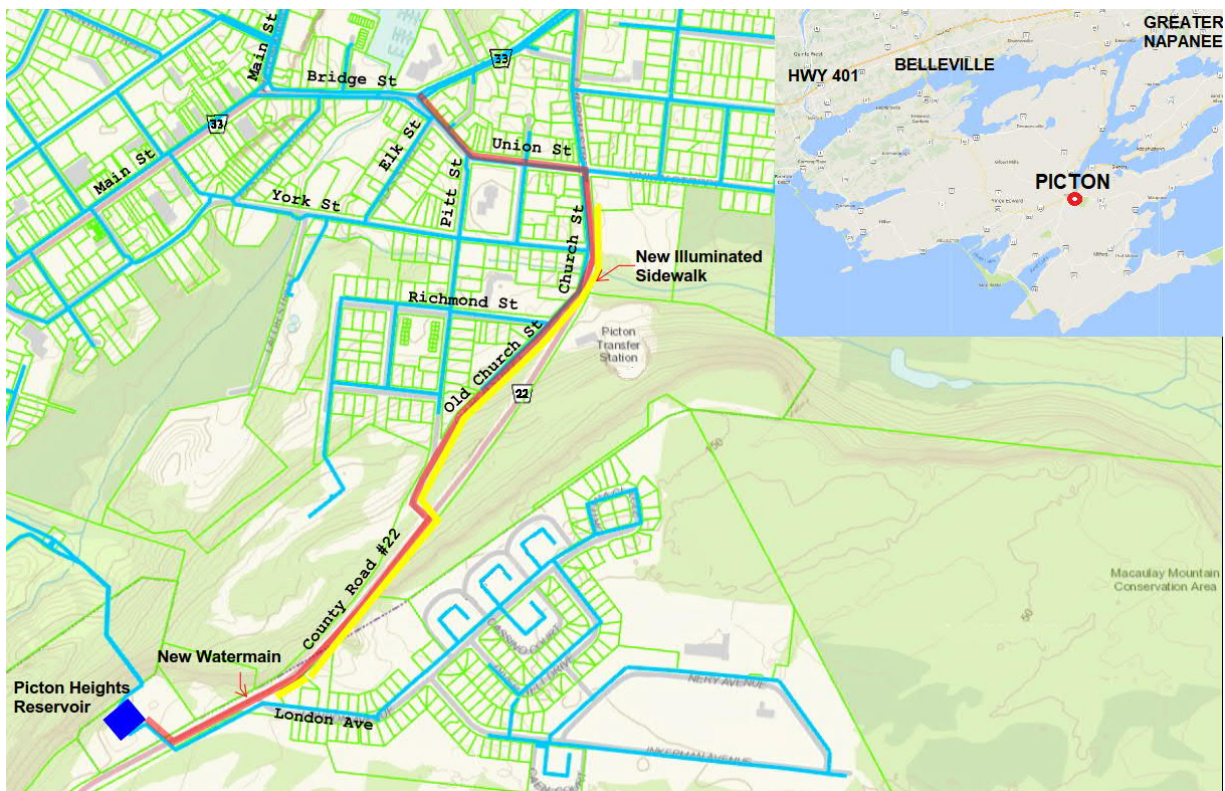




# Corporation of the County of Prince Edward

## Picton Heights Reservoir Watermain Improvements and Illuminated Sidewalk

**Contract No.: 2019-EDW-02**



Tender Close: 2:00p.m. Tuesday, April 23 2019



**THE CORPORATION OF THE COUNTY OF PRINCE EDWARD  
REQUEST FOR TENDER**

**TENDER # 2019-EDW-02**

**Picton Heights Reservoir Watermain Improvements and Illuminated Sidewalk**

Use Blue or Black Ink to Complete

\_\_\_\_\_  
Name of Firm

\_\_\_\_\_  
Address

\_\_\_\_\_  
Postal Code

\_\_\_\_\_  
Telephone Number

\_\_\_\_\_  
Fax Number

\_\_\_\_\_  
Name of Person Signing for Firm

\_\_\_\_\_  
Name of Contact Person

\_\_\_\_\_  
Email Address for Contact Person

\_\_\_\_\_  
Company Web site

**CLOSING DATE April 23, 2019 AT 2:00:00 P.M. LOCAL TIME**

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## DEFINITIONS AND INTERPRETATIONS

### 1. Definitions:

Wherever a term set out below appears in the text of this TENDER in capital letters, the term shall have the meaning set out for it in this Section 1. Wherever a term below appears in the text of this TENDER in lower case, it shall be deemed to have the meaning ordinarily attributed to it in the English language.

- a) **ALTERNATIVE** means a choice of things, each being fully compliant.
- b) **BIDDER'S LIST** means a list maintained by the MUNICIPALITY containing the names of firms or individuals who have expressed an interest in receiving notice of opportunities to supply goods or services to the MUNICIPALITY from time to time.
- c) **MUNICIPALITY** means THE CORPORATION OF THE COUNTY OF PRINCE EDWARD and includes its successors and assigns.
- d) **CONTRACT** means the agreement to be entered into between the SUPPLIER and the MUNICIPALITY with respect to the supply of the EQUIPMENT, MATERIAL, and SERVICES. It shall be based upon this TENDER, with any agreed upon amendments, and shall also include any plans and terms of reference and will be held to cover the supply of any and all work, labour, implements, and MATERIAL that could be reasonably required to properly and satisfactorily supply the EQUIPMENT, MATERIAL AND/OR SERVICES.
- e) **SUPPLIER and/or SUPPLIES** means the BIDDER(s) whose TENDER(s) is/are accepted and who has/have agreed to supply the EQUIPMENT, MATERIAL AND SERVICES as described in the CONTRACT. In either case, the term extends to its legal representatives, successors and permitted assigns, agents, employees, SUPPLIERS and suppliers.
- f) **EQUIPMENT, MATERIAL** means all goods, MATERIAL, articles, EQUIPMENT, software and intellectual property (or any part of them) as described in the Terms of Reference attached to this TENDER as Part D and acquired through the inclusion of such EQUIPMENT, MATERIAL in a schedule to the CONTRACT from time to time throughout the term of the CONTRACT.
- g) **IMPROPER** means a TENDER that is not in conformity in some manner with the requirements of this TENDER but will be reviewed by the MUNICIPALITY to determine whether it may be considered in the evaluation process, in the sole and unfettered discretion of the MUNICIPALITY.
- h) **BIDDER(S)** means all persons, partnerships or corporations who respond to this TENDER, and includes their heirs, successors, and permitted assigns.
- i) **TENDER(S)** means the BIDDER'S submission in response to this TENDER, including the terms of reference, directions, specifications, schedules and requirements, together with all documents of any description and agreements made or to be made pertaining to the method of supplying the EQUIPMENT, MATERIAL AND/OR SERVICES or to the quantities as shown of acceptable MATERIAL to be furnished under the CONTRACT.

- j) **TENDER** means this Request for TENDER document, including all schedules, parts and attachments, as issued by the MUNICIPALITY, including any addenda or amendments made to it after initial use.
- k) **SERVICES** means the services as required and described in Part D, Terms of Reference, Specifications/Deliverables of this TENDER and EQUIPMENT, MATERIAL as described in the Terms of Reference attached to this TENDER as Part D and the Schedule of Prices attached to this TENDER as Part C.
- l) **TOTAL ACQUISITION COST** means the sum of all costs, including purchase price, all taxes, warranty, life cycle cost, operating and disposal costs.

