent access to the site.

The Contractor shall supply, place, relocate and maintain signs for traffic control for the duration of the contract. The Contractor shall also be responsible for the full and proper removal of the detour, barricades and signage upon completion of the project.

.3 Measurement

No measurements will be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

4. ENVIRONMENTAL PROTECTION

.1 General

The contents of Section 29 of the General Special Provisions and all permit requirements shall apply and govern.

.2 Scope

This work consists of all material, equipment and labour required to provide for the environmental protection as defined within the contract, permit approval documents and governing legislation inclusive of dust control as deemed necessary by the Contractor and/or Consultant.

.3 Measurement

No measurements will be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

5. CLEARING AND GRUBBING

.1 General

OPSS 201 shall apply and govern except as amended and/or extended herein.

.2 Scope

Cut, remove and dispose of trees and other vegetation within the area of construction. Do not remove stumps. This item shall also include the disposal of surface debris such as broken concrete, blocks, pipes, bricks, miscellaneous building materials, etc., off of the site.

The Contractor shall take great care to ensure that the cutting, trimming and removal of riparian vegetation is kept to the minimum necessary to allow access for personnel, equipment and materials required to perform the work. Where practicable, clearing operations shall be performed by hand. The Contractor shall meet with the Consultant prior to commencing clearing operations to assess the vegetation and determine the preferred access path in order to prevent no more than one third (1/3) of the existing riparian vegetation to be affected by construction activities.

The Contractor shall exercise the utmost caution to ensure the protection of trees during construction activities. If trees are damaged or mistakenly removed due to the construction activities, the Contractor shall be assessed the monetary value of the trees, as determined by the Consultant.

The Contractor shall trim any trees which have been damaged by construction in an effort to preserve the trees. This work shall be performed by a professional tree service approved by the Owner and hired by the Contractor.

.3 Measurement

Measurement shall be made on a per site visit basis.

.4 Payment

Payment will be made at the appropriate unit rate price bid in the Form of Tender.

6. REMOVE EXISTING PAVEMENT

.1 General

Ontario Provincial Standard Specification No. 510 shall apply and govern this work except as extended or amended herein.

.2 Scope

This work shall consist of all labour, equipment and materials required to remove and dispose of existing pavement and base off-site at an appropriate disposal area arranged for by the Contractor at his own expense.

.3 Measurement

Measurement for payment of this item will be made in square metres of plan area.

.4 Payment

Payment will be made at the Unit Price bid in the Form of Tender.

7. REMOVE EXISTING ROAD BASE

.1 General

Ontario Provincial Standard Specification No. 510 shall apply and govern this work except as extended or amended herein.

.2 Scope

This work shall consist of all labour, equipment and materials required to remove and dispose of existing base off-site at an appropriate disposal area arranged for by the Contractor at his own expense.

.3 Measurement

Measurement for payment of this item will be made in cubic metres of material.

.4 Payment

Payment will be made at the Unit Price bid in the Form of Tender.

8. SAWCUTTING OF ASPHALT

.1 General

The contract drawings shall form the basis for this work

.2 Scope

This work shall consist of all material, equipment and labour required to sawcut the asphalt pavements as noted on the contract documents.

.3 Measurement

Measurements for this item will NOT be made.

.4 Payment

Payment will be made as part of item 7 of this specification.

9. EARTH EXCAVATION AT EXISTING STRUCTURE LOCATIONS

.1 General

The Contract Drawings shall apply and govern this work.

.2 Scope

This work shall consist of all material, equipment and labour required to carry out all earth excavation for footings and wing walls, complete all grading, filling and off-site disposal of material.

The Contractor shall excavate all materials down to approved subgrade within the limits of the footings and wing walls and other structures noted as directed on the Contract Drawings. The subgrade shall be heavily proof-rolled prior to placing the granular base material to determine the presence of soft spots. The Consultant reserves the right to order the Contractor to sub-excavate unsuitable materials below the subgrade.

Any excavated material temporarily stockpiled on-site shall be stockpiled away from the Drain and shall be protected with silt fencing on the down-gradient side.

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

10. REMOVAL AND DISPOSAL OF EXISTING STRUCTURES

.1 General

Section 37 of the General Special Provisions and the Contract Drawings shall apply and govern this work.

.2 Scope

This work shall consist of all material, equipment and labour required to carry out removal and proper disposal of the existing structures, including but not limited to the Culvert and associated retaining structures. The Contractor shall be responsible to identify an appropriate location to dispose of the structure(s).

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

11. CONCRETE CULVERT STRUCTURE

.1 General

Ontario Provincial Standard Specification No. 422, 902, 904 and 905 shall apply and govern this work except as extended or amended herein.

.2 Scope

This work shall consist of all material, equipment and labour required to supply and install, and backfill the new culvert as defined on the Contract Drawings. As defined on the Contract Drawings the culvert structure is to be a precast element manufactured by a CSA certified Precaster. Price shall also include for preparation and submission of engineered shop drawings for the culvert structure sealed by a Professional Engineer licensed in the Province of Ontario. Alternate designs will be considered but must be submitted with fully engineered shop drawings and calculations for review by the Consultant. Price of engineering must be carried in values provided.

All work up to the underside of the driving wear surface shall be considered part of this work, inclusive of the road base above the structure and associated shoulder work as noted in the Contract Drawings.

All labour, materials and equipment required for reworking/modification of existing pipes/conduits near the culvert location shall be included in this price.

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

12. WATERPROOFING

.1 General

OPSS 914 shall apply and govern except as amended and/or extended herein.

.2 Scope

The Contractor shall supply and install an approved waterproofing system including protection board as shown on the Contract Drawings.

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the Unit Price bid in the Form of Tender.

13. RIP RAP AND FABRIC

.1 General

The contract drawings and OPSS 511 shall apply and govern.

.2 Scope

This work shall consist of all material, equipment and labour required to supply and install a geotech fibre where indicated on the Contract Drawings. Work will also include all earth works (cuts, fills, clay plug, grading) to provide needed slope. Also, supply and install a layer of rip rap over fabric as defined on drawings.

.3 Measurement

Measurements for payment of this item shall be determined in square meets

.4 Payment

Payment will be made at the Unit Price bid in the Form of Tender.

14. REWORK AND CLEAN DRAIN

.1 General

The Contract Drawings and the drainage act shall apply and govern.

.2 Scope

This work shall consist of all material, equipment and labour required to perform all earth work to clean and rework the existing drain to a profile consistent with the up and down stream as defined on the Contract Drawings.

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

15. SELECTED GRANULAR BASE COURSE

.1 General

Ontario Provincial Standard Specification No. 1010 and 314 shall apply and govern this work except as extended or amended herein.

.2 Scope

This work shall consist of all material, equipment and labour required to supply, haul and place Granular “A” base course; water and compact Granular “A” base course.

The Contractor shall supply, place and compact Granular “A” base course material to the depths and dimensions shown on the Contract Drawings or as otherwise directed by the Consultant. Gradation of Granular “A” Base Course shall **strictly adhere** to OPSS Standard Specification 1010.

.3 Measurement

Measurement for payment of this item shall be determined in tonnes.

.4 Payment

Payment will be made at the Unit Price bid in the Form of Tender.

16. HOT MIX ASPHALT

.1 General

OPSS 310, 1003 and 1150 shall apply and govern except as amended and/or extended herein.

.2 Scope

This work shall consist of all labour, equipment and materials for the installation of hot mix asphalt for bridge reconstruction. Use HL3 Base and Surface Coat hot mix, hot laid asphalt to OPSS 310. Do not use reclaimed asphalt pavement. Submit mix design for approval by the Consultant. The asphalt cement added to all mix types shall be performance grade asphalt cement, PGAC 58-28. Samples of asphalt will be taken during paving operations by the testing agency. Compaction tests will be carried out at the cost of the Owner. Should the sample quality, placement or compaction test fail, the Contractor will be responsible for all costs associated with corrective measures and additional testing requirements.

.3 Measurement

Measurement shall be made in tonnes for this item.

.4 Payment

Payment will be made at the Unit Price bid in the Form of Tender.

17. RESTORATION

.1 General

Sections 39 and 40 of the General Special Provisions shall apply and govern.

.2 Scope

This work shall consist of all material, equipment and labour required to restore the site and surrounding affected areas to equal or better conditions from that which was originally found on site inclusive of bank and channel restoration and all other recommendations noted in the Contract Documents.

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

18. STEEL BEAM GUIDE RAIL

.1 General

OPSS 721 and 732 shall apply and govern except as amended and/or extended herein.

.2 Scope

The Contractor shall supply and install guide posts, steel beam guide rail, guide rail end treatments and channel as well as anchorage, as detailed on the Contract Drawings and appropriate OPSS Specifications defined in the contract documents. Price shall include hydro vacuum truck excavation of all holes.

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

19. CULVERT PIPE

.1 General

Ontario Provincial Standard Specification No. 401 and 421 shall apply and govern this work except as extended or amended herein.

.2 Scope

This work shall consist of all material, equipment and labour required to supply, install and backfill the new pipe culverts, and connect to existing as defined on the Contract Drawings. Price shall also include for coatings, tees, elbows, bedding and backfill.

All work up to underside of road base and finished grade at all other locations shall be considered covered under this section.

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

20. CONCRETE RETAINING STRUCTURE

.1 General

Ontario Provincial Standard Specification No. 904 shall apply and govern this work except as extended or amended herein.

.2 Scope

This work shall consist of all material, equipment and labour required to supply and install, construct, and backfill all new retaining walls as defined on the Contract Drawings. Price shall also include for preparation and submission of reinforcing shop drawings for the wall structures.

.3 Measurement

No measurement shall be made for this item.

.4 Payment

Payment will be made at the appropriate lump sum price bid in the Form of Tender.

21. HYDROVAC EXPOSURE OF UTILITIES

.1 General

This section will cover the work as defined.

.2 Scope

This work shall consist of all material, equipment and labour required to expose via hydrovac methods all existing buried services on the project site. This excavation will be done in the presence of the Consultant and any other person as deemed necessary by the Town or Consultant. Work to be scheduled and commence immediately upon contract award.

.3 Measurement

Measurements for this will be made in hours on site as recorded by the Consultant. Measurements will be made in blocks of 30 minute times.

.4 Payment

Payment will be made at the appropriate unit rate price bid in the Form of Tender.

APPENDIX A

SUBMISSION ENVELOPE

Complete the required information on the following Tender envelope cover sheet and firmly affix to the Tender submission envelope.

SUBMITTED BY:

TENDER

SUBMITTED TO: TOWN OF AMHERSTBURG – TOWN HALL (UPPER LEVEL)
271 SANDWICH STREET SOUTH
AMHERSTBURG, ONTARIO
N9V2A5

ATTENTION: CLERKS DEPARTMENT

PROJECT: CULVERT #7 REPLACEMENT OVER ALBERT MCGEE DRAIN
T11-2017-002
PP-PS-17-12

CLOSING: THURSDAY, MAY 11, 2017 AT 11:00AM

THIS PORTION TO BE COMPLETED BY THE TOWN OF AMHERSTBURG

RECEIVED DATE: _____ RECEIVED TIME: _____ RECEIVER'S INITIALS: _____ SUBMITTER'S INITIALS: _____

APPENDIX B

**TOWN OF AMHERSTBURG
ACCESSIBLE CUSTOMER SERVICE STANDARDS POLICY**

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN
T11-2017-002**

Accessible Customer Service Standards Policy

Disruption of Services

If there is a disruption in a particular facility or service used to allow a person with a disability to access goods or services, the Town will give notice of the disruption to the public by posting the reason for the disruption, the anticipated duration of the disruption, and alternative facilities or services that may be available. This posting will be in a conspicuous place on the premises of the Town of Amherstburg, the Town website and/or by other reasonable methods in the circumstances.

If the Town anticipates a disruption, the Town will provide a reasonable amount of advance notice of the disruption. If the disruption is unexpected, notice will be provided as soon as possible.

Training

The Town will ensure that all persons to whom the *Accessible Customer Service Standards Policy* applies to receive training as required. The amount and format of training given will be tailored to suit each person's interactions with the public and his or her involvement in the development of policies, procedures and practices pertaining to the provision of goods and services. This training includes, but is not limited to, the Town's policies, procedures and practices pertaining to the provision of goods and services to customers with disabilities and how to assist customers with disabilities in accessing the Town's goods and services. The Town will keep records of this training.



Feedback

Feedback from the public is welcomed as it may identify areas that require change and encourage service improvements.

Feedback or complaints may be given by telephone, in person, in writing, or in electronic format or through other methods.

Information about the Town's feedback policy and process is posted on the Town's website (www.amherstburg.ca).

If a complaint is received regarding the accessibility of the Town's goods and services, it will be reviewed by the relevant division or department. These will be reviewed for the purpose of resolving the issue and to improve the Town's understanding of the Town of Amherstburg customer's needs.

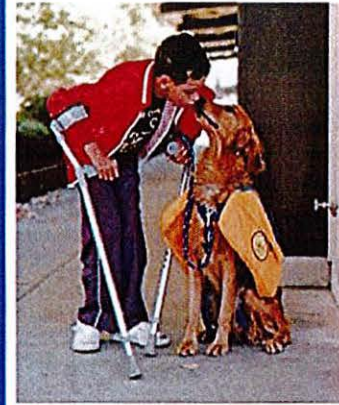
Feedback will be responded to within three (3) business days of its receipt by the Town.

Availability of Documents

This policy will be made available upon request in a format that takes into account the person's disability to any person to whom it provides goods or services as well as on the Town of Amherstburg website.

Town of Amherstburg

Accessible Customer Service Standards Policy



Town of Amherstburg
271 Sandwich Street S.
Amherstburg, Ontario
N9V 2A5

Phone: 519-736-0012

Fax: 519-736-5403

Email:

accessibility@amherstburg.ca



Town of Amherstburg Accessible Customer Service Policy— Background and Purpose

The Accessibility for Ontarians with Disabilities Act, 2005 (AODA) is a Provincial Act with the purpose of developing, implementing and enforcing standards that enhance the ability of persons with disabilities to access the goods and services that are available to others. Accessibility Standards for Customer Service is the first standard to be passed as a regulation and become law in Ontario. Under this standard designated private and public sector organizations must develop certain policies, procedures and practices pertaining to customer service to persons with disabilities.

What is Accessible Customer Service?

Persons with disabilities may require assistance or accommodation in the way that goods and services are provided to them. The type of accommodation provided may vary depending on the customer's unique needs.

Accessible Customer Service Policy Statement

The Town of Amherstburg is committed to providing quality goods and services that are accessible to all persons that we serve.

Exclusions

This Accessible Customer Service Standards Policy shall not apply during any period where Council has declared a "State of Emergency" as defined under the **Emergency Management Act**.

GENERAL PRINCIPLES

The Provision of Goods and Services to Persons with Disabilities

The Town of Amherstburg will use reasonable efforts to ensure that the Town's goods and services are provided in a manner that:

- Respects the dignity and independence of persons with disabilities;
- Provides goods and services to persons with disabilities in an integrated manner with those who do not have disabilities unless an alternative measure is necessary and
- Provides an opportunity equal to that of persons without disabilities to obtain, use or benefit from the Town's goods and services.

When communicating with a person with a disability, the Town will do so in a manner that takes into account the person's disability.

Assistive Devices, Service Animals and Support Persons

Persons with disabilities may use assistive devices, support persons or service animals to assist them in accessing the Town's goods and services.

The Town will allow people to use their personal assistive device to access services. The Town will also ensure that staff is familiar with how to use or how to access information on the use of the assistive devices which are available in their respective area of responsibility.

If a person with a disability is accompanied by a service animal, the Town will permit the person to enter the premises with the animal and keep it with him or her, unless the animal is otherwise excluded by law from the premises. If the service animal is excluded by law from the premises, the Town will look to other avail-

able measures to enable the person with a disability to obtain, use or benefit from the Town's goods and services.

If it is not readily apparent that the animal is a service animal, the Town may ask the person with a disability for a letter from a physician or nurse confirming that the person requires the animal for reasons relating to his or her disability. The Town may also, or instead, ask for a valid identification card signed by the Attorney General of Canada or a certificate of training from a recognized guide dog or service animal training school.

It is the responsibility of the person with a disability to ensure that his or her service animal is kept in control at all times.

If a person with a disability is accompanied by a support person, they are permitted to enter the premises together and are not prevented from having access to each other while on the premises.

The Town may require a person with a disability to be accompanied by a support person while on Town premises in situations where it is necessary to protect the health or safety of the person with a disability or the health and safety of others on the premises.

Where fees for goods and services are advertised or promoted by the Town of Amherstburg, it will provide advance notice of the amount payable, if any, in respect of the support person.



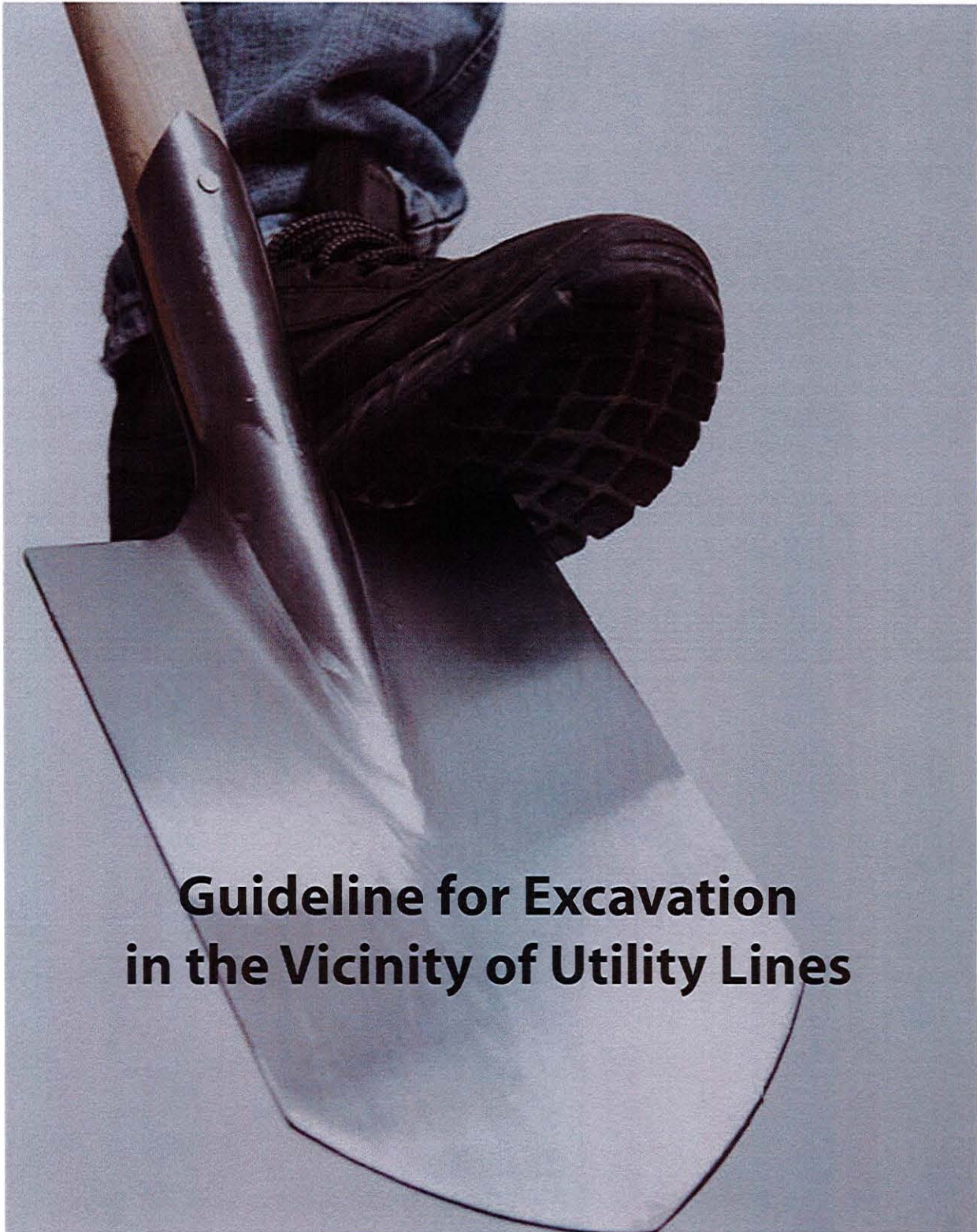
APPENDIX C

**GUIDELINE FOR EXCAVATION IN THE VICINITY OF
UTILITY LINES**

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN**

T11-2017-002



Guideline for Excavation in the Vicinity of Utility Lines



Ontario Regulation 210/01 Oil and Gas
Pipeline Systems
Ontario Regulation 22/04 Electrical
Distribution Safety
December 2008





Legal Disclaimer.

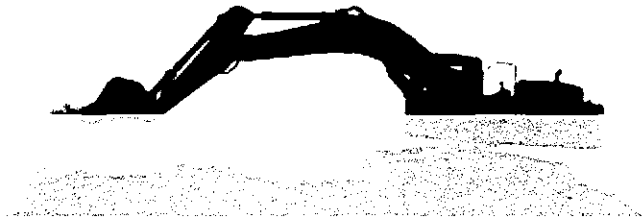
This document contains GUIDELINES ONLY to assist members of the industry in interpreting:

- Ontario Regulation 22/04 - Electrical Distribution Safety - made under subsection 113(1) of Part VIII of the *Electricity Act, 1998*
- Ontario Regulation 210/01 – Oil And Gas Pipeline Systems – made under the *Technical Standards and Safety Act, 2000*

These guidelines do not have the force of law. Where there is a conflict between these guidelines and any legislation or regulation which may apply, the relevant law prevails.

Retention Periods stated in the guidelines set out the minimum period for which referenced documents are to be retained. Each distributor needs to make its own assessment of the appropriate retention period for specific documents based on its assessment of risk factors and potential liability.

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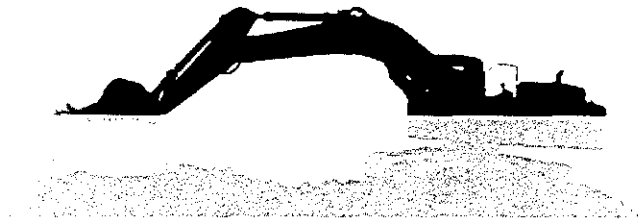
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Definitions



Abandoned utility lines means those *utility lines* that have been identified by the *utility* in the *locate* as abandoned.

Blanket Locate or Alternate Locate Agreement means permission to excavate, subject to the terms and conditions outlined by a written agreement between the *Contractor* or *Excavator* and the *utility*.

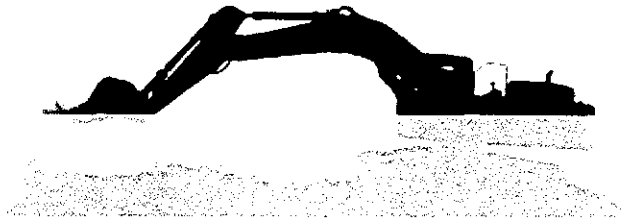
Boundary Limits means the volume of soil contained by vertical planes placed 1.0 metre each side of the centre line of the marked *utility line* or 1.0 metre on either side of the marked limits of the underground structure.

Contractor or **Excavator** means the individual, partnership, corporation, public agency, or other entity that digs, bores, trenches, grades, excavates or breaks ground with mechanical equipment or explosives in the vicinity of a *utility line*.

Hand dig means to excavate using a shovel with a wooden or insulated handle, not including picks, bars, stakes or other earth piercing devices. Please note that Regulations requiring a *locate* include hand digging applications.

Hydrovac means the use of pressurized water or compressed air to loosen soil and a vacuum system to remove it.

Definitions



Live means:

- a) electrically connected to a source of voltage difference or electrically charged so as to have a voltage different from that of the earth,
- b) connected to a source of fuel under the *Technical Standards and Safety Act, 2000*.

Locate means identification on the ground of the position of the *utility line(s)* based on records or electronic locating equipment and includes provision of necessary documentation such as a locate sheet.

Mechanical Excavation means boring or open cut excavation by means of mechanical excavating equipment such as powered excavator, earth mover, earth piercing equipment including hand held augers, picks, bars, stakes or any other device that may damage the *utility line*. Please note that Regulations requiring a locate include hand digging applications.

Utility means the individual, partnership, corporation, public agency, or other entity that is licensed to operate an electric distribution system under the *Ontario Energy Board Act* or a pipeline under the *Technical Standards and Safety Act, 2000*.

Utility line means those facilities operated by a *utility* through which gas or electric energy is conveyed and includes pipe, cables, and other directly related equipment and components such as switches, valves, meters and supporting structures.



Guideline for Excavating

1.0 General Conditions

- 1.1 All work shall be carried out in accordance with:
 - (a) The *Occupational Health and Safety Act* (OH&S) and Regulations which apply under this Act including Regulations for Construction Projects; and
 - (b) as appropriate,
 - (i) the *Technical Standards and Safety Act, 2000* and Ontario Regulation 210/01 Oil and Gas Pipeline System and other regulations which apply under this Act; and / or
 - (ii) the *Electricity Act, 1998* and the Ontario Regulation 22/04 Electrical Distribution Safety Regulation and other regulations which apply under this Act.
- 1.2 The guidelines, procedures and requirements described herein are prepared in the interest of safety to the general public, the workers carrying out the excavation, and the prevention of damage to *utility lines* and property.
- 1.3 The *Excavator* shall assume that all *utility lines* are *live* unless otherwise expressly identified by the *utility* on the *locate*.



Guideline for Excavating

2.0 Locate Request

2.1 Prior to excavation the person responsible for the work shall contact "Ontario One Call" at the telephone or facsimile numbers listed in Table 1 below, or the *utility*, and request a *locate* of *utility lines* in the areas where excavation will be taking place. The *Excavator* must receive the *locate* as described in Section 3.0 prior to commencing any excavation.

Table 1:

Ontario One Call	
Telephone	1-800-400-2255
Fax	1-800-400-8876

Note: Not all *utilities* belong to Ontario One Call. If you are planning to excavate in an area not serviced by Ontario One Call please contact the local municipality for information on *utilities* in that area and contact the *utility* directly for *locate* requests.

2.2 Subject to entering into an agreement with an *Excavator*, the *utility* may provide that *Excavator* with a *blanket locate*.

2.3 If removing asphalt but not road base or underlying structure a *locate* is not required.

Note: *Locates* are required for sidewalk removal.



Guideline for Excavating

- 2.4 The *Excavator*, when requesting a locate, shall provide the *utility* with relevant information describing the location where the work will take place, the expected time when the work will begin, the scope of the work, the nature of the work, the expected duration, the name address and telephone number of the *Excavator*, and the name of the *Excavator's* site representative.
- 2.5 Except in emergency situations, requests for stakeouts or *locate* information should be made as early as possible, and at least 5 working days in advance.
- 2.6 Except in cases of emergency, or where the response for the *locate* request has been agreed with the *Excavator*, the *utility* shall make every reasonable effort to respond to notification requests and provide *locates* within 4 working days of receiving the notification, and 5 working days during peak times.
- 2.7 In emergency situations, requests for *locate* information shall be provided by the *utility* as soon as possible.



Guideline for Excavating

3.0 Locates

- 3.1 The *utility* shall provide information using labeled stakes, flags, and/or highly visible paint marks (See section 11.0 for colour code) continuously or at regular intervals on the surface of the ground. The markings should clearly indicate the centre line of the *utility line* and the limits of underground structures, where applicable, in the defined area of the proposed excavation.
- 3.2 The *utility* shall also provide a diagram describing the *locate* information to the person who requested the *locate* or when requested to the *Contractor's* site representative at the time of the *locate*. The diagram should indicate in clear legible terms the *locate* information including additional clarifications, dimensions from fixed objects, orientation, and any unusual depths, if known.
- 3.3 When requested by either party, the *utility* and the *Excavator* shall meet on site to confirm details of the excavation and the location of the *utility line*.
- 3.4 Where there are no *utility lines* in the defined area of the proposed excavation the *utility* may provide verbal confirmation to the *Excavator*. Written confirmation will be provided on request.



Guideline for Excavating

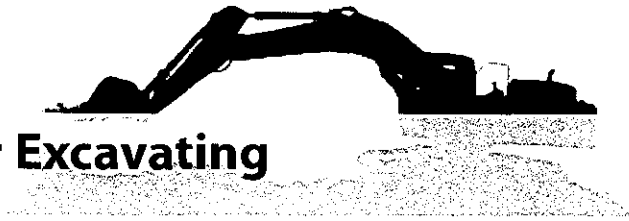
4.0 Locate Boundaries and Accuracy

- 4.1 The *Excavator* shall not excavate outside the area covered by the *locate* request without first obtaining a further *locate*.
- 4.2 *Locate* accuracy shall be considered to be 1 metre on either side of the surface centre line *locate* or 1 metre on either side of the marked limits of the underground structure, unless the *locate* instructions specifically indicate other *boundary limits*.
- 4.3 Irrespective of the depth of the *utility line*, the *Excavator* must not use mechanical excavating equipment to dig within the *boundary limits* to expose the *utility line*.

5.0 Duration

- 5.1 The *utility* shall indicate the expiry date (normally 30 days) on the *locate* form or diagram and the *utility* contact phone number.
- 5.2 Stakes or markings may disappear or be displaced. *Excavators* shall not rely on expired *locates*. Where delays occur beyond the period specified in 5.1 or where the *locate* markings become unclear, a new *locate* must be requested by the *Excavator*.
- 5.3 Where the *utility* has ascertained that no changes have taken place since releasing the *locate* information and the *locate* markings are still clear, the *utility* may provide a new expiry date in writing.

Guideline for Excavating



6.0 Hydrovac Excavation

- 6.1 With prior agreement of the *utility*, *hydrovac* may be used as an alternative to *hand digging*.
- 6.2 For detailed procedures for using *hydrovac* excavation in the vicinity of pipelines see Appendix 5.
- 6.3 For detailed procedures for using *hydrovac* excavation in the vicinity of electric distribution lines see the E&USA Safe Practice Guide "*Excavating with Hydrovacacs in the Vicinity of Underground Electrical Plant*".

7.0 Initial Exposure

- 7.1 At no time, with the exception of 2.3, should an *Excavator* use *mechanical excavation* within the *boundary limits* of the *locate* without first *hand digging* test holes to determine the exact centre line and depth of cover of the *utility line*.
- 7.2 Where the proposed excavation is to be parallel and within the *boundary limits* of a *utility line*, the *Excavator* shall expose the *utility line* by *hand digging* a series of test holes along the entire route at regular intervals. The separation between test holes shall not exceed 4.5 metres.
- 7.3 Test holes may be excavated by one of the following methods:
 - (a) *mechanical excavation* may be used to dig test holes immediately outside of the *boundary limits* and then *hand digging* used laterally until the *utility line* is found;

or



Guideline for Excavating

- (b) A combination of *hand digging* and *mechanical excavation* as follows:
 - (i) *hand digging* between the *boundary limits* of the *locate* in cuts of at least 0.3 metre (1 foot) in depth,
 - (ii) *mechanical excavation* could then be used to widen the hand dug trench to within 0.3 metre (1 foot) of the depth of the *hand digging*,
 - (iii) repeat step (i) and (ii) until the *utility line* is located.

7.4

- (a) Concrete saws, jackhammers, hand tools or other similar equipment may be used to break concrete or asphalt on a road or sidewalk surface.
- (b) With the exception of 2.3 and 7.3, mechanical excavating equipment should only be used to remove broken asphalt or concrete.
- (c) Concrete below the road and sidewalk surface layers may have *utility lines* encased therein and should not be removed without consultation with the *utility*.

7.5 The *Excavator* shall dig additional test holes where the *utility* has identified changes in alignment or in elevation.

7.6 Where the *utility line* cannot be located following the procedures described above, the *Excavator* shall contact the *utility* for assistance with the *locate*.



Guideline for Excavating

8.0 Excavating After Test Holes Are Completed

- 8.1 Where test holes in an area have been completed and the *utility line* located, *mechanical excavation* may take place provided the following procedures are used:
- (a) wherever possible, mechanical excavating equipment should be operated parallel to the direction of the *utility line* when the excavation is within 1 metre of the *utility line*; and
 - (b) *mechanical excavation* must not be used closer than 0.3 metre (1 foot) in any direction to the *utility line*;
 - (c) excavation within 0.3 metre (1 foot) in any direction of the *utility line* must be carried out by *hand digging*;
- 8.2 Prior to initiating any blasting activities in proximity of *utility lines* Excavators must obtain specific guidelines from the *utilities*.
- 8.3 Specific instructions for *utility lines* needing support must be obtained from the *utilities*. The *Excavator* will install temporary support acceptable to the *utilities* that is adequate to prevent any deflection or damage to the *utility line*. (for an electric utility sample see Appendix 4).
- 8.4 Temporary support shall remain in place until the backfill material underneath the structure has cured or it has been compacted adequately to restore support.
- 8.5 Under no circumstances shall an *Excavator* attempt to move *utility lines*. Where such a need arises during excavation, the *Excavator* shall contact the *utilities* to make the necessary arrangements.



Guideline for Excavating

9.0 Backfilling Trenches

- 9.1 Where trenches are to be backfilled, the following requirements should be followed:
- (a) backfilling should be performed in such a manner as to provide firm support under the *utility lines*; and
 - (b) the trench must be backfilled with clean fill or granular material free of material injurious to the *utility lines*
 - (c) where flooding of gas *utility* trenches is done to consolidate the backfill, care must be exercised so that the gas line is not floated from its firm bearing on the ditch bottom.
 - (d) backfilling should be performed without using tamping equipment directly on exposed *utility lines* and using extra caution around electric cable splices.

10.0 Unidentified and Abandoned Distribution Lines









- 10.1 Where a *utility line* is found during excavation that was not identified by the *utility*, but within the area covered by the *locate*, the *Excavator* shall never assume the line is an abandoned *utility line*. The *Excavator* shall immediately contact the *utility* as appropriate, to determine if the line is abandoned or *live*.
- 10.2 Excavations in the vicinity of *abandoned utility lines* shall not be subject to the guidelines in Section 8.0.

Note: In circumstances where a *locate* shows an *abandoned utility line* the *utility* should clearly state on the *locate* form that the *utility line* is abandoned.

Guideline for Excavating

11.0 Colour Coding

Markings on stakes, streets and sidewalks must be "Safety Yellow" for gas lines and highly visible "Safety Red" paint for electric distribution lines

COLOUR		TYPE OF FACILITY/INDICATOR	MUNSELL NOTATIONS
Red		Electric - Powerlines, Cables, Conduit & Lighting cables	Safety Red 7.5R 4.0/14)
Yellow		Gas, Oil, Steam, Petroleum, Compressed air, Gases and other hazardous liquid or gaseous materials	Safety Yellow 5.0Y 8.0/12)
Blue		Potable water	Safety Blue 2.5PB 3.5/10)
Orange		Communications - Alarm, Cable TV, Signal lines, Cables & Conduit	(Safety Orange 5.0YR 6.0/15)
Green		Sewers & Drain lines	(Safety Green 7.5G 4.0/9)
Purple		Reclaimed/treated water, irrigation & Slurry lines	
Pink		Temporary survey markers	
White		Proposed excavation	

12.0 Procedure When Damage Occurs

- 12.1 If damage to the *utility line* occurs, including damage to the coating, the *Excavator* shall leave the *utility line* exposed, barricade the area and contact the *utility* immediately.
- 12.2 If gas is escaping from a gas pipeline, shut off vehicles or equipment, remove or extinguish all ignition sources, barricade the area off, and keep public and workers away. Call 911 and the Gas *utility* immediately. No attempt should be made to control the escaping gas.