<b>2. <u>Interpretation:</u> The following rules of interpretation apply:</b>
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- a) The term 'best value' means the most cost efficient and effective manner of supplying the EQUIPMENT, MATERIAL AND/OR SERVICES in the sole and unfettered opinion of the MUNICIPALITY.
- b) Where any mention is made to the masculine gender in any part of this TENDER or the CONTRACT, it shall be interpreted as, and deemed to mean, the masculine or feminine gender. Words in the singular can be interpreted in the plural, and vice versa, as the context allows.
- c) Each reference to Provincial legislation in this TENDER, unless otherwise specified, is a reference to the Revised Statutes of Ontario, 1990 edition, and, in every case, includes all applicable amendments to the legislation, including successor legislation.
- d) The words "shall", "will", and "must" used in this TENDER denote imperative.
- e) The word "may" used in this TENDER denotes permissive.
- f) The word "and" is an inclusive conjunction, the use of which indicates that all items or phrases in the subsection, article, or list in which it appears are permitted or required, as the case may be. The word "or" is an alternate conjunction, the use of which indicates that alternate or optional items or phrases in the subsection, article or list in which it appears are permitted or required, as the case may be; however, notwithstanding the foregoing, where the context permits, the word "or" may also be an inclusive conjunction having the same meaning as the word "and".

## PART A - INSTRUCTIONS TO BIDDERS

### 1) CONTRACT/ INTENT

The intent of this TENDER is to secure a qualified CONTRACTOR for the installation of new watermain, and/or replace the existing watermain along the specified route up to the Picton Heights Reservoir, complete with connection to the infrastructure and service connections, and construct an illuminated sidewalk along the indicated portion of the watermain route for the Corporation of the County of Prince Edward, in accordance with the terms, conditions, terms of reference, and attachments of this TENDER. The MUNICIPALITY may or may not enter into a CONTRACT as a result of the issuance of this TENDER.

### 2) TENDER DELIVERY & OPENING

- a) The Tenderers shall carefully examine all plans so that the unit prices tendered are commensurate with the nature of the work. **The electronic copies of the Tender Package is FREE and requests can be made to Mr. Divyam Beniwal (dbeniwal@rvanderson.com). The cost to purchase hardcopies of each Tender Package during tendering is \$250.00. This is non-refundable and includes H.S.T. A certified cheque or money order should be made to R.V. Anderson Associates Limited.**
- B) **ALL BIDDERS MUST REGISTER WITH THE PURCHASING CLERK BY FAX 613-476-7622 OR E-MAIL ([PWHITE@PECOUNTY.ON.CA](mailto:PWHITE@PECOUNTY.ON.CA)) OR THEY WILL BE REJECTED.**
- c) Each Tenderer must satisfy himself, by personal examination of the local conditions to be met with during the construction and conduct of the work. The Tenderer shall make his own estimate of the facilities, physical environment and difficulties to be encountered including the nature of the subsurface materials and conditions. 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 the site conditions.
- d) TENDERS made on the forms provided must be submitted in a sealed package, clearly marked **and** must be submitted to the following address to the attention of the following individual **prior to 2:00:00 p.m., Local Time April 23, 2019** (the "deadline for submission"). TENDERS must be time-stamped at the location listed below to be considered. Late submissions will not be accepted and will be returned unopened without exception. The time stated on the time stamp located in the following office shall be the only recognized timepiece for the purpose of this submission.

Clerk's Department  
THE CORPORATION OF THE COUNTY OF PRINCE EDWARD  
332 Main Street, 2nd Floor  
Picton, ON  
K0K 2T0

- e) **BIDDERS shall submit one document marked "original" and one (1) additional copy.**
- f) Any TENDERS received after the deadline for submission will be considered as non-compliant and will be returned unopened. In the event that the TENDER is too large for

an envelope, the TENDER shall be **sealed** in a carton clearly marked with the CONTRACT number and description.

- g) The use of the mail or courier services for delivery of a TENDER will be at the risk of the BIDDER. The TENDER must come into the possession of the above-mentioned representative of the MUNICIPALITY before the deadline for submission or the TENDER will be returned to the BIDDER unopened.

In the event that the TENDER is hand delivered and is received past the deadline for submission, the TENDER envelope will be time stamped and returned unopened to the deliverer immediately.

In the event that the TENDER is received by a means other than 'in person' and is received past the submission deadline, it will be time stamped and returned unopened by courier.

- h) **Note: Since TENDERS must be submitted in a sealed envelope, submissions by facsimile or electronic delivery, secure site or otherwise, are not acceptable.**
- i) The onus unequivocally remains with the BIDDER to ensure that TENDERS are delivered to the Clerk's Department, 2<sup>nd</sup> Floor, by the deadline for submission, in accordance with the submission instructions. Misdirected TENDERS received after the deadline for submission will not be accepted and will be returned unopened. Requests for adjustments to submitted TENDERS by telephone, fax or electronically will not be considered.
- j) The MUNICIPALITY shall not be liable for any cost of preparation or presentation of TENDERS, and all TENDERS and accompanying documents submitted by the BIDDER become the property of the MUNICIPALITY and will not be returned. There will be no payment to BIDDERS for work related to and MATERIAL supplied in the preparation, presentation and evaluation of any TENDER, nor for the CONTRACT negotiations whether they are successful or unsuccessful.
- k) TENDERS will be opened at a public TENDER opening meeting 15 minutes following the deadline for submission in the Committee Room, The Corporation of the County of Prince Edward, 332 Main Street, 2<sup>nd</sup> Floor, Picton, ON, and BIDDERS are invited to attend.
- l) The MUNICIPALITY, its elected officials, employees and agents shall not be responsible for any liabilities, costs, expenses, loss or damage incurred, sustained or suffered by any BIDDER, prior or subsequent to, or by reason of the acceptance, or non-acceptance by the MUNICIPALITY of any TENDER, or by reason of any delay in the acceptance of any TENDER.

#### **4) TENDER SUBMISSION**

- a) Submission of a TENDER will constitute acceptance of all provisions contained in this TENDER on the part of all BIDDERS.
- b) When submitting a TENDER, BIDDERS must ensure that all areas of this TENDER that require information are completed and submitted in accordance with the instructions, including but not limited to a completed original Schedule of Prices. Failure to do so may result in the incomplete TENDER being rejected.

- c) If a TENDER does not conform in every detail with the Terms of Reference – Specifications/Deliverables attached to this TENDER as Part D, the BIDDER is required to explain the deviation in the TENDER.
- d) All TENDERS must be made upon the Form of TENDER/Agreement to Contract attached to this TENDER as Part C.
- e) The TENDER must bear an original signature of an authorized signing officer of the BIDDER or the TENDER may be rejected. If a joint TENDER is submitted it must be signed by signing officers of each of the joint BIDDERS.
- f) TENDERS which are incomplete, conditional, illegible, or obscure or which contain reservations, erasures, alterations, or irregularities will be declared IMPROPER and may be rejected. TENDERS must be legible, written in ink, or by typewriter. TENDERS written in pencil will not be considered. In the case of an error in extending the unit prices, the unit price shall determine the quoted price.
- g) None of the conditions contained on the BIDDER'S standard or general conditions of sale shall be of any effect unless explicitly agreed to by the MUNICIPALITY and specifically referred to on the Contract.
- h) Any erasures or corrections to a TENDER must be initialled or noted by the BIDDER or the TENDER may be deemed as IMPROPER and may not be considered.
- i) If after reading the TENDER, your organization does not wish to submit a TENDER, **do not forward the material to another organization. Discard the material and return a completed "Notice of No TENDER" and/or return all MATERIAL immediately to the MUNICIPALITY.**
- j) Failure to submit a TENDER or to return the "Notice of No Bid" on invitation will result in the removal of the BIDDER'S name from the Municipality's BIDDERS' LIST.

<b>5) INQUIRY</b>
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- a) All inquiries regarding this TENDER shall be directed, in writing, to the attention of:

Divyam Beniwal, M.ASc.  
 R.V. ANDERSON ASSOCIATES LIMITED  
 2001 Sheppard Avenue East,  
 Suite 300  
 Toronto, ON M2J 4Z8  
 Tel: 416-497-8600 Ext 11481  
 Fax: 416-497-0342  
[dbeniwal@rvanderson.com](mailto:dbeniwal@rvanderson.com)

The deadline to submit inquiries is April 5, 2019 at 4:00pm.

- b) Any inquiries will be responded to in writing. Any clarification shall not alter the TENDER. Oral arrangements or discussions cannot be relied upon.
- c) If during the period prior to submission of TENDERS, the MUNICIPALITY determines, in its sole and unfettered discretion, that part of the TENDER requires formal amendment or clarification, written addenda to this TENDER will be produced and distributed to all known



BIDDERS. In that case, the TENDERS shall identify the addenda and indicate how they respond to them.

- d) BIDDERS attempting to contact MUNICIPALITY staff or elected officials other than the contact indicated in this TENDER in subsection a) above, for whatever reason, during the TENDER or evaluation process, are advised that such action may result in their disqualification from the process and removal of their name from the BIDDER'S LIST. If consultation is deemed to be necessary by the MUNICIPALITY, a pre-TENDER meeting of all BIDDERS and MUNICIPALITY staff will be arranged at a location of the MUNICIPALITY'S choosing. The MUNICIPALITY reserves the right to change the deadline for submission, if necessary, to accommodate such a meeting.
- e) No officer, agent or employee of the MUNICIPALITY is authorized to verbally alter any portion of this TENDER. During the period prior to submission of TENDERS, any clarification will be issued in the form of written addenda. The BIDDER shall list and attach any addenda that were considered when the TENDER was prepared. Failure to execute and return any and all addenda issued by the MUNICIPALITY will result in the TENDER being deemed as IMPROPER.
- f) Although The Corporation of the County of Prince Edward will make every reasonable effort to ensure a BIDDER receives all addenda issued, it is the BIDDER'S ultimate responsibility to ensure all addenda have been received.
- g) All references to BIDDER include all staff from the proposing organization as well as all SUPPLIERS and SUB-CONTRACTORS that the proposing organization may hire to supply the EQUIPMENT, MATERIALS, SUPPLIES AND/OR SERVICES.

## **6) TENDER CONTENT**

TENDERS will be deemed complete if they include:

- a) A completed and executed Form of TENDER - Agreement to Contract and Schedule of Prices, attached to this TENDER as Part C.
- b) Reference list, attached to this TENDER as Part C. BIDDERS must provide three appropriate references of a similar size and nature, including contact names and telephone numbers.
- c) List of sub-contractors and key suppliers to be utilized;

If any of the above information is missing or deficient, the MUNICIPALITY reserves the right, in its sole and unfettered discretion, to request written clarification, or, if substantively remiss, to reject the TENDER in its entirety.

Additional information required as backup-documentation to the tender, include:

- Sufficient **Bid Deposit**;
- **Agreement to Bond/Letter of Credit**;
- Signed copies of any **Addenda** that have been issued.

- Detailed project schedule, complete with identified critical path items to achieve Substantial Performance and Completion

## **7) TENDER EVALUATION**

TENDERS will be evaluated on the basis of information provided by the BIDDER at the time of the submission as well as the previous experience of the BIDDER in this marketplace.

- a) TENDER quality: including organization, clarity, completeness, content and presentation;
- b) BIDDER experience in similar or related projects as well as their experience with government bodies. Information shall include all items outlined in Part C;
- c) The cost effectiveness of each TENDER will be based upon the information supplied in Part C of the TENDER.

## **8) ACCEPTANCE OF TERMS**

Each BIDDER, by submitting a TENDER, represents that the BIDDER has read, completely understands, and accepts the terms, conditions, and terms of reference of the TENDER in full.

## **9) REQUIREMENTS AT TIME OF EXECUTION**

Subject to an award of the TENDER by The Corporation of the County of Prince Edward, the Bidder is required to submit the following documentation in a form satisfactory to The Corporation of the County of Prince Edward for execution within ten (10) days after being notified in writing to do so by The Corporation of the County of Prince Edward:

- a) Certificate of Clearance from Workers Compensation Board;
- b) Evidence of General Liability, automobile, equipment, public liability and property damage insurance.
- c) Material and Labour Bond
- d) Performance Bond

**If any of the TENDER requirements have not been met, the TENDER will be rejected. The Corporation of the County of Prince Edward has the right to accept a TENDER and waive what it considers to be minor deviances from the mandatory requirements and acceptable format.**

## PART B – STANDARD TERMS AND CONDITIONS

### 1) INTENT

- a) The intent of this TENDER is for the supply and installation of new watermain, and/or replace the existing watermain along the specified route up to the Picton Heights Reservoir, complete with connection to the infrastructure and service connections, and construct an illuminated sidewalk along the indicated portion of the watermain route. The MUNICIPALITY reserves the right to choose more than one SUPPLIER/CONTRACTOR(s).
- b) The supply of all materials and application(s) and permits ad detailed herein, as specified in this tender.
- c) Unit prices, if any shall be inclusive of all costs to supply and apply materials and workmanship as specified in this tender in full conformity with the specifications and information to bidders attached hereto, all duty exchange, freight, transportation or other charges fully paid for the prices shown hereunder.

### 2) ACCEPTANCE

- a) As soon as practicable after opening the TENDERS, the MUNICIPALITY will endeavour to act upon them. The acceptance of a TENDER will be notice in writing signed by a duly authorized representative of the MUNICIPALITY, and no other act of the MUNICIPALITY shall constitute the acceptance of a TENDER. Acceptance of a TENDER by the MUNICIPALITY shall bind the SUPPLIER to execute the CONTRACT.
- b) The CONTRACT shall consist of and have priority in the following order:
  - i) The Purchase Order and/or Supply Contract;
  - ii) the TENDER;
  - iii) and the SUPPLIER'S TENDER.
- c) The above mentioned documents will be interpreted in precedential order as they are named above regardless of the chronological order in which they are issued or executed. This means, in effect, that if there is a discrepancy between a term in the MUNICIPALITY'S Contract for Services and a term in the chosen TENDER, the term in the Contract for Services prevail to the extent of the discrepancy.
  - 1. The MUNICIPALITY may accept a TENDER in whole or in part, whether the TOTAL ACQUISITION COST be the lowest or not, and may reject any or all TENDERS. There shall be no requirement of this TENDER, implied or otherwise, that the TENDER representing the lowest TOTAL ACQUISITION COST will be selected or preferred. The TENDER process is used as a means of evaluating a number of criteria (one of which is TOTAL ACQUISITION COST). BIDDERS must submit their TENDERS in accordance with all items identified in Part A of this TENDER.
  - 2. The MUNICIPALITY reserves the right to award by items, groups of items, parts of items or parts of groups of items, or all items of the TENDER, and to award CONTRACTS to one or more BIDDERS; to accept or reject any TENDER in whole or in part; to waive irregularities and omissions in the MUNICIPALITY'S sole and unfettered discretion, if in so doing, the best interests of the MUNICIPALITY will be served. No liability shall accrue to the MUNICIPALITY for its decision in this regard.