Guideline for Excavating

12.3 If there are any flames or sparks originating from the exposed electric distribution line or other works, barricade the area off, and keep public and workers away. Call 911 and the Local Electric Distribution *utility* immediately.

Note: In no case shall the *Excavator* attempt to control or make repairs to the damaged *utility line* or equipment.

13.0 Acts and Regulations

A copy of the relevant sections of Acts and Regulations are attached as appendices.

Appendix 1: The *Technical Standards and Safety Act, 2000* and the *Ontario Regulation 210/01 Oil and Gas Pipeline Systems*.

Appendix 2: The *Ontario Energy Board Act*

Appendix 3: *Ontario Regulation 22/04 "Electrical Distribution Safety"*.

Appendix 4: Guideline for Temporary Support of Electric Distribution Lines across the Trench

Appendix 5: Procedures for using hydro-excavation machines in the vicinity of Pipelines.

Appendix 1



Sections of the *Technical Standards and Safety Act*:

Offences

37. (1) Every person who,
- (a) contravenes or fails to comply with any provision of this Act, the regulations or a Minister's order;
 - (b) knowingly makes a false statement or furnishes false information under this Act, the regulations or a Minister's order;
 - (c) contravenes or fails to comply with a term or condition of an authorization;
 - (d) contravenes or fails to comply with an order or requirement of an inspector or obstructs an inspector,

is guilty of an offence and on conviction is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or to both, or, if the person is a body corporate, to a fine of not more than \$1,000,000.

2000, c. 16, s. 37 (1).

Duty of director or officer

- (2) Every director or officer of a body corporate has a duty to take all reasonable care to prevent the body corporate from committing an offence under subsection (1). 2000, c. 16, s. 37 (2).

Offence

- (3) Every director or officer of the body corporate who has a duty under subsection (2) and who fails to carry out that duty is guilty of an offence and on conviction is liable to a fine of not more than \$50,000 or to imprisonment for a term of not more than one year, or to both. 2000, c. 16, s. 37 (3).



Appendix 1 (cont'd)

Separate offence

- (4) Where a person contravenes any of the provisions of this Act, the regulations, a Minister's order or any notice or order made under them on more than one day, the continuance of the contravention on each day shall be deemed to constitute a separate offence. 2000, c. 16, s. 37 (4).

Administrative penalty

- (5) A person against whom an administrative penalty has been levied by a designated administrative authority or, in the absence of such authority, by the Minister does not preclude a person from being charged with, and convicted of, an offence under this Act for the same matter. 2000, c. 16, s. 37 (5).

Time limit

- (6) No proceeding in respect of an alleged offence under this Act may be commenced after two years following the date on which the facts that gave rise to the alleged offence were discovered. 2000, c. 16, s. 37 (6).

- 41.** Every contractor and employer shall take all reasonable precautions to ensure that they and their agents and employees comply with this Act, the regulations or a Minister's order.



Appendix 1 (cont'd)

Sections of the Oil and Gas Pipeline Systems Regulation:

Ascertaining pipeline locations

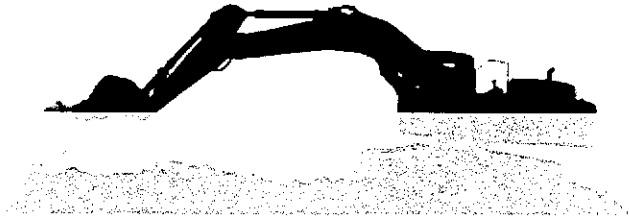
9. (1) No person shall dig, bore, trench, grade, excavate or break ground with mechanical equipment or explosives without first ascertaining from the licence holder the location of any pipeline that may be interfered with.

(2) The licence holder shall provide as accurate information as possible on the location of any pipeline within a reasonable time in all the circumstances.

No interference with pipeline

10. No person shall interfere with or damage any pipeline without authority to do so.

Appendix 2



Ontario Energy Board Act, Section V

Requirement to hold licence

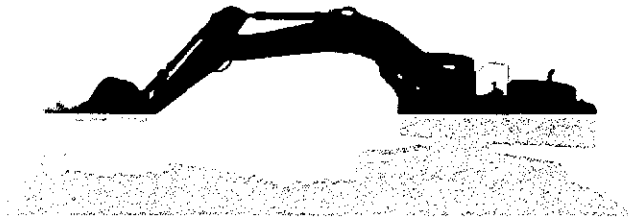
57. Neither the OPA nor the Smart Metering Entity shall exercise their powers or perform their duties under the Electricity Act, 1998 unless licensed to do so under this Part and no other person shall, unless licensed to do so under this Part,

- (a) own or operate a distribution system;
- (b) own or operate a transmission system;
- (c) generate electricity or provide ancillary services for sale through the IESO-administered markets or directly to another person;
- (d) retail electricity;
- (e) purchase electricity or ancillary services in the IESO-administered markets or directly from a generator;
- (f) sell electricity or ancillary services through the IESO-administered markets or directly to another person, other than a consumer;
- (g) direct the operation of transmission systems in Ontario;
- (h) operate the market established by the market rules; or
- (i) engage in an activity prescribed by the regulations that relates to electricity. 1998, c. 15, Sched. B, s. 57; 2002, c. 1, Sched. B, s. 6; 2004, c. 23, Sched. B, s. 10; 2006, c. 3, Sched. C, s. 4.

Emergency

59. (1) Despite this Act, the Board may issue an interim licence authorizing a person to undertake any of the activities described in section 57 if the Board considers it necessary to do so to ensure the reliable supply of electricity to consumers. 1998, c. 15, Sched. B, s. 59 (1).

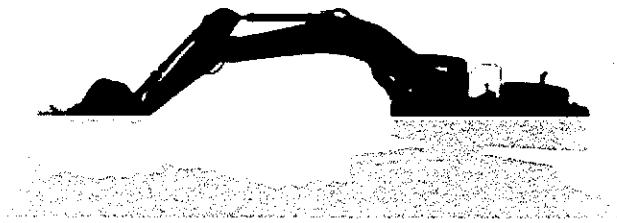
Appendix 3



Ontario Regulation 22/04, “Electrical Distribution Safety” Section 10 Proximity to Distribution Lines

- (1) Despite section 4 of CSA Standard C22.3, No. 1-01 Overhead Systems, a person may place an object closer to an energized conductor forming part of a system of overhead distribution lines than the required minimum separations from energized conductors forming part of such a system if the person first obtains an authorization from the distributor responsible for the energized conductor. O. Reg. 22/04, s. 10 (1).
 - (2) Despite sections 4 and 5 of CSA Standard C22.3, No. 7-94 Underground Systems (Reaffirmed 1999), a person may place an object closer to an energized conductor forming part of a system of distribution lines than the required minimum separations from energized conductors forming part of such system if the person first obtains an authorization from the distributor responsible for the energized conductor. O. Reg. 22/04, s. 10 (2).
 - (3) Before digging, boring, trenching, grading, excavating or breaking ground with tools, mechanical equipment or explosives, a Excavator, owner or occupant of land, buildings or premises shall, in the interests of safety, ascertain from the distributor responsible for the distribution of electricity to the land, building or premises the location of any distribution line that may be interfered with in the course of such activities. O. Reg. 22/04, s. 10 (3).
 - (4) The distributor shall provide reasonable information with respect to the location of its distribution lines and associated plant within a reasonable time. O. Reg. 22/04, s. 10 (4).
- Note: Section 10 came into force on November 11, 2004.

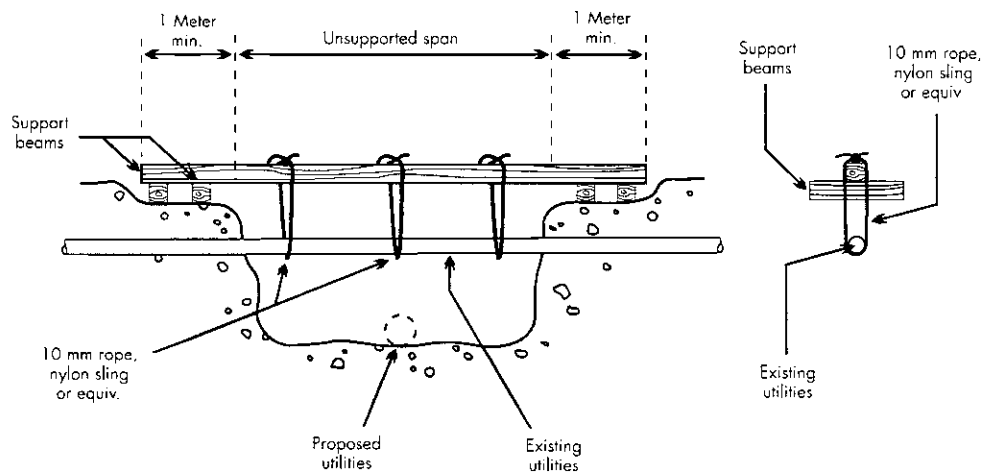
Appendix 4



Guideline for Temporary Support of Electric Distribution Lines across the Trench

1. When trenching beneath underground conduit systems a temporary support may be required to prevent deflection and damage to the electric distribution line.
2. Prior to trenching beneath the electric distribution line the Excavator is to install a temporary support if the unsupported span of conduit in the trench exceeds 1.0 meter in length. However, a support with closer spacing intervals may be required as identified below.

TYPICAL TEMPORARY SUPPORT OF EXISTING UTILITIES CROSSING EXCAVATIONS



NOTE: Supporting procedures must be approved by local authorities.
Utilities such as cable may require additional support such as planking



Electrical & Utilities Safety Association, 2009



Appendix 4 (cont'd)

3. **Concrete Encased PVC, Transite, or Fibre Conduit** must not be underexposed without adequate support. When temporary support is required, support beams and posts shall be placed in a manner that will prevent damage to the conduit and eliminate sag. The maximum span that the conduit is permitted to be supported in this manner is 2.0 metres and the spacing between supports shall not exceed 1.0 metre. The Excavator is to contact the distributor for special instructions if the distribution line is to be underexposed by more than 2.0 metres or if the conduit cross-section dimensions exceed 1.5 metres by 1.5 metres.
4. **Concrete Encased Clay Tile Conduit** must be supported at short-spaced intervals. Since the conduit can be damaged very easily, exposed conduit should be inspected by the distributor's representative when uncovered and again before backfilling. The maximum span that the conduit is permitted to be supported in this manner is 2.0 metres and the spacing between supports shall not exceed 0.6 metres. The Excavator is to contact the distributor for special instructions if the distribution line is to be underexposed by more than 2.0 metres or if the conduit cross-section dimensions exceed 1.5 metres by 1.5 metres.
5. **High Density Polyethylene (HDPE) and Direct Buried PVC Duct** are very flexible and must be continually supported with a set of pressure treated timbers consisting of 50 mm x 150 mm planks nailed together in a "V" formation. These timbers shall be placed under the cable and supported every 2.0 metres with vertical 100 mm x 100 mm timbers with a "V" notch at the top to hold the 50 mm x 150 mm planks in place. The conduit bundles must not be separated or displaced.



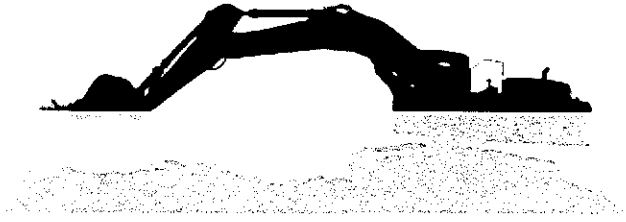
Appendix 4 (cont'd)

6. Support is required when a trench is parallel to a distribution line and soil rupture or lateral movement of the soil may undermine the distribution line.
7. Table #1 shows the maximum allowed horizontal distances from the edge of the trench to the distribution line affected by the excavation. Shoring may be already in place if workers are to enter a trench excavation that is deeper than 1.2 metres.
8. In case the distributor's structure is closer than the maximum allowed distances given in Table 1, then the excavation shall be suitably shored to prevent movement of the conduit structure. The shoring shall remain in place until the backfill material has restored support. A sliding trench box does not provide adequate support.
9. Where the trench bottom is below the water table, the trench shall be suitably shored with close sheathing.

TABLE #1
Maximum Allowed Horizontal Distances from
Distribution Line to Edge of Unshored Excavation

Proposed Trench Depth (m)	Horizontal Distance Type 1 and 2 Soils Hard, Dry, Stiff (m)	Horizontal Distance Type 3 and 4 Soils Wet, Soft, Clay, or Sand (m)
Up to 1.2	0.6	0.6
Up to 2.4	1.0	1.0
Up to 3.6	1.0	2.0
Up to 4.5	1.5	3.0
Over 4.5	2.0	4.0

Appendix 5



Procedures for using hydro-excavation machines to locate and expose pipelines as an alternative to hand digging.

Please note that this applies to pipelines only.

For hydrovac excavation in the vicinity of electric distribution lines see the E&USA Safe Practice Guide *"Excavating with Hydrovacs in the Vicinity of Underground Electrical Plant"*

The following procedures shall be followed at all times when excavating with hydro-excavation technology within 1 m of gas plants.

1. Obtain locates prior to commencement of work. Only a competent, qualified worker shall operate hydro-excavation equipment.
2. The maximum water pressure to be used at any time with a straight tip nozzle¹ during excavation in public roads or easements shall be 17250 kPa (2500 psi). Below a depth of 45 cm (18") the water pressure to be used at any time with a straight tip nozzle¹ during excavation shall be reduced to a maximum of 10350 kPa (1500 psi). All pressure measurements are to be taken at the hydro-excavation machine (truck, pump).
3. The maximum water pressure to be used at any time with a spinning tip nozzle² during excavation shall be 20684 kPa (3000 psi). When a spinning tip nozzle² is used, pressure measurements are to be permanently monitored using a calibrated device mounted on either the hydro-excavation machine (truck, pump) or the wand.

Appendix 5 (cont'd)



4. The wand shall never remain motionless during excavation. Aiming directly at the plant shall be avoided at all times.
5. A distance of 20 cm (8") shall be maintained between the end of the pressure wand nozzle and the plant and / or subsoil. The nozzle shall never be inserted into the subsoil while excavating above the plant.
6. Only use hydro-excavation equipment and nozzles that have been specifically designed for use above buried gas lines or other reasonably expected underground gas plant.
7. A device capable of stopping the excavation on demand, such as a dead man trigger or valve, shall be installed on the wand.
8. If heated water is used during excavation, the temperature and pressure of the water shall never exceed 115 oF (45 oC) and 17250 kPa (2500 psi) respectively.
9. If damage to gas plant occurs while using hydro-excavation technology or any other method of excavation, the excavator shall contact the gas utility.

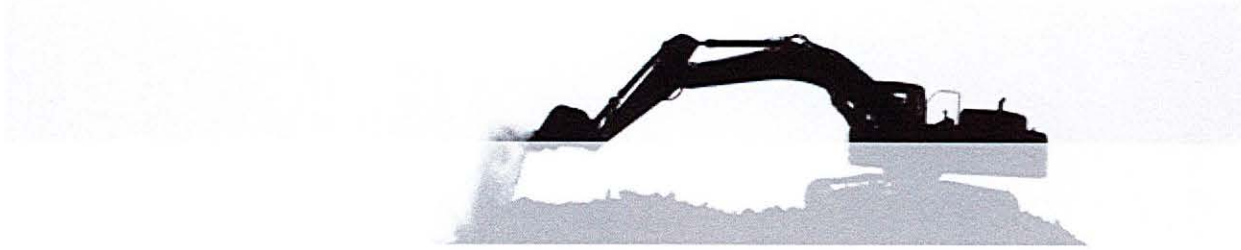


Appendix 5 (cont'd)

Notes:

1) Straight Tip Nozzle – A straight tip nozzle is a single orifice fitting that can be inserted into the end of the wand used with a hydro-excavation machine such that there is a single concentrated jet of water exiting from the tip of the nozzle.

2) Spinning Tip Nozzles – A spinning tip nozzle consists of a conically shaped housing that contains a single exit port (to facilitate the flow of liquid) as well as a rotor insert. The rotor insert has a series of blades such that when liquid is flowing through the nozzle, the rotor is forced to spin around the longitudinal axis of the the nozzle. The rotor insert also contains three or more channels that force liquid to flow in different pathways through the rotor insert to the tip of the rotor which, as a result of the high pressure liquid is forced into contact with the nozzle housing. The liquid flowing through the nozzle is dispersed through the tip of the nozzle housing in a conical shape, having an angle of not less than 20°.



DIG SAFE

Guideline Principles

Before beginning any excavation, the excavator should contact Ontario One Call or the utilities at least five working days before beginning excavation to request a locate.

The utility will make every reasonable effort to provide the locate within five working days during peak time and four working days at other times.

Emergency requests for locates will be provided as a soon as possible.



For any questions or comments regarding local electric distribution utilities
contact ESA
www.esaeds.info
utility.regulations@electricalsafety.on.ca
905-712-5655

For any questions or comments regarding local gas distribution utilities
contact TSSA
www.tssa.org
1-877-682-8772

APPENDIX D
GEOTECHNICAL INVESTIGATION

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN**

T11-2017-002



May 2015

GEOTECHNICAL INVESTIGATION

**Proposed Culvert Replacement
Structure No. 7
Concession Road 6 over Albert McGree Drain
Town of Amherstburg, Ontario**

Submitted to:
Mr. Will Tape, Ph.D., PE, P.Eng.
Haddad Morgan and Associates Ltd.
24 Shepherd Street East
Windsor, Ontario N8X 2J8

REPORT



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**PROPOSED CULVERT REPLACEMENT
STRUCTURE NO. 7
TOWN OF AMHERSTBURG, ONTARIO**

May 26, 2015

Project No. 1528972-R04

Haddad Morgan and Associates Ltd.
24 Shepherd Street East
Windsor, Ontario N8X 2J8

Attention: Mr. Will Tape, Ph.D., PE, P.Eng.