- d) Should the MUNICIPALITY receive only one (1) TENDER on commodities/services that have a known multiple source potential, the right is reserved to recall or cancel the competition.
3. All TENDERS shall be irrevocable for one hundred and twenty (120) days following the deadline for submission to allow sufficient time for evaluation of the TENDERS and for the investigation of the BIDDERS. **The tender award will be subject to receipt of all necessary approvals, including, but not limited to approvals from MOECC.**
- e) Upon acceptance of a TENDER, (or any part of it), by the MUNICIPALITY, the successful BIDDER shall, if requested by the MUNICIPALITY so to do, execute and enter into an additional formal contract that is satisfactory to the MUNICIPALITY, to properly secure the CONTRACT resulting from the acceptance of a TENDER (or any part of it) and to embody indemnity and related provisions that in the opinion of the MUNICIPALITY are required to protect the MUNICIPALITY. If at any time the MUNICIPALITY, in its sole and unfettered discretion, decides that satisfactory terms and conditions cannot be realized with a successful BIDDER, the MUNICIPALITY reserves the right to enter into negotiations and finalize a CONTRACT with an alternative BIDDER or revise and reissue this TENDER or cancel this TENDER. If the MUNICIPALITY exercises such right, the successful BIDDER has no legal claim or recourse against the MUNICIPALITY, its elected officials, employees and agents for any expenses, costs, loss or damages incurred or suffered.
- f) Any notice that the MUNICIPALITY may be required or desire to give to the BIDDER shall for all purposes be deemed to have been sufficiently and properly given if forwarded by registered mail or courier and addressed to the BIDDER at the address shown for the BIDDER on its TENDER. It shall be presumed to have been received by the BIDDER on the third day following the registration or the day following registration with the courier.
- g) No TENDER shall be accepted from any person or BIDDER who, has a claim or has instituted a legal proceeding against the MUNICIPALITY or against whom the MUNICIPALITY has a claim or has instituted a legal proceeding, without the prior approval of the MUNICIPAL Council. This applies whether the legal proceeding is related or unrelated to the subject matter of this TENDER.
- h) The MUNICIPALITY reserves the right to reject all TENDERS or to select a TENDER other than the TENDER having the lowest price. In making a decision as to which TENDERS to accept, the MUNICIPALITY reserves the right to consider, some or all of the following factors:
- (1) the general reputation of the SUPPLIER;
  - (2) any prior experience the County has had with the SUPPLIER;
  - (3) the financial status and strength of the SUPPLIER;
  - (4) the previous experience of the SUPPLIER in this area;
  - (5) any previous experience between the SUPPLIER and other municipalities;
  - (6) the proposed schedule of the SUPPLIER;
  - (7) the Owner's determination of the ability of the SUPPLIER to deliver the work to quality and standards required and within the time frames and in the quantities;
  - (8) any other factors that the Owner believes reasonably impact on the contract and the ability to complete the contract to the full satisfaction of the Owner.
- l) The Owner reserves the right to consider each of the factors, and to assign different weights to each of the factors based on the information received by it from each and every SUPPLIER, from its own staff, and from outside sources, as these factors may impact on the benefit the Owner receives from this contract.

### **3) PURCHASING BY-LAW**

- a) TENDERS will be called, received, evaluated, accepted, and processed in accordance with the MUNICIPALITY'S Purchasing By-law and Procedures (copy available upon request). By submitting a TENDER each BIDDER agrees to be bound by the terms and conditions of that By-law and those Procedures and any amendments to them, as fully as if it were reproduced and attached to this TENDER. A copy of The Corporation of the County of Prince Edward's Purchasing by-Law can be retrieved from the County's web-site: [www.thecounty.ca/county-government/departments/purchasing-/](http://www.thecounty.ca/county-government/departments/purchasing-/)
- b) No verbal arrangement or agreement, relating to the SERVICES specified or called for under this TENDER, will be considered binding, and every notice, advice or other communication, pertaining to it, must be in writing and signed by a duly authorized person.

### **4) BIDDER ELIGIBILITY**

- a) BIDDERS must meet the MUNICIPALITY'S requirements for experience. The MUNICIPALITY will disqualify any BIDDER who cannot provide the following, when requested by the MUNICIPALITY:
  - i. proof that they have previously held and satisfactorily completed a contract of the size and type being proposed; or
  - ii. proof of employment in the type of service being proposed and written references as to their satisfactory performance; or
  - iii. adequately demonstrate that they have the ability to provide the necessary expertise and resources to satisfactorily complete the CONTRACT;
  - iv. evidence of sufficient general liability and up-to-date clearance issued by the W.S.I.B. (Workers Safety Insurance Board).
- b) The MUNICIPALITY reserves the right to investigate and evaluate the experience, capability, registration and financial position of any BIDDER prior to an award of a CONTRACT. The MUNICIPALITY reserves the right to reject any BIDDER OR TENDER based on the information obtained.
- c) This TENDER is made by the BIDDER without any connection, knowledge, comparison of figures or arrangement with any other person or persons making a TENDER for the same SERVICES, and is in all respects fair and without collusion or fraud.

### **5) ASSIGNMENT**

- a) The SUPPLIER shall not assign the CONTRACT (or any portion of it) without the prior written consent of the MUNICIPALITY.
- b) It is understood and agreed that the BIDDER will be an independent SUPPLIER and that all services will be performed by the employees or agents of the SUPPLIER. Sub-contracting agreements made by the SUPPLIER will not release the SUPPLIER from any obligation to the MUNICIPALITY with respect to the performance of the CONTRACT. Joint or consortium TENDERS must have one prime SUPPLIER who will be responsible for overall project success, provide one point of contact and a single billing point. The MUNICIPALITY shall not be responsible for payment to the SUPPLIER'S partners, SUB-CONTRACTOR or suppliers in

the event the prime SUPPLIER defaults on its responsibilities. The prime SUPPLIER must communicate such to its partners, SUB-CONTRACTORS and suppliers. The prime SUPPLIER must also provide the MUNICIPALITY with a written statement outlining function components that the sub-SUPPLIER(s) will be offering. The MUNICIPALITY must grant prior written approval, in its sole and unfettered discretion, for any assignment and all SUB-CONTRACTORS.

#### **6) INDEMNIFICATION**

- a) The SUPPLIER agrees that it will continuously save, keep harmless and fully indemnify the MUNICIPALITY, its elected officials, employees and agents and its successors and assigns, from and against all actions, claims, and demands whatsoever which may be brought against or made upon the MUNICIPALITY and the SUPPLIER also agrees that it will continuously save, keep harmless and fully indemnify the MUNICIPALITY, its elected officials, employees and agents and its successors and assigns, against all types of losses, liabilities, claims, costs or expenses which the MUNICIPALITY may incur resulting from or arising out of the SUPPLIER'S failure to exercise reasonable care, skill or diligence in their performance or rendering of any EQUIPMENT, MATERIAL AND/OR SERVICES to be performed or rendered by the SUPPLIER, pursuant to the CONTRACT.
- b) The SUPPLIER shall indemnify the MUNICIPALITY from all claims arising out of unpaid accounts relating to the CONTRACT. The MUNICIPALITY shall have the right at any time to require satisfactory evidence that the EQUIPMENT, MATERIAL (or any part of it) in respect of which any payment has been made or is to be made by the MUNICIPALITY is free of and clear of construction or other liens, attachments, claims, and demands, charges or other encumbrances.

#### **7) CHARACTER OF WORKERS**

- a) The reference to "workers" refers to workers of the SUPPLIER and its SUB-CONTRACTORS (if any), and includes Corporate Officers.
- b) The SUPPLIER agrees to employ only orderly, competent, and skilful workers. Whenever the MUNICIPALITY informs the SUPPLIER in writing that any worker is, in its sole and unfettered opinion, incompetent, unfaithful or disorderly, the SUPPLIER will ensure that the worker in question is removed from the work and shall not be further employed on the CONTRACT without the MUNICIPALITY'S written consent.

#### **8) PROJECT SITE WORKING CONDITIONS**

It is the BIDDER'S responsibility to investigate the sites and the nature of the work and inform itself, before bidding, of all the physical and working conditions and administrative practices applicable.

#### **9) PATENTS AND COPYRIGHTS**

- a) The SUPPLIER shall, at its sole expense, defend all claims, actions or proceedings against the MUNICIPALITY based on any allegations that the EQUIPMENT, MATERIAL (or any part of it) constitutes an infringement of any patent, copyright or other proprietary right, and shall pay to the MUNICIPALITY all costs, damages, charges and expenses, including its lawyers' fees on a solicitor and his own client basis occasioned to the MUNICIPALITY in this regard.
- b) The SUPPLIER shall pay all royalties and patent license fees required for the EQUIPMENT, MATERIAL.

- c) If the EQUIPMENT, MATERIAL (or any part of it) is in any action or proceeding held to constitute an infringement of any patent, copyright or other proprietary right, the SUPPLIER shall either secure for the MUNICIPALITY the right to continue using the EQUIPMENT, MATERIAL or shall, at the SUPPLIER'S sole expense, replace the infringing EQUIPMENT, MATERIAL with non-infringing EQUIPMENT, MATERIAL or modify it so that the EQUIPMENT, MATERIAL no longer infringes.

**10) ERRORS AND OMISSIONS OF THE SUPPLIER**

Errors, mistakes, or omissions made by the SUPPLIER, its agents, employees, or workmen shall be rectified by the SUPPLIER at its sole expense.

**11) QUANTITIES**

- a) Unless otherwise specified in this TENDER, quantities shown are approximate and furnished without liability on behalf of the MUNICIPALITY. They are supplied as a basis for comparison only. There shall be no compensation nor negotiations for loss of profit or mark-ups if the quantities noted in the Form of Tender are not realized.
- b) Unless otherwise stated, payment will be by the unit complete at the TENDER price on the actual quantities deemed acceptable by the MUNICIPALITY.

**12) TERMS OF PAYMENT**

- a) Unless alternate payment terms are specified in the Terms of Reference attached to this TENDER as Part D, the MUNICIPALITY will accept billing for 100 percent of the actual value of each element of the MATERIAL provided or SERVICES performed in each month and accepted by the MUNICIPALITY. As per the Construction Act Legislation, which takes into effect October 1, 2019, invoices after this period will be paid by the MUNICIPALITY 28 days after they are received. In the case where there is a dispute on the amount owed or the quality of work performed, the MUNICIPALITY will deliver a notice of non-payment to the SUPPLIER within 14 days of receiving the invoice from the SUPPLIER. As required by the Construction Act, appropriate monies may be held back until 60 days after successful provision of the MATERIAL or completion of the SERVICES, as the case may be.
- b) Payments made by the MUNICIPALITY, including final payment, shall not relieve the SUPPLIER from its obligations or liabilities under the CONTRACT.
- c) Acceptance by the SUPPLIER of the final payment shall constitute a waiver of claims by the SUPPLIER against the MUNICIPALITY, except those previously made in writing in accordance with the CONTRACT and still unsettled.
- d) The MUNICIPALITY shall have the right to withhold from any sum otherwise payable to the SUPPLIER any amount sufficient to remedy any defect or deficiency in the MATERIAL and/or SERVICES pending correction of the deficiencies or any amount sufficient to satisfy any claim the MUNICIPALITY has against the SUPPLIER resulting from a previous CONTRACT, a legal proceeding or unpaid accounts, including property or business taxes.

**13) UNPAID ACCOUNTS**

The SUPPLIER must indemnify the MUNICIPALITY from all claims arising out of unpaid accounts relating to the MATERIAL and/or SERVICES. The MUNICIPALITY shall have the right at any time to require satisfactory evidence that the MATERIAL in respect of which any payment has been made or is to be made by the MUNICIPALITY is free of and clear of construction or other liens, attachments, claims, and demands, charges or other encumbrances.

#### **14) CHANGES IN THE EQUIPMENT, MATERIAL AND/OR SERVICES**

The MUNICIPALITY may, without invalidating the CONTRACT, direct the SUPPLIER to make changes to the EQUIPMENT, MATERIAL AND/OR SERVICES. When a change causes an increase or decrease in the EQUIPMENT, MATERIAL AND/OR SERVICES, the CONTRACT price shall be increased or decreased by the applicable unit price, or in the absence of applicable unit prices, by an amount to be agreed upon in writing between the MUNICIPALITY and SUPPLIER. All changes must be in writing.

#### **15) NON-PERFORMANCE**

- a) The MUNICIPALITY reserves the right to determine, in its sole and unfettered discretion, non-performance of the CONTRACT, including the level of quality of EQUIPMENT; MATERIALS AND SUPPLIES AND/OR SERVICES provided and further reserves the right to cancel any or all of the CONTRACT if the SUPPLIER fails to correct deficiencies upon thirty (30) days written notice. The MUNICIPALITY'S evaluation and determination in this regard shall be final and not reviewable by any court or tribunal.
- b) In the event that the SUPPLIER fails or neglects to comply with any condition set out in the CONTRACT, the CONTRACT may be unconditionally cancelled by the MUNICIPALITY without notice.
- c) The MUNICIPALITY reserves the right to remove from the BIDDERS' LIST (disqualify), for an indeterminate period (minimum two (2) years), the name of any BIDDER for breach of the terms and conditions of this TENDER or for unsatisfactory performance of the CONTRACT. This disqualification will apply to the terminated SUPPLIER as the Bidder or BIDDER on future quotations TENDERS or requests for TENDER or as a sub-trade to a Bidder or BIDDER on future competitions (quotations, PROPOSALS, or TENDERS) issued by the MUNICIPALITY. The MUNICIPALITY also reserves the right to publish the names of all disqualified SUPPLIERS in any future quotation, TENDER or requests for TENDER.