**GEOTECHNICAL INVESTIGATION
PROPOSED CULVERT REPLACEMENT
STRUCTURE NO. 7
CONCESSION ROAD 6 OVER ALBERT MCGREE DRAIN
TOWN OF AMHERSTBURG, ONTARIO**

Dear Mr. Tape:

This report presents the results of a geotechnical investigation carried out at the site of the proposed culvert replacement (Structure No. 7) located on Concession Road 6 over Albert McGree Drain, in the Town of Amherstburg, Ontario. The approximate location of the site is shown on the Key Plan, Figure 1.

1.0 TERMS OF REFERENCE

The purpose of the investigation was to determine the subsurface soil and groundwater conditions at the site, and to provide geotechnical engineering recommendations for the design of the proposed culvert.

The field work and preparation of this report were carried out in general accordance with our proposal letter P1528972 dated April 17, 2015. Authorization to proceed with the work was received from Mr. Will Tape, Ph.D., PE, P.Eng., of Haddad Morgan and Associates Ltd. on April 22, 2015.

2.0 PROJECT DESCRIPTION

It is understood that it is proposed to replace the existing culvert (Structure No. 7) on Concession Road 6 over Albert McGree Drain, in the Town of Amherstburg, Ontario. The existing culvert is a cast-in-place open bottom structure with conventional foundations. The culvert carries 2 lanes of traffic over the drain and the depth of the drain is about 2.4 m below the road grade. It is understood that the proposed culvert will be a pre-cast closed bottom box structure of a similar size with pre-cast block wing-walls.



3.0 INVESTIGATION PROCEDURE

The field work for this investigation was carried out on May 7, 2015, on which date, a single borehole was advanced at the site. The approximate location of the borehole is described on the Record of Borehole sheet attached to this report. The borehole was advanced to a depth of about 8.1 m below the existing grade, using a truck mounted drilling rig supplied and operated by a specialist drilling contractor.

During the investigation, soil sampling and testing was carried out at selected intervals of depth in the borehole using standard 35 millimetre (mm), inside diameter, split-spoon sampling equipment in accordance with the Standard Penetration Test (SPT) procedures outlined in ASTM D1586. In this test, the SPT resistance, or measured 'N' value, is defined as the number of blows required by a 63.5 kilogram hammer dropped from a height of 760 mm to drive a split-spoon sampler a distance of 300 mm. The Standard Penetration Tests were conducted using an automatic hammer.

The soil samples obtained were examined in the field, placed in individually labelled containers and brought to our Windsor office for further examination and laboratory testing. The borehole was monitored for groundwater seepage during drilling. Following the completion of drilling, the borehole was backfilled in accordance with current regulatory requirements.

The soil stratigraphy and groundwater conditions encountered in the borehole, as well as the results of field and laboratory testing, are shown in detail on the Record of Borehole sheet, following the text of this report.

The field work for this investigation was supervised throughout by an experienced member of our geotechnical engineering staff who also located the boreholes in the field, obtained underground utility locates, directed the drilling and sampling operations, logged the borehole and cared for the soil samples obtained.

Our staff also determined the ground surface elevation at the borehole location. The ground surface elevation at the borehole location was referenced to a temporary benchmark provided by others described as "the orange control pin (CP 701) located in the east shoulder, north of the culvert". It is understood that the benchmark has an elevation of 181.204 m referenced to geodetic datum.

4.0 SUBSURFACE CONDITIONS

4.1 General

The subsurface soil and groundwater conditions encountered in the borehole drilled for this investigation are shown on the attached Record of Borehole sheet. It should be noted that the soil boundaries indicated have generally been inferred from non-continuous sampling and observation of drilling resistance. The boundaries typically represent a transition from one soil type to another and are not intended to define exact planes of geological change. Further, the subsurface conditions are established only at the borehole location and may vary beyond the borehole location.

The subsurface soil conditions encountered in the borehole generally consisted of the existing pavement structure and fill materials, overlying firm to very stiff silty clay till.



4.2 Pavement Structure and Fill Materials

Borehole BH-104 was drilled in the northbound lane on the north side of the existing culvert and encountered a pavement structure comprised of about 50 mm of asphalt overlying 180 mm of brown crushed granular base material.

Beneath the pavement structure, fill materials comprised of sand, gravel and silty clay were encountered to a depth of about 1.4 m below grade at the borehole location. Measured 'N' values obtained from standard penetration testing carried out in the fill materials were 7 and 15 blows per 0.3 m. The water contents of the samples of the fill materials obtained varied between about 4 and 21 per cent.

4.3 Silty Clay Till

Underlying the fill material, an extensive deposit of silty clay till was encountered. The upper 760 mm of the silty clay was weathered to a mottled brown and grey colouration. A single measured 'N' value obtained in the mottled silty clay till was 6 blows per 0.3 m. The water content of a sample of the mottled silty clay till obtained was about 24 per cent.

Beneath the mottled silty clay till, stiff to very stiff, brown silty clay till was encountered. The thickness of the brown silty clay till was about 1.5 m at the borehole location. Two measured 'N' values obtained in the brown silty clay till were 9 and 26 blows per 0.3 m. The water contents of the two samples of brown silty clay till obtained were about 12 and 15 per cent.

Underlying the brown silty clay till, very stiff to stiff, grey silty clay till was encountered to the termination depth of the borehole. Measured 'N' values obtained in the grey silty clay till ranged from 13 to 22 blows per 0.3 m. The water content of the samples of grey silty clay till obtained varied from about 11 to 14 per cent.

4.4 Groundwater Conditions

The borehole was dry upon completion of drilling. Based on the colour change in the silty clay till, the inferred groundwater level is at about elevation 177.6 m. The water level in the drain was at about elevation 179.2 m at the time of the field work. The bottom of the drain at the culvert location was at about elevation 178.9 m or about 2.4 m below the road grade.

5.0 DISCUSSION

5.1 General

This section of the report presents our interpretation of the factual information obtained from the investigation and is intended only for use by the design engineer. Where comments are made on construction, they are provided only in order to highlight aspects of construction which could potentially affect the design of the project. Contractors bidding on or undertaking any work at the site should examine the factual results of the



**PROPOSED CULVERT REPLACEMENT
STRUCTURE NO. 7
TOWN OF AMHERSTBURG, ONTARIO**

investigation, satisfy themselves as to the adequacy of the information for construction and make their own interpretation of the factual data as it affects their proposed construction techniques, schedule, equipment capabilities, costs, sequencing and the like.

Our professional services for this assignment address only the geotechnical (physical) aspects of the subsurface conditions at this site. The geo-environmental (chemical) aspects, including the consequences of possible surface and/or subsurface contamination resulting from previous activities or uses of the site and/or resulting from the introduction onto the site of materials from off-site sources are outside the terms of reference for this report and have not been investigated or addressed.

5.2 Foundations

It is understood that the existing open bottom culvert on Concession Road 6 over Albert McGree Drain is to be replaced with a pre-cast closed bottom box culvert.

The results of this investigation indicate that the subsurface soil conditions at the site generally consist of the existing culvert backfill materials, overlying extensive strata of firm to very stiff silty clay till.

The base of the new culvert structure should be founded at least 0.5 m below the drain bottom, with wing-walls and cut off walls founded at about 1.2 m below the drain bottom. This range of depth should be adequate to allow for scour and frost protection.

Based on our field data, the drain bottom is about 2.4 m below the road surface (at elevation 178.9 m). The base of a closed bottom box culvert may be founded at about elevation 178.4 m with wing-walls and cut off walls founded at about elevation 177.7 m.

The excavations should be cut slightly deeper than noted above to allow for the placement of a leveling pad in the very stiff silty clay till. The leveling pad should be comprised of at least 200 mm of Granular 'A' material uniformly compacted to at least 98 per cent of standard Proctor maximum dry density.

For design purposes, the geotechnical reaction at Serviceability Limit States (SLS) and the factored geotechnical resistance at Ultimate Limit States (ULS) are presented in the following table. These are 'net' bearing capacities.

<u>BRIDGE STRUCTURE</u>	<u>FOUNDING ELEVATION</u>	<u>BEARING CAPACITIES</u>	
	(m)	<u>SLS</u>	<u>ULS</u>
Box Culvert	178.4	230	345
Wing-walls and cut off walls	177.7	190	285



PROPOSED CULVERT REPLACEMENT STRUCTURE NO. 7 TOWN OF AMHERSTBURG, ONTARIO

Prior to constructing the new culvert, the existing structure, its foundations and associated backfill materials should be removed to expose native silty clay. The exposed base should be inspected by the geotechnical engineer to ensure that a suitable founding soil has been encountered and that all organic and unsuitable materials have been removed. If raising of the founding grade is required, the area may be backfilled with Granular 'A' engineered fill material.

If the leveling pads for the pre-cast box culvert and/or wing-walls cannot be placed immediately after excavation and inspection, the base soils should be covered with a lean concrete working slab to protect against inclement weather.

Resistance to sliding may be based on a friction angle of 30 degrees for the interface between the pre-cast concrete elements and the granular leveling pad material.

It is anticipated that the water in the drain will need to be temporarily diverted to permit the foundation work to be carried out.

Appropriate scour and/or erosion protection should be provided for the culvert and adjacent drain side slopes. The long term side slopes of the drain adjacent to the structure should be graded to an inclination of 2 horizontal to 1 vertical or flatter.

5.3 Excavations

All excavations should be carried out in accordance with the Occupational Health and Safety Act and Regulations for Construction Projects. The fill materials and native soils encountered at the site may be classified as 'Type 3' soils under the Act. Open cut excavations may be carried out at the site using side slopes of 1 horizontal to 1 vertical or flatter.

Other than from the drain itself, no major groundwater problems are anticipated during construction. Nevertheless, some water seepage into the open excavation should be anticipated. Pumping from properly filtered sumps located in the excavation bottom should be sufficient to control groundwater seepage.

5.4 Backfill

In order to minimize the effects of frost penetration and the potential for increased lateral earth pressures on the structure, the backfill behind the walls of the new culvert should consist of free-draining granular material meeting the gradation requirements of Ontario Provincial Standard Specification (OPSS) Granular 'A' or Granular 'B', Type I material. The granular fill should be placed in a zone with a width of at least 1.2 m behind the walls. The material should be placed in loose lifts not exceeding 300 mm in thickness and should be uniformly compacted to 95 per cent of standard Proctor maximum dry density. The upper one metre of backfill, which will form the roadway subgrade should be compacted to 98 per cent of standard Proctor maximum dry density.



**PROPOSED CULVERT REPLACEMENT
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For walls backfilled as such, and with effective drainage of the backfill being provided, the following parameters (unfactored) may be assumed for the calculation of lateral earth pressures on the culvert walls:

	MATERIAL	
	GRANULAR 'A'	GRANULAR 'B'
Fill unit weight	22 kN/m ³	20 kN/m ³
'Active' earth pressure coefficient, K_a :	0.27	0.33
'At rest' earth pressure coefficient, K_o :	0.43	0.50

If the wall supports allow for lateral yielding (unrestrained structure), 'active' earth pressures may be used in the geotechnical design of the structure. If the supports do not allow for lateral yielding (restrained structure), 'at rest' earth pressures should be assumed for geotechnical design.

Where the backfill soils are placed and compacted behind the walls, a compaction surcharge equal to 12 kPa at the surface and linearly reducing to 0 kPa at a depth of 1.7 m should be included in the lateral earth pressure for structural design in accordance with the Canadian Highway Bridge Design Code S6-14.

In addition, if an approach slab is not incorporated into the design, a surcharge load equal to 0.8 m of fill should be added to the loads to take into account the live loads adjacent to the structure.

6.0 CLOSURE

This office should be given an opportunity to review the final design drawings to ensure that they are consistent with the recommendations of this report.

To ensure that construction is carried out in a manner consistent with the intent of the recommendations presented in this report, a program of geotechnical inspection and testing should be developed and implemented throughout the construction phase. In addition, related laboratory testing should be carried out in conjunction with the field work to monitor compliance with the various material and project specifications.

The factual data, interpretation and recommendations in this report pertain to a specific project as described in the report and are not applicable to any other project or site location. If the project is modified in concept, location or elevation, or if the project is not initiated within twelve months of the date of the report, Golder Associates Ltd. should be given an opportunity to confirm that the recommendations are still valid.

Please refer to the "Important Information and Limitations of This Report" which follows the text, but forms an integral part of this document.



**PROPOSED CULVERT REPLACEMENT
STRUCTURE NO. 7
TOWN OF AMHERSTBURG, ONTARIO**

We trust that this report provides all of the geotechnical information presently required. Should any point require clarification, or should you have any comments on this report, please contact this office.

Yours truly,

GOLDER ASSOCIATES LTD.

Brent Gusba, P.Eng., PMP
Geotechnical Materials Team Leader

Azmi M. Hammoud, P.Eng.
Associate

BG/AMH/bg/sjo

Attachments:

- Important Information and Limitations of This Report
- Method of Soil Classification
- Abbreviations and Terms Used on Records of Boreholes and Test Pits
- List of Symbols
- Record of Borehole BH-104
- Figure 1

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IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Standard of Care: Golder Associates Ltd. (Golder) has prepared this report in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practising under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. No other warranty, expressed or implied is made.

Basis and Use of the Report: This report has been prepared for the specific site, design objective, development and purpose described to Golder by the Client. The factual data, interpretations and recommendations pertain to a specific project as described in this report and are not applicable to any other project or site location. Any change of site conditions, purpose, development plans or if the project is not initiated within eighteen months of the date of the report may alter the validity of the report. Golder can not be responsible for use of this report, or portions thereof, unless Golder is requested to review and, if necessary, revise the report.

The information, recommendations and opinions expressed in this report are for the sole benefit of the Client. No other party may use or rely on this report or any portion thereof without Golder's express written consent. If the report was prepared to be included for a specific permit application process, then upon the reasonable request of the client, Golder may authorize in writing the use of this report by the regulatory agency as an Approved User for the specific and identified purpose of the applicable permit review process. Any other use of this report by others is prohibited and is without responsibility to Golder. The report, all plans, data, drawings and other documents as well as all electronic media prepared by Golder are considered its professional work product and shall remain the copyright property of Golder, who authorizes only the Client and Approved Users to make copies of the report, but only in such quantities as are reasonably necessary for the use of the report by those parties. The Client and Approved Users may not give, lend, sell, or otherwise make available the report or any portion thereof to any other party without the express written permission of Golder. The Client acknowledges that electronic media is susceptible to unauthorized modification, deterioration and incompatibility and therefore the Client can not rely upon the electronic media versions of Golder's report or other work products.

The report is of a summary nature and is not intended to stand alone without reference to the instructions given to Golder by the Client, communications between Golder and the Client, and to any other reports prepared by Golder for the Client relative to the specific site described in the report. In order to properly understand the suggestions, recommendations and opinions expressed in this report, reference must be made to the whole of the report. Golder can not be responsible for use of portions of the report without reference to the entire report.

Unless otherwise stated, the suggestions, recommendations and opinions given in this report are intended only for the guidance of the Client in the design of the specific project. The extent and detail of investigations, including the number of test holes, necessary to determine all of the relevant conditions which may affect construction costs would normally be greater than has been carried out for design purposes. Contractors bidding on, or undertaking the work, should rely on their own investigations, as well as their own interpretations of the factual data presented in the report, as to how subsurface conditions may affect their work, including but not limited to proposed construction techniques, schedule, safety and equipment capabilities.

Soil, Rock and Groundwater Conditions: Classification and identification of soils, rocks, and geologic units have been based on commonly accepted methods employed in the practice of geotechnical engineering and related disciplines. Classification and identification of the type and condition of these materials or units involves judgment, and boundaries between different soil, rock or geologic types or units may be transitional rather than abrupt. Accordingly, Golder does not warrant or guarantee the exactness of the descriptions.



IMPORTANT INFORMATION AND LIMITATIONS OF THIS REPORT

Special risks occur whenever engineering or related disciplines are applied to identify subsurface conditions and even a comprehensive investigation, sampling and testing program may fail to detect all or certain subsurface conditions. The environmental, geologic, geotechnical, geochemical and hydrogeologic conditions that Golder interprets to exist between and beyond sampling points may differ from those that actually exist. In addition to soil variability, fill of variable physical and chemical composition can be present over portions of the site or on adjacent properties. The professional services retained for this project include only the geotechnical aspects of the subsurface conditions at the site, unless otherwise specifically stated and identified in the report. The presence or implication(s) of possible surface and/or subsurface contamination resulting from previous activities or uses of the site and/or resulting from the introduction onto the site of materials from off-site sources are outside the terms of reference for this project and have not been investigated or addressed.

Soil and groundwater conditions shown in the factual data and described in the report are the observed conditions at the time of their determination or measurement. Unless otherwise noted, those conditions form the basis of the recommendations in the report. Groundwater conditions may vary between and beyond reported locations and can be affected by annual, seasonal and meteorological conditions. The condition of the soil, rock and groundwater may be significantly altered by construction activities (traffic, excavation, groundwater level lowering, pile driving, blasting, etc.) on the site or on adjacent sites. Excavation may expose the soils to changes due to wetting, drying or frost. Unless otherwise indicated the soil must be protected from these changes during construction.