#### **16) PRICING (TERM OF AGREEMENT)**

- a) Prices proposed must include all incidental costs and the BIDDER must be satisfied as to the full requirements of the TENDER. No claims for EXTRA WORK, EXTRA EQUIPMENT, EXTRA MATERIALS or EXTRA SERVICES will be entertained and any additional EQUIPMENT, MATERIAL, SUPPLIES AND/OR SERVICES must be authorized in writing prior to commencement. Should the BIDDER require more information or clarification on any point, it must be obtained prior to the submission of the TENDER.
- b) Should any additional or any variation of any tax or duty, imposed by the Government of Canada or Province of Ontario become directly applicable to any EQUIPMENT, MATERIAL, SUPPLIES AND/OR SERVICES, prior to delivery or completion of the EQUIPMENT, MATERIAL, SUPPLIES AND/OR SERVICES, the appropriate increase or decrease in the price of the EQUIPMENT, MATERIAL, SUPPLIES AND/OR SERVICES, shall be made to compensate for the change as of the effective date.
- c) The SUPPLIER shall be responsible for the collection and remittance of all applicable taxes, and agrees to hold the MUNICIPALITY harmless in this regard.



- d) All prices bid must be in Canadian funds and shall include currently applicable customs duty, excise tax, freight, insurance and all other charges of every kind attributable to the SUPPLIES, MATERIAL or SERVICES save and except the Harmonized Sales Tax. All applicable HST is to be included in the total price and detailed where requested.
- e) The unit price prevails in cases of discrepancies between unit prices and extensions. The MUNICIPALITY will make all necessary corrections to any TENDER that is in error through addition or extension; the corrected value prevailing, and all BIDDERS shall be bound by such corrections.

#### **17) UNIT PRICES**

Bid prices shall be F.O.B. PICTON delivered, SUPPLIED AND APPLIED. Unit prices shall be firm and shall include all federal excise tax, duty, freight and shall be subject to Harmonized Sales Tax. Applicable taxes shall be shown separately in the spaces provided on the TENDER form.

#### **18) DISCLOSURE**

- a) Submissions of TENDERS as a result of this TENDER are in accordance with the *Municipal Freedom of Information and Protection of Privacy Act (MFIPPA)*.
- b) Release of information contained in the TENDER may be requested by anyone under the *MFIPPA* unless they contain either a trade secret or information that if disclosed would result in harm to the BIDDER. This would include scientific, technical, financial or labour relations information.
- c) All requests for information must be made in writing and submitted to the MUNICIPALITY'S Clerk.
- d) To prevent the release of information the BIDDER must state that the TENDER is submitted in confidence and indicate the nature of the confidential information and what harm would result from the release.

#### **19) WITHDRAWAL OR QUALIFYING OF TENDERS**

- a) If, after submission of a TENDER, a BIDDER receives an addenda issued by the MUNICIPALITY, AND the addenda content does NOT alter the original submission of that TENDER, the BIDDER shall sign the addenda and deliver it to the CLERK'S DEPARTMENT. The addenda shall be in a sealed envelope, which clearly identifies the contents of it.
- b) The envelope shall include the following information: BIDDER'S name (or company name under which the original TENDER was submitted), the appropriate competition document reference and the addenda number.
- c) If after submission of a TENDER, a BIDDER receives an addenda issued by the MUNICIPALITY, and the information contained in the addenda DOES alter the original submission of the BIDDER, the BIDDER shall 'withdraw' its previous submission in accordance with the withdrawal procedures outline below.
- d) A BIDDER who has already submitted a TENDER may submit a further TENDER at any time up to the deadline for submission. The last TENDER received shall supersede and invalidate all TENDERS previously submitted by that BIDDER for this TENDER.

- e) A BIDDER who has submitted a TENDER may request that its TENDER be withdrawn. (Adjustments or corrections to a TENDER submitted will not be allowed). The withdrawal shall be allowed if the request is made before the deadline for submission. Withdrawal requests must be directed to the MUNICIPALITY'S CLERK'S DEPARTMENT by letter, fax, email or in person. Telephone requests will not be considered. Withdrawals will be handled in accordance with the MUNICIPALITIES Purchasing By-law.

## **20) CONTRACT CANCELLATION**

- a) The MUNICIPALITY shall have the right to cancel any uncompleted or unperformed portion of the EQUIPMENT, MATERIALS AND SUPPLIES AND/OR SERVICES or part of them. In the event of such cancellation, the MUNICIPALITY and the SUPPLIER shall negotiate a settlement.
- b) The MUNICIPALITY shall not be liable to the SUPPLIER/CONTRACTOR for loss of anticipated profit on the cancelled portion or portions of the CONTRACT. In the event that the SUPPLIER fails or neglects to comply with any condition outlined in the CONTRACT, the CONTRACT may be unconditionally cancelled by the MUNICIPALITY without notice.

## **21) LAWS AND REGULATIONS**

The SUPPLIER shall comply with relevant federal, provincial and municipal statutes, regulations and by-laws pertaining to the CONTRACT and its performance. The SUPPLIER/CONTRACTOR shall be responsible for ensuring similar compliance by its suppliers and SUB-CONTRACTORS. The CONTRACT shall be governed and interpreted in accordance with the laws of the Province of Ontario.

## **22) DEFAULT BY SUPPLIER**

- a) If the SUPPLIER/CONTRACTOR: commits any act of bankruptcy; or if a receiver is appointed on account of its insolvency or in respect of any of its property; or if the SUPPLIER/CONTRACTOR makes a general assignment for the benefit of its creditors; then, in any such case, the MUNICIPALITY may, without notice, terminate the CONTRACT.
- b) If the SUPPLIER/CONTRACTOR: fails to comply with any request, instruction or order of the MUNICIPALITY; or fails to pay its account; or fails to comply with or persistently disregard statutes, regulations, by-laws or directives of relevant authorities related to the EQUIPMENT, MATERIAL AND SUPPLIES AND/OR SERVICES; or fails to prosecute the EQUIPMENT, MATERIALS AND SUPPLIES AND/OR SERVICES with skill and diligence; or purports to assign or sublet the CONTRACT or a portion of it without the MUNICIPALITY'S written consent; or refuses to correct defective EQUIPMENT, MATERIALS AND SUPPLIES AND/OR SERVICES; or is otherwise in default in carrying out its part of any of the terms, conditions and obligations of the CONTRACT; then, in any such case, the MUNICIPALITY may, upon expiration of ten days from the date of written notice to the SUPPLIER/CONTRACTOR, terminate the CONTRACT.
- c) Any termination of the CONTRACT by the MUNICIPALITY, as mentioned in b) above, shall be without prejudice to any other rights or remedies the MUNICIPALITY may have.
- d) If the MUNICIPALITY terminates the CONTRACT, it is entitled to:
  - i) withhold any further payment to the SUPPLIER/CONTRACTOR until the completion of the MATERIAL or SERVICES and the expiry of all obligations under the CONTRACT; and
  - ii) recover from the SUPPLIER/CONTRACTOR any loss, damage and expense incurred by the MUNICIPALITY by reason of the SUPPLIER/CONTRACTOR default (which may be deducted from any monies due or becoming due to the SUPPLIER/CONTRACTOR).

## **23) SAMPLES**

Samples when required must be submitted strictly in accordance with the instructions. If samples are requested after opening of TENDERS, they shall be delivered within three (3) working days following request, unless additional time is granted. Samples must be submitted free of charge and will be returned at the BIDDER'S expense, if so requested, provided they have not been destroyed by tests, or provided they are not required for comparison purposes.

The acceptance of samples by the MUNICIPALITY shall be at its sole discretion and any such acceptance shall in no way be construed to imply relief of the SUPPLIER/CONTRACTOR from its obligations under the CONTRACT.

## **24) ERRORS, OMISSIONS IN THE MUNICIPALITY DOCUMENTS**

The MUNICIPALITY shall not be held liable for any errors or omissions in any part of this TENDER. While the MUNICIPALITY has used considerable effort to ensure an accurate representation of information in this TENDER, the information contained in the TENDER is supplied solely as a guideline for BIDDERS. The information is not guaranteed or warranted to be accurate by the MUNICIPALITY, nor is it necessarily comprehensive or exhaustive.

## **25) MULTIPLE TENDERS**

For comparison purposes, each BIDDER shall submit a complete response that meets the base requirements. TENDERS that do not address the base requirements shall be rejected.

Multiple TENDERS from any one BIDDER will be acceptable provided the following conditions are met:

- each TENDER must be packaged separately.
- each TENDER shall be dealt with separately and shall be subject to the requirements of the TENDER.

## **26) INSURANCE REQUIREMENTS AT TIME OF CONTRACT EXECUTION**

### **(i) Workplace Safety & Insurance Board**

Before the execution of the Contract, and before receiving payments, the BIDDER shall submit a declaration stating that the SUPPLIER has paid all assessments or compensations payable and has otherwise complied with all the requirements of the Workplace Safety and Insurance Board. Prior to commencement of work the SUPPLIER must provide: proof of a WSIB Clearance Certificate (any default in coverage will automatically terminate the working relationship between the SUPPLIER and the County), a complete breakdown of TENDER prices for individual sub-trades and/or major portions of the work, and a schedule of work with expected completion date. Certificate must be updated every 90 days.

### **(ii) General Liability Insurance**

Prior to commencement of work the SUPPLIER must provide proof of \$5,000,000 (five million) General Commercial General Liability Insurance including coverage for public liability, property damage, all his trucks, vehicles and machines; also, any vehicles or equipment hired by him, and used in connection with this work. The Corporation of the County of Prince Edward, R.V. Anderson Associates Limited, Quinte Conservation Authority, Moon-Matz Ltd., and the County's quality assurance and material testing subconsultant (County to advise the successful general contractor of the subconsultant name) must be shown as additional insured on the policy.

**Automobile/Equipment Insurance**, the SUPPLIER/CONTRACTOR will effect at his/her own expense (including the cost of deductibles) and maintain and keep in force during the term of this agreement, automobile/equipment insurance coverage naming The Corporation of the County of Prince Edward as an insured, including a cross-liability provision in favour of The Corporation of the County of Prince Edward, against claims for personal injury, death, property damage or loss, arising from an accident or occurrence relating to this agreement, in an amount of not less than Two Million Dollars **(\$5,000,000.00)** in respect of each claim or occurrence. The insurance policy as required herein shall be in force during the terms of the contract.

**Note:** The Contractor shall forward with the executed contract documents a certified copy of the policy or certificate thereof to the Engineer for approval before the Contract is executed by the Municipality. The Certificate of Insurance shall provide for 30 days' written notice to the Municipality of any intent to cancel the Insurance Policy.

Should the Contractor fail to take out satisfactory policies and to maintain them until the final completion and taking over of the work by the MUNICIPALITY, then the MUNICIPALITY itself may take out the proper policies at the expense of the Contractor.

<b>27)</b>	<b><u>BID DEPOSIT</u></b>
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Supplier/Contractors shall submit with the Tender a Bid Deposit in the form of a Certified Cheque or Bid Bond made payable to The Corporation of the County of Prince Edward. The Corporation of the County of Prince Edward reserves the right to retain the number of Bid Deposits it deems necessary until the Contract award is made. Bid deposits of all but the two (2) lowest bids will be returned by mail.

The two lowest tenders' bid deposits will be retained by the Corporation of the County of Prince Edward until the Contract has been signed by the successful bidder and all necessary paper work has been received.

The Bid Deposit of the winning tender will be kept until delivery, satisfaction and final acceptance has been met to the approval of The Corporation of the County of Prince Edward. The proceeds of this cheque shall, upon acceptance of the Tender, will then be deposited which shall be forfeited to the Corporation of the County of Prince Edward if the Contractor fails to complete the contract with the Corporation of the County of Prince Edward.

(a) The Tender must be accompanied by a certified cheque to be used as a Bid Deposit in accordance with the following:

<u>Total Amount of Bid</u>	<u>Minimum Cheque Required</u>
\$ 50,000 or less	\$ 1,000.00
\$ 50,001 to \$ 99,999.99	\$ 5,000.00
\$ 100,000 to \$ 249,999.99	\$ 10,000.00
\$ 250,000 to \$ 499,999.99	\$ 25,000.00
\$ 500,000 to \$ 999,999.99	\$ 50,000.00
\$ 1,000,000 and over	10 % of bid to maximum of \$ 100,000.00

<b>28)</b>	<b><u>AGREEMENT TO BOND AND PERFORMANCE BONDING</u></b>
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A Performance Bond for 50% and a Material Bond for 50% of the tender issued by an approved Guaranty Surety Company, with head offices in Canada, or authorized to carry on business in Canada.

In the event that the successful bidder is unable to obtain a Performance Bond, the County will accept an irrevocable Bank Letter of Credit, drawn on a Chartered Bank in Canada, satisfactory to the County of Prince Edward, in the amount of 100% of the total contract price.

## **29) Occupational Health and Safety Act Regulations**

- a) The successful contractor(s) shall perform all work in compliance with the Occupational Health and Safety Act and Regulations. The successful contractor assumes the role of sole responsibility for providing supervision for and ensuring the safety of the successful contractor's employees.
- b) The successful Bidder agrees to assume full responsibility for the enforcement of the said Occupational Health and Safety Act to ensure compliance therewith.
- c) The successful Bidder acknowledges and agrees that any breach or breaches of the Occupational Health and Safety Act whether by the successful Bidder or any of its subcontractors may result in the immediate termination of this contract herein and the forfeiture of all sums owing to the successful Bidder by the County. The successful Bidder agrees that any damages or fines that may be assessed against the County by reason of a breach or breaches of the Occupational Health and Safety Act by the successful Bidder or any of its subcontractors will entitle the County to set-off the damages so assessed against any monies that the County may from time to time owe the successful Bidder under this contract or under any other contract whatsoever.
- d) The successful Bidder shall provide a list of all controlled hazardous materials or products containing hazardous materials, all physical agents or devices or equipment producing or emitting physical agent and any substance, compound, product or physical agent that is deemed to be or contains a designated substance in accordance with the Workplace Hazardous Materials Information Systems (WHMIS) and shall provide appropriate Material Health and Safety Data Sheets for these substances used for the performance of the required work, all prior to the performance of the work.
- e) The Contractor will be required to comply with the following Health and Safety requirements prior to the Preconstruction Meeting with the County:
  - (i) The Contractor is to provide signed copies of the following:
    1. "CONTRACTORS ACKNOWLEDGEMENT OF HEALTH AND SAFETY POLICY REQUIREMENTS", (form in the Tender documents)
    2. The Contractor's Health and Safety Policy
    3. "CONTRACTORS ACKNOWLEDGEMENT OF TRAFFIC CONTROL", (form is in the Tender documents)
    4. WSIB Clearance Certificate (no more than 60 days old)
    5. Ministry of Labour "Notice of Project"
    6. Ministry of Labour "Registration of Constructors and Employees Engaged in Construction"
    7. Up to date liability insurance certificate (Company listed as certificate holder with a minimum 5 million coverage and coinsure the Corporation of the County of Prince Edward with 30 day written cancellation notice)
    8. MSDS for any WHMIS controlled products

(ii) The Contractor is advised of the following:

1. All occupational injuries that occur on County property must be reported immediately to the County Project Coordinator.
2. Contractor to notify Emergency Services that may be affected ie. Police, Fire, Ambulance, School Board
3. It is the Contractor's responsibility to ensure that their employees possess and use all the required PPE for their work.
4. The County will forward a copy of their Equipment Lockout Policy/Procedure to the Contractor (if applicable).