Sample Disposal: Golder will dispose of all uncontaminated soil and/or rock samples 90 days following issue of this report or, upon written request of the Client, will store uncontaminated samples and materials at the Client's expense. In the event that actual contaminated soils, fills or groundwater are encountered or are inferred to be present, all contaminated samples shall remain the property and responsibility of the Client for proper disposal.

Follow-Up and Construction Services: All details of the design were not known at the time of submission of Golder's report. Golder should be retained to review the final design, project plans and documents prior to construction, to confirm that they are consistent with the intent of Golder's report.

During construction, Golder should be retained to perform sufficient and timely observations of encountered conditions to confirm and document that the subsurface conditions do not materially differ from those interpreted conditions considered in the preparation of Golder's report and to confirm and document that construction activities do not adversely affect the suggestions, recommendations and opinions contained in Golder's report. Adequate field review, observation and testing during construction are necessary for Golder to be able to provide letters of assurance, in accordance with the requirements of many regulatory authorities. In cases where this recommendation is not followed, Golder's responsibility is limited to interpreting accurately the information encountered at the borehole locations, at the time of their initial determination or measurement during the preparation of the Report.

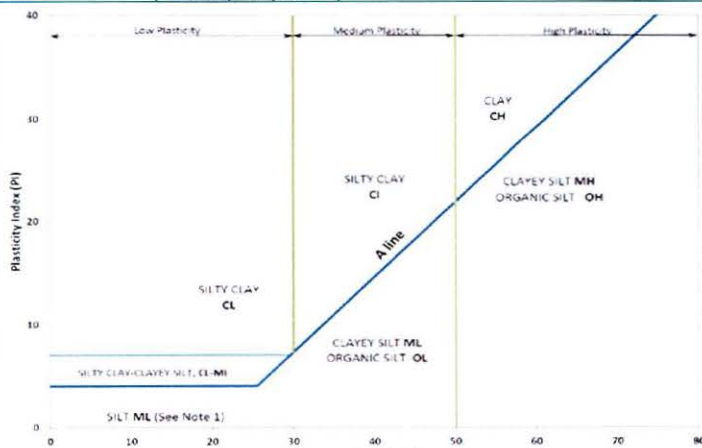
Changed Conditions and Drainage: Where conditions encountered at the site differ significantly from those anticipated in this report, either due to natural variability of subsurface conditions or construction activities, it is a condition of this report that Golder be notified of any changes and be provided with an opportunity to review or revise the recommendations within this report. Recognition of changed soil and rock conditions requires experience and it is recommended that Golder be employed to visit the site with sufficient frequency to detect if conditions have changed significantly.

Drainage of subsurface water is commonly required either for temporary or permanent installations for the project. Improper design or construction of drainage or dewatering can have serious consequences. Golder takes no responsibility for the effects of drainage unless specifically involved in the detailed design and construction monitoring of the system.

METHOD OF SOIL CLASSIFICATION

The Golder Associates Ltd. Soil Classification System is based on the Unified Soil Classification System (USCS)

Organic or Inorganic	Soil Group	Type of Soil	Gradation or Plasticity	$C_u = \frac{D_{60}}{D_{10}}$		$C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$		Organic Content	USCS Group Symbol	Group Name		
				<4	≥4	≤1 or ≥3	1 to 3					
INORGANIC (Organic Content ≤30% by mass)	COARSE-GRAINED SOILS (>50% by mass is larger than 0.075 mm)	GRAVELS (>50% by mass of coarse fraction is larger than 4.75 mm)	Poorly Graded	<4		≤1 or ≥3		≤30%	GP	GRAVEL		
			Well Graded	≥4		1 to 3			GW	GRAVEL		
			Below A Line			n/a			GM	SILTY GRAVEL		
			Above A Line			n/a			GC	CLAYEY GRAVEL		
		SANDS (≥50% by mass of coarse fraction is smaller than 4.75 mm)	Sands with ≤12% fines (by mass)	Poorly Graded	<6		≤1 or ≥3			SP	SAND	
				Well Graded	≥6		1 to 3			SW	SAND	
			Sands with >12% fines (by mass)	Below A Line			n/a			SM	SILTY SAND	
				Above A Line			n/a			SC	CLAYEY SAND	
Organic or Inorganic	Soil Group	Type of Soil	Laboratory Tests	Field Indicators					Organic Content	USCS Group Symbol	Primary Name	
				Dilatancy	Dry Strength	Shine Test	Thread Diameter	Toughness (of 3 mm thread)				
INORGANIC (Organic Content ≤30% by mass)	FINE-GRAINED SOILS (≥50% by mass is smaller than 0.075 mm)	SILTS (Non-Plastic or PI and LL plot below A-Line on Plasticity Chart below)	Liquid Limit <50	Rapid	None	None	>6 mm	N/A (can't roll 3 mm thread)	<5%	ML	SILT	
				Slow	None to Low	Dull	3mm to 6 mm	None to low	<5%	ML	CLAYEY SILT	
			Liquid Limit ≥50	Slow to very slow	Low to medium	Dull to slight	3mm to 6 mm	Low	5% to 30%	OL	ORGANIC SILT	
				Slow to very slow	Low to medium	Slight	3mm to 6 mm	Low to medium	<5%	MH	CLAYEY SILT	
			CLAYS (PI and LL plot above A-Line on Plasticity Chart below)	Liquid Limit <30	None	Low to medium	Slight to shiny	~ 3 mm	Low to medium	0% to 30%	CL	SILTY CLAY
					None	Medium to high	Slight to shiny	1 mm to 3 mm	Medium	(see Note 2)	CI	SILTY CLAY
		Liquid Limit ≥50		None	High	Shiny	<1 mm	High	(see Note 2)	CH	CLAY	
		HIGHLY ORGANIC SOILS (Organic Content >30% by mass)	Peat and mineral soil mixtures						30% to 75%	PT	SILTY PEAT, SANDY PEAT	
				Predominantly peat, may contain some mineral soil, fibrous or amorphous peat					75% to 100%		PEAT	



Note 1 – Fine grained materials with PI and LL that plot in this area are named (ML) SILT with slight plasticity. Fine-grained materials which are non-plastic (i.e. a PL cannot be measured) are named SILT.
Note 2 – For soils with <5% organic content, include the descriptor "trace organics" for soils with between 5% and 30% organic content include the prefix "organic" before the Primary name.

Dual Symbol – A dual symbol is two symbols separated by a hyphen, for example, GP-GM, SW-SC and CL-ML. For non-cohesive soils, the dual symbols must be used when the soil has between 5% and 12% fines (i.e. to identify transitional material between "clean" and "dirty" sand or gravel). For cohesive soils, the dual symbol must be used when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart (see Plasticity Chart at left).

Borderline Symbol – A borderline symbol is two symbols separated by a slash, for example, CL/CI, GM/SM, CL/ML. A borderline symbol should be used to indicate that the soil has been identified as having properties that are on the transition between similar materials. In addition, a borderline symbol may be used to indicate a range of similar soil types within a stratum.

ABBREVIATIONS AND TERMS USED ON RECORDS OF BOREHOLES AND TEST PITS

PARTICLE SIZES OF CONSTITUENTS

Soil Constituent	Particle Size Description	Millimetres	Inches (US Std. Sieve Size)
BOULDERS	Not Applicable	>300	>12
COBBLES	Not Applicable	75 to 300	3 to 12
GRAVEL	Coarse	19 to 75	0.75 to 3
	Fine	4.75 to 19	(4) to 0.75
SAND	Coarse	2.00 to 4.75	(10) to (4)
	Medium	0.425 to 2.00	(40) to (10)
	Fine	0.075 to 0.425	(200) to (40)
SILT/CLAY	Classified by plasticity	<0.075	< (200)

MODIFIERS FOR SECONDARY AND MINOR CONSTITUENTS

Percentage by Mass	Modifier
>35	Use 'and' to combine major constituents (i.e., SAND and GRAVEL, SAND and CLAY)
> 12 to 35	Primary soil name prefixed with "gravelly, sandy, SILTY, CLAYEY" as applicable
> 5 to 12	some
≤ 5	trace

PENETRATION RESISTANCE

Standard Penetration Resistance (SPT), N:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) required to drive a 50 mm (2 in.) split-spoon sampler for a distance of 300 mm (12 in.).

Cone Penetration Test (CPT)

An electronic cone penetrometer with a 60° conical tip and a project end area of 10 cm² pushed through ground at a penetration rate of 2 cm/s. Measurements of tip resistance (q), porewater pressure (u) and sleeve frictions are recorded electronically at 25 mm penetration intervals.

Dynamic Cone Penetration Resistance (DCPT); N_d:

The number of blows by a 63.5 kg (140 lb) hammer dropped 760 mm (30 in.) to drive uncased a 50 mm (2 in.) diameter, 60° cone attached to "A" size drill rods for a distance of 300 mm (12 in.).

PH: Sampler advanced by hydraulic pressure

PM: Sampler advanced by manual pressure

WH: Sampler advanced by static weight of hammer

WR: Sampler advanced by weight of sampler and rod

SAMPLES

AS	Auger sample
BS	Block sample
CS	Chunk sample
DO or DP	Seamless open ended, driven or pushed tube sampler – note size
DS	Denison type sample
FS	Foil sample
RC	Rock core
SC	Soil core
SS	Split spoon sampler – note size
ST	Slotted tube
TO	Thin-walled, open – note size
TP	Thin-walled, piston – note size
WS	Wash sample

SOIL TESTS

w	water content
PL, w _p	plastic limit
LL, w _L	liquid limit
C	consolidation (oedometer) test
CHEM	chemical analysis (refer to text)
CID	consolidated isotropically drained triaxial test ¹
CIU	consolidated isotropically undrained triaxial test with porewater pressure measurement ¹
D _R	relative density (specific gravity, G _s)
DS	direct shear test
GS	specific gravity
M	sieve analysis for particle size
MH	combined sieve and hydrometer (H) analysis
MPC	Modified Proctor compaction test
SPC	Standard Proctor compaction test
OC	organic content test
SO ₄	concentration of water-soluble sulphates
UC	unconfined compression test
UU	unconsolidated undrained triaxial test
V (FV)	field vane (LV-laboratory vane test)
γ	unit weight

1. Tests which are anisotropically consolidated prior to shear are shown as CAD, CAU.

NON-COHESIVE (COHESIONLESS) SOILS

Compactness²

Term	SPT 'N' (blows/0.3m) ¹
Very Loose	0 - 4
Loose	4 to 10
Compact	10 to 30
Dense	30 to 50
Very Dense	>50

1. SPT 'N' in accordance with ASTM D1586, uncorrected for overburden pressure effects.

2. Definition of compactness descriptions based on SPT 'N' ranges from Terzaghi and Peck (1967) and correspond to typical average N₆₀ values.

Field Moisture Condition

Term	Description
Dry	Soil flows freely through fingers.
Moist	Soils are darker than in the dry condition and may feel cool.
Wet	As moist, but with free water forming on hands when handled.

COHESIVE SOILS

Consistency

Term	Undrained Shear Strength (kPa)	SPT 'N' ¹ (blows/0.3m)
Very Soft	<12	0 to 2
Soft	12 to 25	2 to 4
Firm	25 to 50	4 to 8
Stiff	50 to 100	8 to 15
Very Stiff	100 to 200	15 to 30
Hard	>200	>30

1. SPT 'N' in accordance with ASTM D1586, uncorrected for overburden pressure effects, approximate only.

Water Content

Term	Description
w < PL	Material is estimated to be drier than the Plastic Limit.
w ~ PL	Material is estimated to be close to the Plastic Limit.
w > PL	Material is estimated to be wetter than the Plastic Limit.



LIST OF SYMBOLS

Unless otherwise stated, the symbols employed in the report are as follows:

I. GENERAL

π	3.1416
$\ln x$	natural logarithm of x
\log_{10}	x or log x, logarithm of x to base 10
g	acceleration due to gravity
t	time

II. STRESS AND STRAIN

γ	shear strain
Δ	change in, e.g. in stress: $\Delta \sigma$
ϵ	linear strain
ϵ_v	volumetric strain
η	coefficient of viscosity
ν	Poisson's ratio
σ	total stress
σ'	effective stress ($\sigma' = \sigma - u$)
σ'_{vo}	initial effective overburden stress
$\sigma_1, \sigma_2, \sigma_3$	principal stress (major, intermediate, minor)
σ_{oct}	mean stress or octahedral stress $= (\sigma_1 + \sigma_2 + \sigma_3)/3$
τ	shear stress
u	porewater pressure
E	modulus of deformation
G	shear modulus of deformation
K	bulk modulus of compressibility

III. SOIL PROPERTIES

(a) Index Properties

$\rho(\gamma)$	bulk density (bulk unit weight)*
$\rho_d(\gamma_d)$	dry density (dry unit weight)
$\rho_w(\gamma_w)$	density (unit weight) of water
$\rho_s(\gamma_s)$	density (unit weight) of solid particles
γ'	unit weight of submerged soil ($\gamma' = \gamma - \gamma_w$)
D_R	relative density (specific gravity) of solid particles ($D_R = \rho_s / \rho_w$) (formerly G_s)
e	void ratio
n	porosity
S	degree of saturation

(a) Index Properties (continued)

w	water content
w_l or LL	liquid limit
w_p or PL	plastic limit
I_p or PI	plasticity index = $(w_l - w_p)$
w_s	shrinkage limit
I_L	liquidity index = $(w - w_p) / I_p$
I_C	consistency index = $(w_l - w) / I_p$
e_{max}	void ratio in loosest state
e_{min}	void ratio in densest state
I_D	density index = $(e_{max} - e) / (e_{max} - e_{min})$ (formerly relative density)

(b) Hydraulic Properties

h	hydraulic head or potential
q	rate of flow
v	velocity of flow
i	hydraulic gradient
k	hydraulic conductivity (coefficient of permeability)
j	seepage force per unit volume

(c) Consolidation (one-dimensional)

C_c	compression index (normally consolidated range)
C_r	recompression index (over-consolidated range)
C_s	swelling index
C_α	secondary compression index
m_v	coefficient of volume change
C_v	coefficient of consolidation (vertical direction)
C_h	coefficient of consolidation (horizontal direction)
T_v	time factor (vertical direction)
U	degree of consolidation
σ'_p	pre-consolidation stress
OCR	over-consolidation ratio = σ'_p / σ'_{vo}

(d) Shear Strength

τ_p, τ_r	peak and residual shear strength
ϕ'	effective angle of internal friction
δ	angle of interface friction
μ	coefficient of friction = $\tan \delta$
c'	effective cohesion
c_u, s_u	undrained shear strength ($\phi = 0$ analysis)
p	mean total stress $(\sigma_1 + \sigma_3)/2$
p'	mean effective stress $(\sigma'_1 + \sigma'_3)/2$
q	$(\sigma_1 - \sigma_3)/2$ or $(\sigma'_1 - \sigma'_3)/2$
q_u	compressive strength $(\sigma_1 - \sigma_3)$
S_t	sensitivity

* Density symbol is ρ . Unit weight symbol is γ where $\gamma = \rho g$ (i.e. mass density multiplied by acceleration due to gravity)

Notes: 1
2

$$\tau = c' + \sigma' \tan \phi'$$

$$\text{shear strength} = (\text{compressive strength})/2$$

PROJECT 1528972

RECORD OF BOREHOLE BH-104

SHEET 1 OF 1

LOCATION: REFER TO KEY PLAN AND NOTE BELOW

BORING DATE: May 7, 2015

DATUM: GEODETIC

SAMPLER HAMMER, 63.5 kg, DROP, 760 mm

DRILLING CONTRACTOR: Henderson Drilling Inc.

PENETRATION TEST HAMMER, 63.5 kg, DROP, 760 mm

DEPTH SCALE METRES	BORING METHOD	SOIL PROFILE			SAMPLES			ELEVATION	DYNAMIC PENETRATION RESISTANCE, BLOWS/0.3m				HYDRAULIC CONDUCTIVITY, k, cm/s				ADDITIONAL LAB TESTING	INSTALLATION AND GROUNDWATER OBSERVATIONS
		DESCRIPTION	STRATA PLOT	ELEV. DEPTH (m)	NUMBER	TYPE	BLOWS/0.3m		SHEAR STRENGTH Cu, kPa				WATER CONTENT PERCENT					
									20	40	60	80	10 ⁻⁵	10 ⁻⁶	10 ⁻⁷	10 ⁻⁸		
0		ROAD SURFACE		181.26														
		ASPHALT		181.03	1	AS												
		FILL - (SP/GP) SAND and GRAVEL, sub-angular, brown, (GRANULAR BASE)		180.70	2	SS	15											
		FILL - (SP/GP) SAND and GRAVEL, brown/black, with asphalt fragments, compact		180.56	3	SS	7											
		FILL - (CL) sandy SILTY CLAY, trace gravel; brown, sand and organic pockets; cohesive, firm		179.89	4	SS	6											
		(CL) sandy SILTY CLAY, trace gravel; mottled brown and grey, organic pockets, (TILL); cohesive, firm		179.13	5	SS	9											
		(CL) sandy SILTY CLAY, trace gravel, brown, oxidized fissures, silt partings, (TILL); cohesive, stiff to very stiff		177.60	6	SS	26											
		(CL) sandy SILTY CLAY, trace gravel, grey, (TILL); cohesive, very stiff to stiff		173.18	7	SS	20											
		(CL) sandy SILTY CLAY, trace gravel, grey, (TILL); cohesive, very stiff to stiff		173.18	8	SS	13											
		(CL) sandy SILTY CLAY, trace gravel, grey, (TILL); cohesive, very stiff to stiff		173.18	9	SS	22											
		(CL) sandy SILTY CLAY, trace gravel, grey, (TILL); cohesive, very stiff to stiff		173.18	10	SS	14											
8		END OF BOREHOLE		173.18														
9		BOREHOLE LOCATION STRUCTURE No. 7 Concession Road 6 - North Bound Lane, 2.4m north of north edge of headwall, 2.4m east of centerline of road.		173.18														

Borehole dry during and upon completion of drilling on May 7, 2015.

LON_BHS_07_1528972.GPJ GLDR_LON.GDT 20/05/15 DATA INPUT: DMB

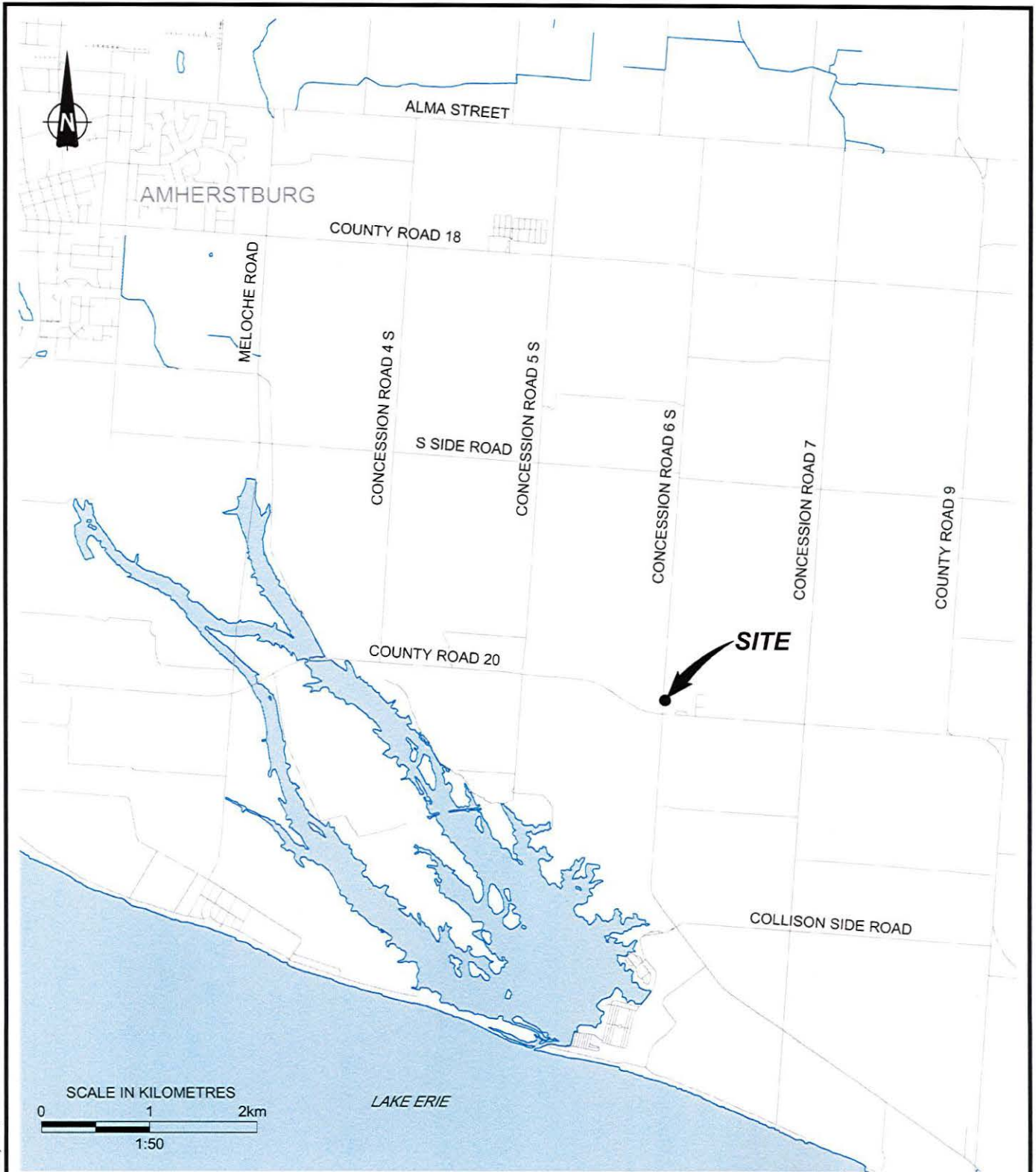
DEPTH SCALE

1:50



LOGGED: SM

CHECKED:



Drawing file: 1528972-R04001.dwg
 May 21, 2015 - 9:23am

REFERENCE

DRAWING BASED ON 2013 AERIAL IMAGE FROM THE COUNTY OF ESSEX INTERACTIVE WEB MAPPING SITE, BY PERMISSION; AND CANMAP STREETFILES V2008.4.

NOTES

THIS DRAWING IS SCHEMATIC ONLY AND IS TO BE READ IN CONJUNCTION WITH ACCOMPANYING TEXT.
 ALL LOCATIONS ARE APPROXIMATE.

PROJECT		PROPOSED CULVERT REPLACEMENT STRUCTURE No. 7 TOWN OF AMHERSTBURG, ONTARIO	
TITLE			
KEY PLAN			
PROJECT No.		1528972	FILE No.
			1528972-R04001
CAAD		DMB	May 20/15
CHECK			
		SCALE AS SHOWN REV.	
			FIGURE 1



At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

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APPENDIX E

DRAWINGS

FOR

**CULVERT 7 REPLACEMENT OVER
ALBERT MCGEE DRAIN**

T11-2017-002

GENERAL NOTES

- THE CANADIAN HIGHWAY BRIDGE DESIGN CODE CAN/CSA S6 LATEST EDITION SHALL BE THE BASIS FOR CONSTRUCTION AND DESIGN OF ALL WORK ON THIS PROJECT.
- THE CONTRACTOR SHALL FIELD CHECK AND VERIFY ALL CONDITIONS AND MEASUREMENTS AT THE SITE AND REPORT ANY DISCREPANCIES TO THE CONSULTANT BEFORE PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL CONFIRM THE LOCATION, SIZES AND DEPTHS OF ALL EXISTING UTILITIES, INCLUDING THOSE SUPPORTED BY OR A PART OF THE BRIDGE STRUCTURE, PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO THE OWNER FOR ANY DAMAGES TO ANY UTILITY.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY TEMPORARY BRACING AS REQUIRED FOR ALIGNMENT, WIND, DEAD LOAD AND ERECTION STRESSES.
- THE CONTRACTOR SHALL DISPOSE OF REMOVED AND EXCESS MATERIALS OFF SITE IN A SUITABLE MANNER. EXCESS MATERIALS SHALL NOT BE STORED WITHIN THE RIPARIAN AREA.
- THE CONTRACTOR SHALL TAKE GREAT CARE TO AVOID DAMAGE TO VEGETATION AND IMPROVEMENTS OUTSIDE THE LIMITS OF CONSTRUCTION AND TO KEEP THE CONSTRUCTION AREA TO A MINIMUM.
- THE CONTRACTOR SHALL ESTABLISH EFFECTIVE SEDIMENT AND EROSION CONTROL MEASURES PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES. THE MEASURES SHALL BE INSPECTED DAILY AND BE REPAIRED OR REPLACED AS REQUIRED TO REMAIN EFFECTIVE.
- THE CONTRACTOR SHALL SCHEDULE ANY "IN-WATER WORKS" TO BE PERFORMED BEFORE MARCH 15TH OR AFTER JUNE 30TH.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND PERFORMING HIS ACTIVITIES, SUCH THAT ALL WORK WILL BE PERFORMED ON LAND OR ON THE WATER (I.E. FROM A BARGE) IN DRY WEATHER, WHEN RAIN IS NOT IMMINENT.
- MATERIALS STORAGE AND REFUELING OPERATIONS SHALL TAKE PLACE AS FAR FROM WATER BODIES AS POSSIBLE TO PREVENT ENTRY OF DELETERIOUS SUBSTANCES TO THE WATER BODY.
- SHOULD ANY PROTECTED SPECIES AND/OR HABITATS BE OBSERVED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND ALL WORK ACTIVITIES AND CONTACT THE MINISTRY OF NATURAL RESOURCES, ATYMER DISTRICT OFFICE (519-773-9241).
- THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS, CONDITIONS, AND RESTRICTIONS THAT MAY BE IMPOSED BY APPROVAL AGENCIES.
- ALL UNITS ARE IN MILLIMETERS U.N.O.

PAVING

- SAWCUT EDGE OF EXISTING ASPHALT PAVEMENT TO MEET NEW ASPHALT, WHERE NECESSARY.
- APPLY TACK COAT PER OPSD 313 PRIOR TO PLACEMENT OF EACH COURSE.
- SUPPLY ALL MATERIALS REQUIRED FOR THE PROPER PLACEMENT OF PAVEMENTS.
- INSTALL PAVEMENTS TO MATCH EXISTING LINES AND GRADES.
- GENERAL CONTRACTOR TO PAINT PAVEMENT MARKINGS TO MATCH EXISTING (PART OF RESTORATION).

CONCRETE

- ALL CONCRETE WORK SHALL CONFORM TO CSA/CAN A23.1-00 AND CSA A23.3 AND S6-06.
- ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 40 MPa UNO IN SCHEDULE.
- CONCRETE REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO CSA G30.18-M92 HAVING A MINIMUM YIELD STRENGTH OF 400 MPa.
- MINIMUM CONCRETE COVER FOR REINFORCING STEEL SHALL BE :
40±10 FOR SLABS ≤ 300 THICK
50±10 FOR SLABS > 300 THICK
- LAP AND ANCHOR SPLICES TO CONFORM TO CSA S6
- UNDERGROUND CONCRETE WORK USE SULPHATE RESISTANT CEMENT CSA 50 UNLESS PROVEN BY TEST THAT THE SULFATE CONTENT OF THE SOIL IS WITHIN THE ALLOWABLE.
- ALL EXPOSED CORNERS OF CONCRETE ARE TO HAVE 19mm CHAMFER.
- SUBMIT SHOP DRAWINGS OF REBAR TO THE ENGINEER FOR APPROVAL.
- BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH SIDES OF CULVERT KEEPING THE HEIGHT OF THE BACKFILL APPROXIMATELY THE SAME AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 500
- NO CONCRETE SHALL BE PLACED UNTIL THE DEPTH OF THE EXCAVATION AND THE CHARACTER OF THE FOUNDATION HAVE BEEN APPROVED BY THE CONSULTANT
- SUPPORTS FOR REINFORCING STEEL SHALL BE AS PER OPSD-3329.101 AND OPSD-3329.100 ON FORMED SURFACES. ON NON-FORMED SURFACES, CONCRETE BLOCKS (MIN 20 MPa) SHALL BE USED

GEOTECHNICAL

- FOOTING SHALL BE CARRIED DOWN TO NATURAL UNDISTURBED SOIL CAPABLE OF SUSTAINING AN ALLOWABLE PRESSURE AS DEFINED IN THE ASSOCIATED SOILS REPORT
- BEDDING AND BACKFILL SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND REQUIREMENTS OF CSA S6-06.
- REFER TO GEOTECHNICAL REPORT PREPARED BY GOLDER ASSOCIATES FOR SOILS INFORMATION.

PRECAST RETAINING WALLS

- ALL PRECAST RETAINING WALLS TO BE PRODUCED BY A COMPANY WITH A MINIMUM OF 5 YEARS EXPERIENCE IN SUCH WORK
- SUBMIT ENGINEERED SHOP DRAWINGS AND CALCULATIONS FOR REVIEW INCLUSIVE OF BLOCK TO BLOCK CONNECTION DETAILS FOR REVIEW
- SHALL BE FREE FROM SPALLS AND OTHER DAMAGE.
- ALL GEOTEXTILES SHALL BE CUT TO ENSURE NO PROJECTION PAST THE FACE OF THE BLOCK

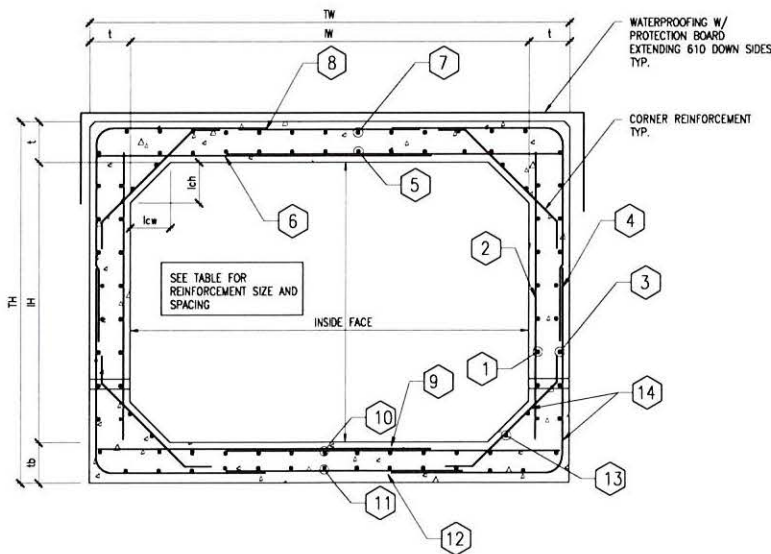
DRAIN WORK

- ALL WORK ON DRAINS WILL BE PER EXISTING DRAINAGE REPORT RECOMMENDATIONS AND IN ACCORDANCE WITH THE DRAINAGE ACT
- THE GENERAL CONTRACTOR SHALL CLEAN ALL CHANNELS OF DEBRIS, OVERGROWTH AND OBSTRUCTIONS TO FLOW, WHILE MAINTAINING THE EXISTING CHANNEL GEOMETRY U.N.O.
- ALL DRAINS TO BE CLEANED TO LIMITS OF RIGHT OF WAY U.N.O.

OPSS

THE FOLLOWING OPSS PROVISIONS APPLY, IN CONJUNCTION WITH ANY REFERENCED THEREIN:

OPSS 201, 0206, 0301, 0302, 0308, 0313 PROV., 0401, 0402, 0407, 0421, 0422, 0491, 0492, 0501, 0506, 0510, 0511, 0517, 0518, 0539, 0801, 0802, 0804, 0805, 0902, 0904 PROV., 0905, 0909, 0914, 0920 PROV.



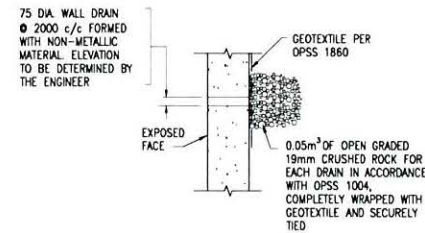
BOX CULVERT LEGEND

1	100mm x 100mm
2	100mm x 100mm
3	100mm x 100mm
4	100mm x 100mm
5	100mm x 100mm
6	100mm x 100mm
7	100mm x 100mm
8	100mm x 100mm
9	100mm x 100mm
10	100mm x 100mm
11	100mm x 100mm
12	100mm x 100mm
13	100mm x 100mm
14	100mm x 100mm

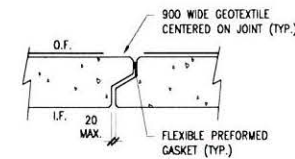
1 RIGID FRAME PRECAST BOX CULVERT DIMENSIONS AND REINFORCING
SG-100 1 : 25

BOX CULVERT SIZE AND REINFORCEMENT SCHEDULE *

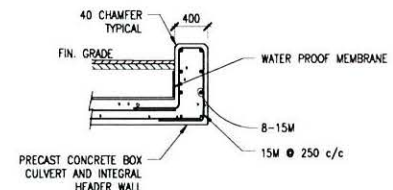
Span	TH	H	B	Reinforcement	Notes
2.1m	1000	1000	1000	100mm x 100mm	
2.7m	1000	1000	1000	100mm x 100mm	
3.3m	1000	1000	1000	100mm x 100mm	
3.9m	1000	1000	1000	100mm x 100mm	
4.5m	1000	1000	1000	100mm x 100mm	
5.1m	1000	1000	1000	100mm x 100mm	
5.7m	1000	1000	1000	100mm x 100mm	
6.3m	1000	1000	1000	100mm x 100mm	
6.9m	1000	1000	1000	100mm x 100mm	
7.5m	1000	1000	1000	100mm x 100mm	
8.1m	1000	1000	1000	100mm x 100mm	
8.7m	1000	1000	1000	100mm x 100mm	
9.3m	1000	1000	1000	100mm x 100mm	
9.9m	1000	1000	1000	100mm x 100mm	
10.5m	1000	1000	1000	100mm x 100mm	
11.1m	1000	1000	1000	100mm x 100mm	
11.7m	1000	1000	1000	100mm x 100mm	
12.3m	1000	1000	1000	100mm x 100mm	
12.9m	1000	1000	1000	100mm x 100mm	
13.5m	1000	1000	1000	100mm x 100mm	
14.1m	1000	1000	1000	100mm x 100mm	
14.7m	1000	1000	1000	100mm x 100mm	
15.3m	1000	1000	1000	100mm x 100mm	
15.9m	1000	1000	1000	100mm x 100mm	
16.5m	1000	1000	1000	100mm x 100mm	
17.1m	1000	1000	1000	100mm x 100mm	
17.7m	1000	1000	1000	100mm x 100mm	
18.3m	1000	1000	1000	100mm x 100mm	
18.9m	1000	1000	1000	100mm x 100mm	
19.5m	1000	1000	1000	100mm x 100mm	
20.1m	1000	1000	1000	100mm x 100mm	
20.7m	1000	1000	1000	100mm x 100mm	
21.3m	1000	1000	1000	100mm x 100mm	
21.9m	1000	1000	1000	100mm x 100mm	
22.5m	1000	1000	1000	100mm x 100mm	
23.1m	1000	1000	1000	100mm x 100mm	
23.7m	1000	1000	1000	100mm x 100mm	
24.3m	1000	1000	1000	100mm x 100mm	
24.9m	1000	1000	1000	100mm x 100mm	
25.5m	1000	1000	1000	100mm x 100mm	
26.1m	1000	1000	1000	100mm x 100mm	
26.7m	1000	1000	1000	100mm x 100mm	
27.3m	1000	1000	1000	100mm x 100mm	
27.9m	1000	1000	1000	100mm x 100mm	
28.5m	1000	1000	1000	100mm x 100mm	
29.1m	1000	1000	1000	100mm x 100mm	
29.7m	1000	1000	1000	100mm x 100mm	
30.3m	1000	1000	1000	100mm x 100mm	
30.9m	1000	1000	1000	100mm x 100mm	
31.5m	1000	1000	1000	100mm x 100mm	
32.1m	1000	1000	1000	100mm x 100mm	
32.7m	1000	1000	1000	100mm x 100mm	
33.3m	1000	1000	1000	100mm x 100mm	
33.9m	1000	1000	1000	100mm x 100mm	
34.5m	1000	1000	1000	100mm x 100mm	
35.1m	1000	1000	1000	100mm x 100mm	
35.7m	1000	1000	1000	100mm x 100mm	
36.3m	1000	1000	1000	100mm x 100mm	
36.9m	1000	1000	1000	100mm x 100mm	
37.5m	1000	1000	1000	100mm x 100mm	
38.1m	1000	1000	1000	100mm x 100mm	
38.7m	1000	1000	1000	100mm x 100mm	
39.3m	1000	1000	1000	100mm x 100mm	
39.9m	1000	1000	1000	100mm x 100mm	
40.5m	1000	1000	1000	100mm x 100mm	
41.1m	1000	1000	1000	100mm x 100mm	
41.7m	1000	1000	1000	100mm x 100mm	
42.3m	1000	1000	1000	100mm x 100mm	
42.9m	1000	1000	1000	100mm x 100mm	
43.5m	1000	1000	1000	100mm x 100mm	
44.1m	1000	1000	1000	100mm x 100mm	
44.7m	1000	1000	1000	100mm x 100mm	
45.3m	1000	1000	1000	100mm x 100mm	
45.9m	1000	1000	1000	100mm x 100mm	
46.5m	1000	1000	1000	100mm x 100mm	
47.1m	1000	1000	1000	100mm x 100mm	
47.7m	1000	1000	1000	100mm x 100mm	
48.3m	1000	1000	1000	100mm x 100mm	
48.9m	1000	1000	1000	100mm x 100mm	
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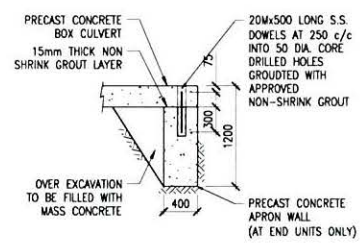
1 WALL DRAIN DETAIL
SG-101 1 : 50



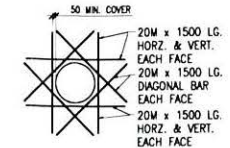
2 PRECAST JOINT DETAIL
SG-101 1 : 25



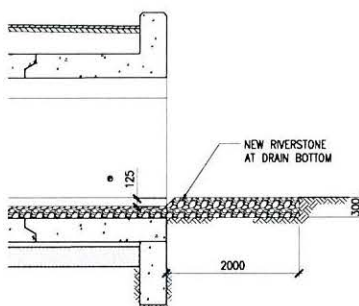
3 TYPICAL HEADER WALL DETAIL
SG-101 1 : 40



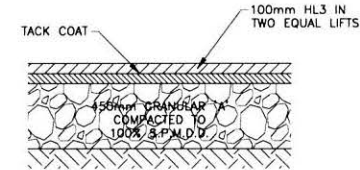
4 TYP. APRON DETAIL
SG-101 1 : 40



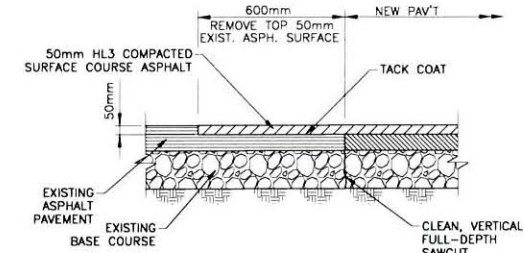
5 REINFORCING DETAIL FOR OPENINGS IN CONCRETE < 600mm
SG-101 1 : 50



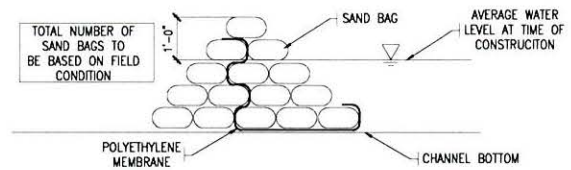
6 TYP. EXTENT OF RIVERSTONE
SG-101 1 : 50



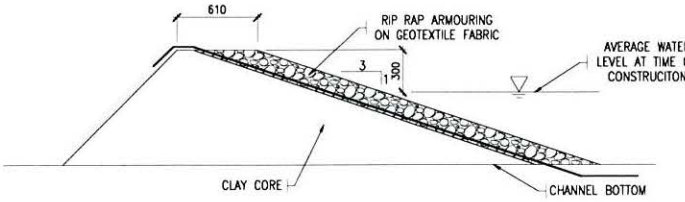
7 APPROACH PAVEMENT DETAIL
SG-101 N.T.S.



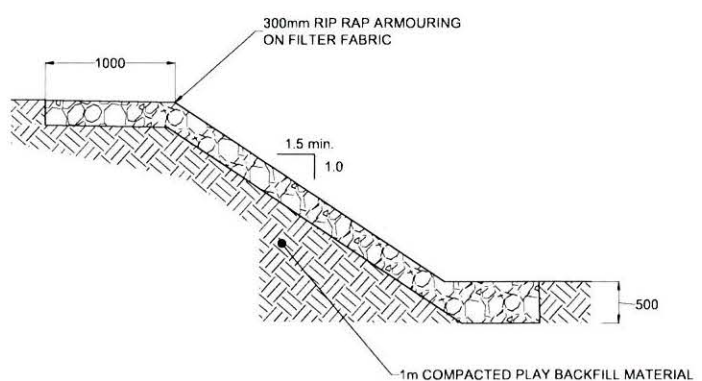
8 TYPICAL BUTT JOINT DETAIL
SG-101 N.T.S.



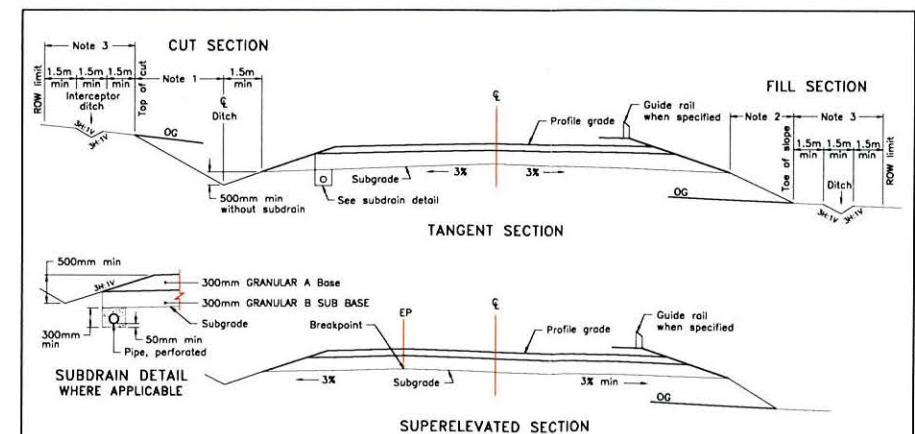
9 PROPOSED SANDBAG COFFERDAM
SG-101 N.T.S. * FINAL COFFER DESIGN TO BE BY G.C., SUBMIT SHOP DRAWINGS



10 PROPOSED CLAY FILL COFFERDAM
SG-101 N.T.S. * FINAL COFFER DESIGN TO BE BY G.C., SUBMIT SHOP DRAWINGS



11 TYPICAL RIP RAP ARMOURING
SG-101 N.T.S.



NOTES:
1 Cut slope shall be 3H:1V or steeper when specified.
2 Fill slope shall be 3H:1V or flatter when specified.
3 Distance shall be 1.5m minimum when ditch is not required.
A This OPSS to be read in conjunction with OPSS 202.010 and OPSS 202.020.
B All dimensions are in metres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2009	Rev 2
EARTH/SHALE GRADING UNDIVIDED RURAL		
		OPSD 200.010



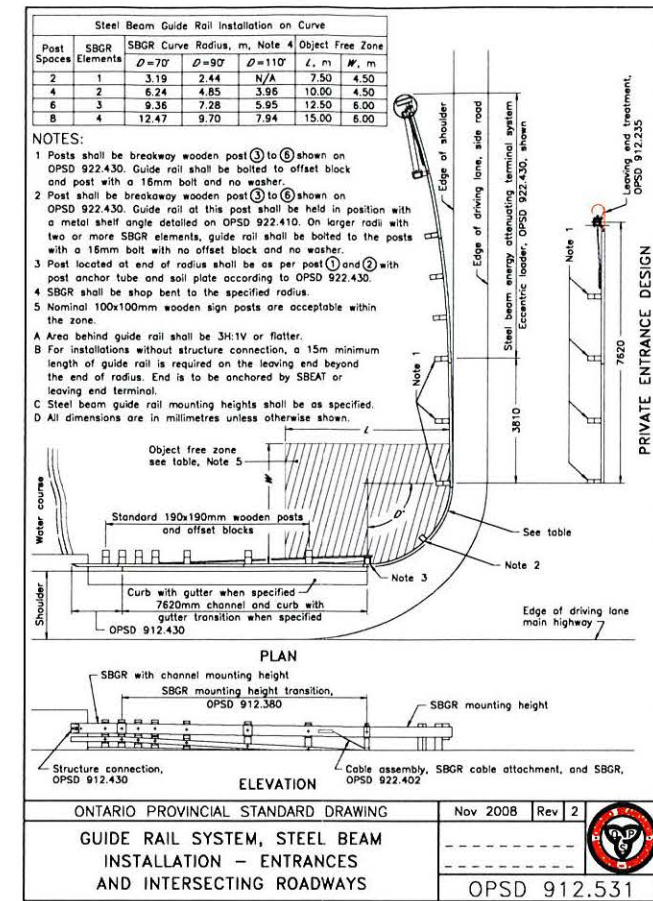
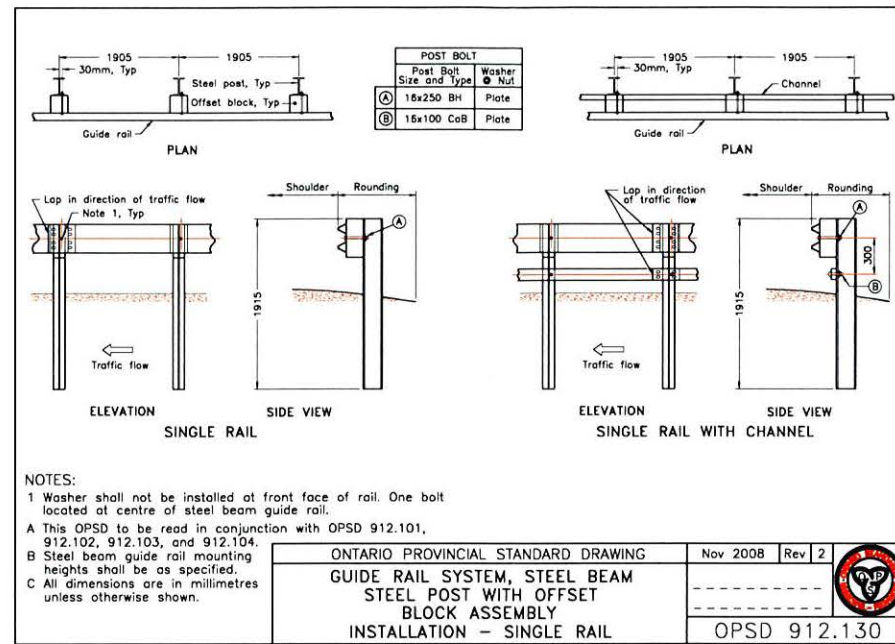
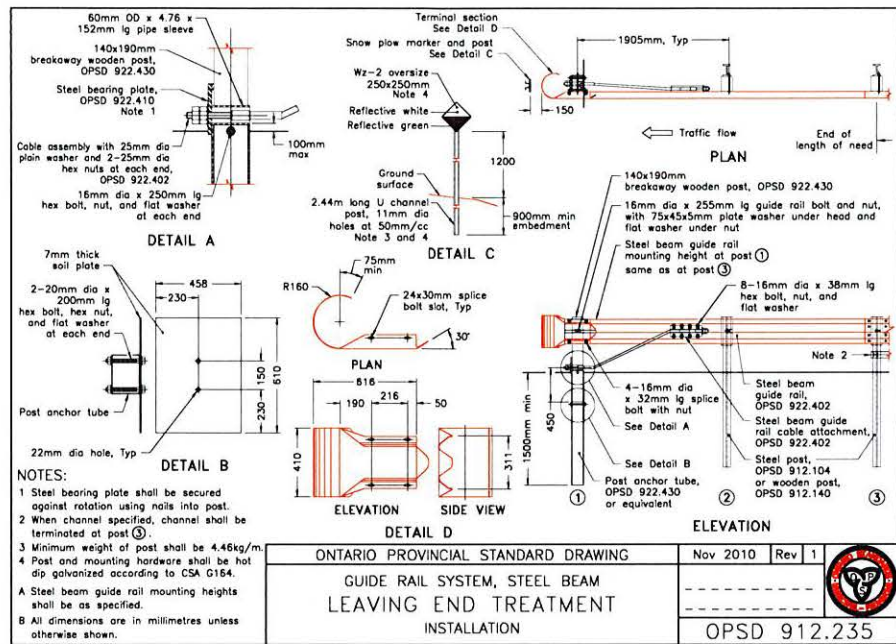
APR 26/17	TENDER
APR 5/17	PERMIT
MA 06/17	CLIENT REVIEW
JAN 28/16	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
CULVERT 7 REPLACEMENT OVER ALBERT MCGEE DRAIN

DWG TITLE
GENERAL DETAILS

DATE	MARCH 2017
SCALE	AS SHOWN
DESIGNED BY	W.T.
DRAWN BY	J.B. / A.I.
CHECKED BY	M.M.
APPROVED BY	W.T.
PROJECT NO	15-125/126

DWG NO
SG-101



APR 26/17	TENDER
APR 5/17	PERMIT
MAY 06/17	CLIENT REVIEW
JAN 28/16	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
CULVERT 7 REPLACEMENT OVER ALBERT MCGEE DRAIN
 CULVERT # 7

DWG TITLE
GENERAL DETAILS

DATE	: MARCH 2017
SCALE	: AS SHOWN
DESIGNED BY	: W.T.
DRAWN BY	: J.B. / A.I.
CHECKED BY	: M.M.
APPROVED BY	: W.T.
PROJECT NO	: 15-125/126

DWG NO
SG-103



APR 26/17

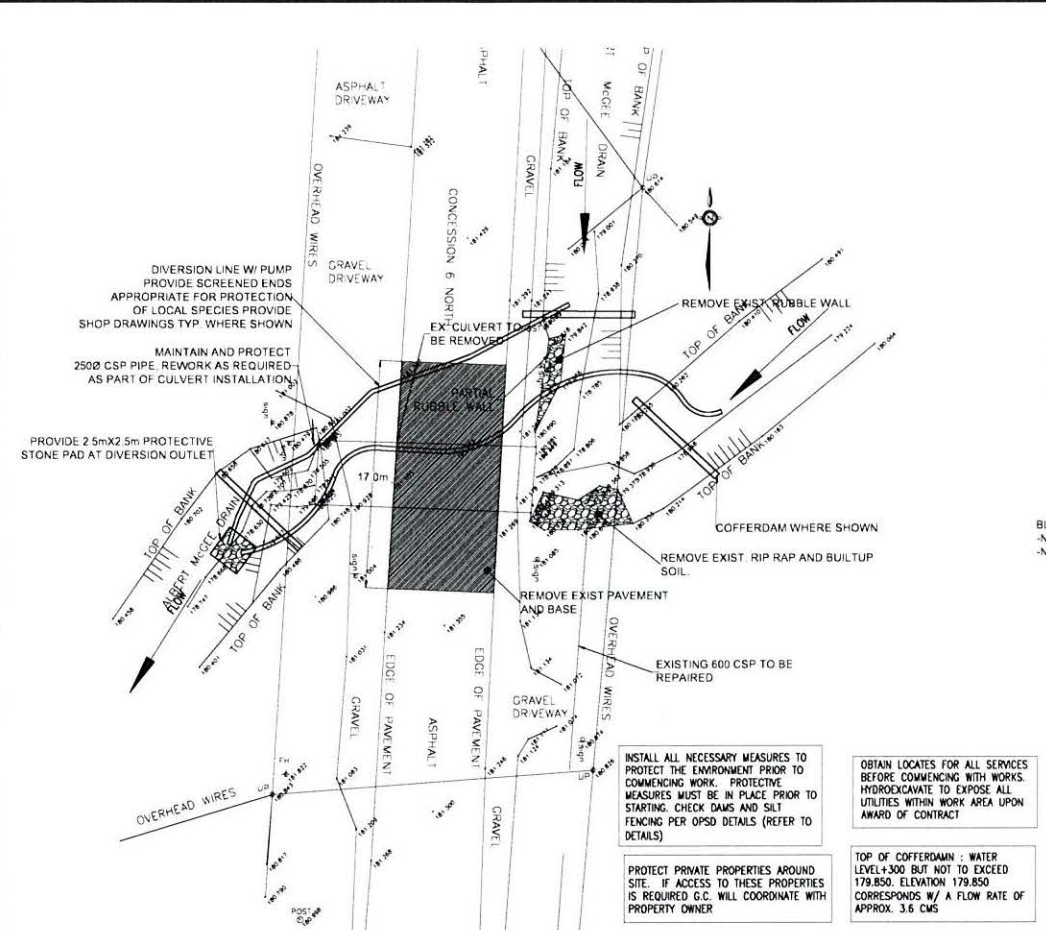
APR 26/17	TENDER
APR 5/17	PERMIT
MA 06/17	CLIENT REVIEW
JAN 28/16	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
CULVERT 7 REPLACEMENT OVER ALBERT MCGEE DRAIN

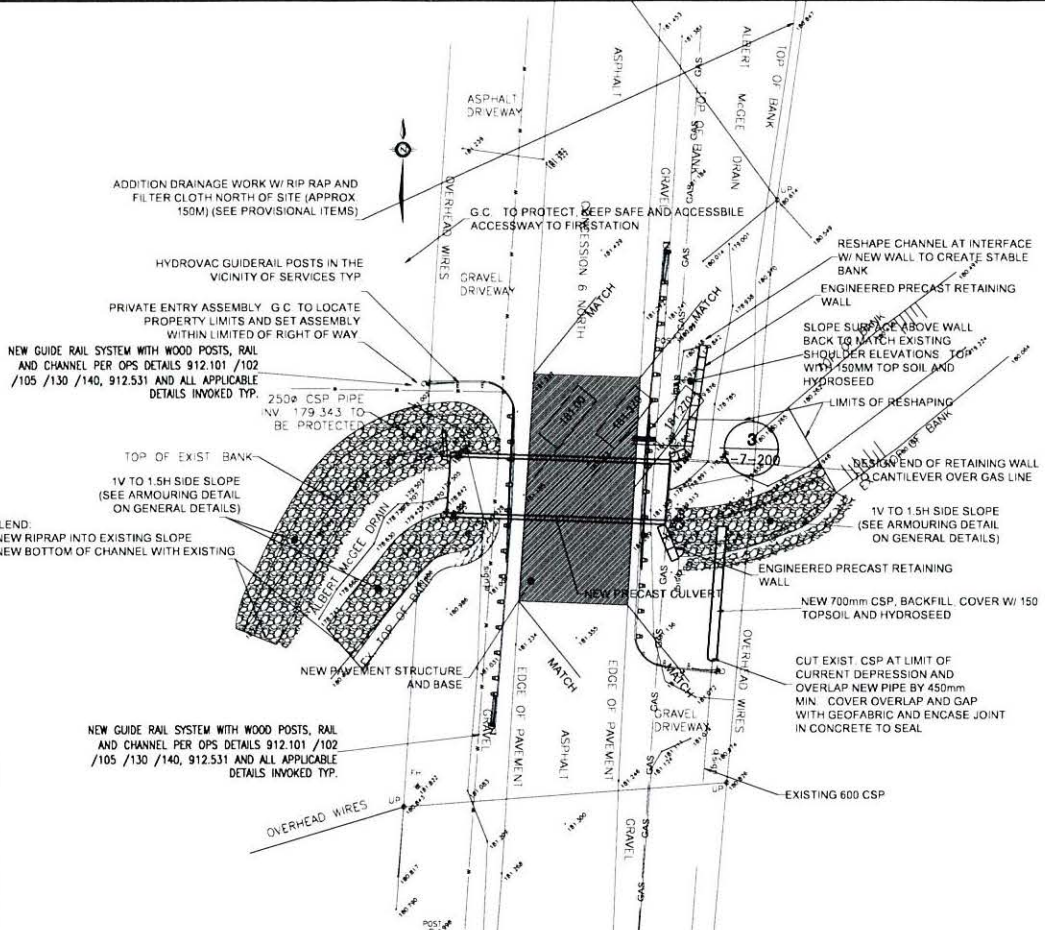
DWG TITLE
CULVERT 7 PLANS AND SECTIONS

DATE	: MARCH 2017
SCALE	: AS SHOWN
DESIGNED BY	: W.T.
DRAWN BY	: J.B. / A.I.
CHECKED BY	: M.M.
APPROVED BY	: W.T.
PROJECT NO	: 15-125/128

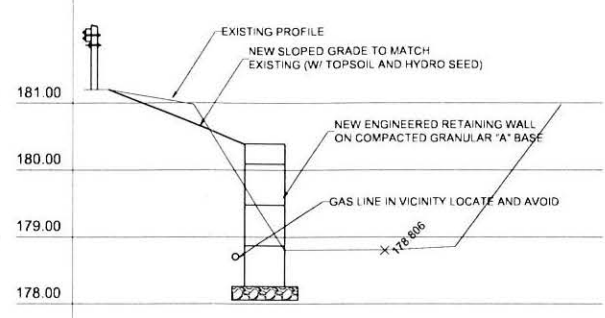
DWG NO
S-7-200



1 EXISTING CONDITIONS
 5-7-200 SCALE: 1=250

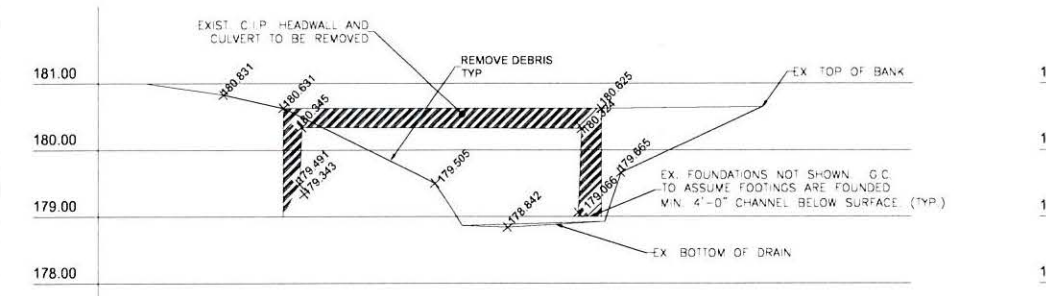


2 PROPOSED CONDITIONS
 5-7-200 SCALE: 1=250

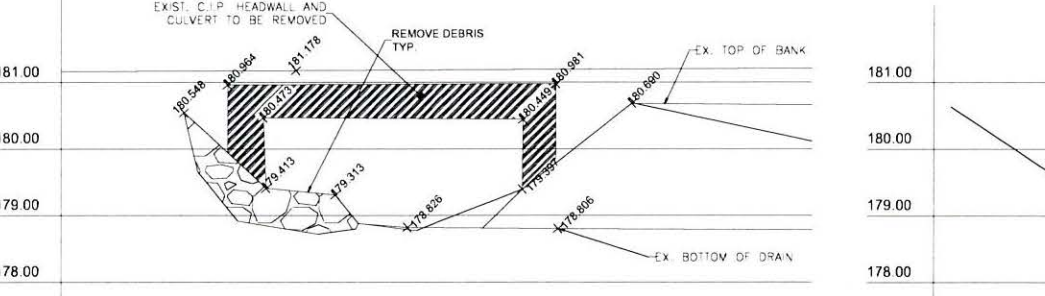


3 PROPOSED CONDITIONS AT NEW WALL
 5-7-200 SCALE: 1=50

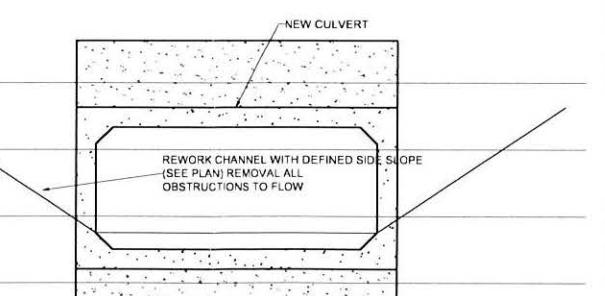
- NOTES
- REFER TO GENERAL DETAIL SHEETS
 - REFER TO APPLICABLE OPSD AND OPSD PROVISIONS
 - READ IN CONJUNCTION WITH SG-100



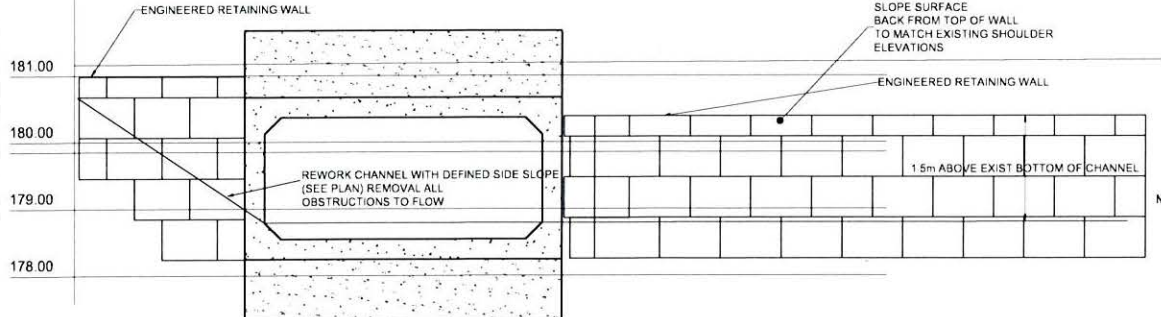
4 EXISTING CONDITIONS WEST ELEVATION
 5-7-200 SCALE: 1=50



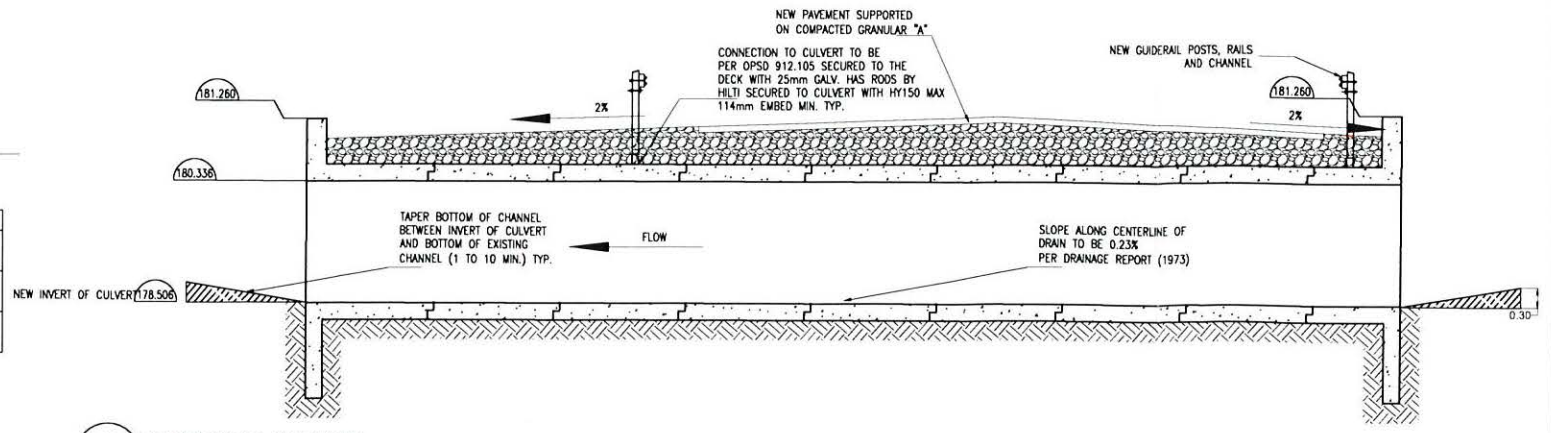
5 EXISTING CONDITIONS EAST ELEVATION
 5-7-200 SCALE: 1=50



6 PROPOSED CONDITIONS WEST ELEVATION
 5-7-200 SCALE: 1=50



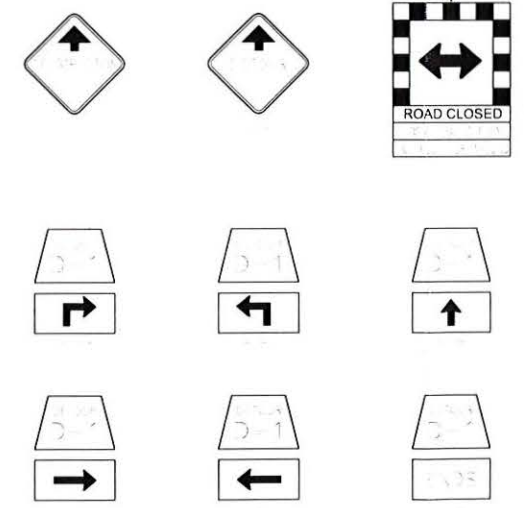
7 PROPOSED CONDITIONS EAST ELEVATION
 5-7-200 SCALE: 1=50



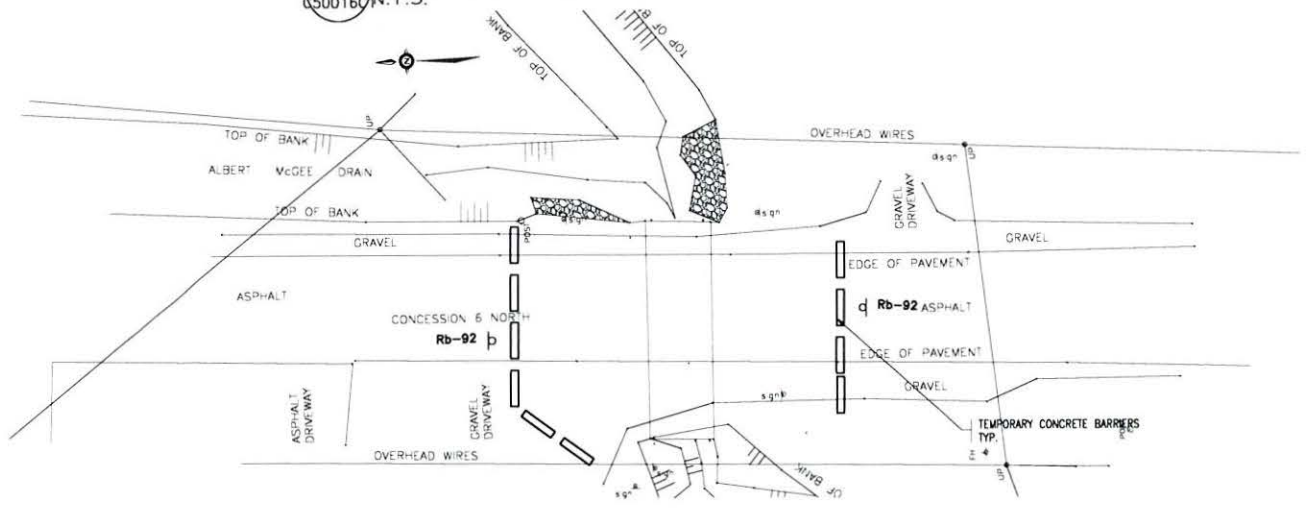
8 PROPOSED SECTION
 5-7-200 SCALE: 1=50



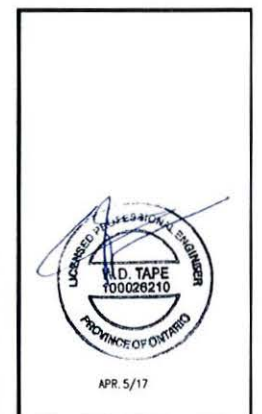
- NOTES:
1. THIS DRAWING IS ONLY INTENDED TO SERVE AS A GUIDE TO THE CONTRACTOR AND IN NO WAY RELIEVES THE CONTRACTOR OF HIS OBLIGATIONS SO SPECIFIED IN THE CONTRACT DOCUMENTS.
 2. ALL SIGNS SHALL CONFORM TO THE LATEST EDITION OF THE ONTARIO MINISTRY OF TRANSPORTATION - ONTARIO TRAFFIC MANUAL - BOOK 7 - TEMPORARY CONDITIONS.
 3. THE CONTRACTOR SHALL PROVIDE ADEQUATE LIGHTING TO ENSURE SAFETY OF THE PUBLIC AND THE SMOOTH FLOW OF TRAFFIC.
 4. ALL SIGNS, BARRICADES AND LIGHTS SHALL BE INSPECTED REGULARLY AND MAINTAINED BY THE CONTRACTOR.
 5. DURING DIFFERENT STAGES OF CONSTRUCTION, MINOR MODIFICATIONS TO DETOUR SIGNING MAY BE NECESSARY.
 6. REFLECTORIZED MATERIALS ARE TO BE USED IN THE MANUFACTURE OF THESE SIGNS IN ACCORDANCE WITH THE MINISTRY OF TRANSPORTATION GUIDELINES.
 7. TRAFFIC CONTROL PERSONS TO BE USED AS NECESSARY.
 8. Rb-92 TO BE USED WHEN LOCAL TRAFFIC IS NOT PERMITTED WITHIN THE CURRENT WORK ZONE.



1 MINIMUM SUGGESTED TRAFFIC SIGNAGE
 0500160 N.T.S.



2 ENLARGED SITE TEMPORARY MINIMUM SIGNAGE PLAN
 0500160 N.T.S.



APR. 5/17	PERMIT
MA 06/17	CLIENT REVIEW
JAN 28/16	CLIENT REVIEW
DATE	ISSUED FOR

PROJECT
 CULVERT 7 REPLACEMENT OVER ALBERT MCGEE DRAIN
 PWD-RD-2017-0xx

DWG TITLE:

DATE	: MARCH 2017
SCALE	: AS SHOWN
DESIGNED BY	: W.T.
DRAWN BY	: J.B. / A.I.
CHECKED BY	: M.M.
APPROVED BY	: W.T.
PROJECT NO	: 15-125/126

DWG NO
 T-7