<b>30) <u>ACCESSIBILITY</u></b>
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In accordance with Ontario Regulation 429/07, Accessibility Standards for Customer Service every provider of goods and services shall ensure that every person who deals with a member of the public or participates in the developing of the County's policies, practices and procedures governing the provision of goods and services to members of the public, shall be trained as follows:

Therefore the BIDDER is to confirm that all of their employees have been trained and that the company is in compliance with AODA requirements by filling out the "Contractor A.O.D.A Compliance Sign-off" form below.



**The County**  
PRINCE EDWARD COUNTY • ONTARIO

**Accessibility for Ontarians with Disabilities Act (AODA)**  
**Accessible Customer Service Training**  
**CONTRACTOR A.O.D.A COMPLIANCE SIGN-OFF**

Contracted employees, third party employees, agents, and others who deal with members of the public on behalf of the County of Prince Edward must meet the requirements of Ontario Regulation 429/07, Accessibility Standards for Customer Service, and Ontario Regulation 191/11, Integrated Accessibility Standards, with regards to training.

Training for the aforementioned regulations can be accessed online at the following website addresses:

Access Forward: Training for an Accessible Ontario  
<http://www.accessforward.ca>

The Ontario Human Rights Commission: The Ontario Human Rights Code and the Accessibility for Ontarians with Disabilities Act  
<http://www.ohrc.on.ca/en/learning/working-together-code-and-aoda>

Contracted services suppliers are to ensure that training records are maintained, including dates when training was provided, the number of personnel who received training and individual training records. The suppliers are to ensure this information is available to the County of Prince Edward at any time during the term of the contract, upon request.

I acknowledge the aforementioned accessibility regulations:

Company Name: \_\_\_\_\_

Authorized Official (print): \_\_\_\_\_

Authorized Official (signature): \_\_\_\_\_

Date: \_\_\_\_\_

(THIS FORM SHALL BE COMPLETED AND SUBMITTED WITH THE TENDER)

**PART C - FORM OF TENDER  
AGREEMENT TO CONTRACT AND SCHEDULE OF PRICES**

CONTRACT NUMBER: **TENDER-2019-EDW-02**

**PROJECT TITLE: Picton Heights Reservoir Watermain Improvements and Illuminated Sidewalk**

SUBMITTED TO: THE CORPORATION OF THE COUNTY OF PRINCE EDWARD

I/We, \_\_\_\_\_  
(Company Name)

of \_\_\_\_\_  
(Business Address)

having examined the TENDER including all instructions to BIDDERS, Standard Terms and Conditions, Insurance, Terms of Reference, Special Provisions, OPS General Conditions of Contract, and Appendices as issued by THE CORPORATION OF THE COUNTY OF PRINCE EDWARD and including **Addenda number \_\_\_ to \_\_\_** and having visited the Project Site, hereby offer and agree to enter into a Contract to supply the EQUIPMENT, MATERIAL, SUPPLIES AND SERVICES required by this TENDER at the costs detailed in the Schedule of Prices below.

The undersigned offers to complete and supply the EQUIPMENT, MATERIAL, SUPPLIES AND SERVICES in accordance with the instructions to BIDDERS, Standard Terms and Conditions, Special Provisions, Terms of Reference, OPS General Conditions of Contract, and Appendices in the **Request for Tender # 2019-EDW-02**, for PICTON HEIGHTS RESERVOIR WATERMAIN IMPROVEMENTS AND ILLUMINATED SIDEWALK as described in this TENDER for the price(s) shown on the Schedule of Prices attached to it. Furthermore, it is certified that the undersigned is/are authorized and empowered to sign and submit this TENDER.

I/We, hereby Tender and agree to supply to The Corporation of the County of Prince Edward, F.O.B. Picton, Ontario, the supply of all materials and application(s) of the Picton Heights Reservoir Watermain Improvements and Illuminated Sidewalk. The contractor is responsible for visiting the sites and viewing the proposed work in the establishment of unit prices.

The SUPPLIER/CONTRACTOR has carefully examined, understands and accepts the requirements of this TENDER, and has carefully examined the site and locations for the prices set forth herein, hereby offers to furnish all machinery, labour, tools, apparatus, and other means of construction and furnish all materials except as otherwise specified in the contract, and to complete the work in strict accordance with the TENDER requirements.

Furthermore, it is certified that the undersigned is/are authorized and empowered to sign and submit this TENDER.



**PART C – FORM OF TENDER**  
**AGREEMENT TO CONTRACT AND SCHEDULE OF PRICES – continued**

The SUPPLIER/CONTRACTOR hereby offers to complete the work specified in the TENDER for the price, which have been included in the tender document; with Harmonized Sales Tax shown separately.

This TENDER is irrevocable and is to continue open to acceptance by the MUNICIPALITY for a period of one hundred and twenty (120) calendar days after the date and time set for submission of the TENDER.

Indicate the unit price per item in the space provided. Unit prices shall be inclusive of all costs for the construction and protection, as needed, for the Picton Heights Reservoir Watermain Improvements and Illuminated Sidewalk specified in this tender in full conformity with the specifications and information to bidders attached hereto, all duty, exchange, freight, transportation or other charges fully paid for the prices shown hereunder.

**Schedule of Prices**

Having carefully examined the Bidding Documents, visited the Place of the Work, and taken into account all conditions affecting the Work, we, the undersigned, hereby offer to furnish all necessary labour, materials and equipment required to perform expeditiously, and complete in a satisfactory manner the above mentioned project in accordance with the bidding documents, for the Total Stipulated Sum of (do not include HST) \_\_\_\_\_ dollars.

Sub-Total	\$ _____
HST	\$ _____
Total	\$ _____

We confirm that the above stipulated sum is in Canadian Dollars and includes all applicable taxes, royalties, custom duties, overhead and profit, insurance premiums, permits, and all other charges at the date of this Bid, and is not subject to revisions due to changes in the cost of labour, material or other items. It is understood that work may be performed at times outside of business hours at no additional cost.

(THIS FORM SHALL BE COMPLETED AND SUBMITTED WITH THE TENDER)

**PART C - FORM OF TENDER**  
**AGREEMENT TO CONTRACT AND SCHEDULE OF PRICES - continued**

The Contractor hereby offers to complete the work specified for Contract No. 2019-EDW-02 or for 120 days following the TENDER closing date, whichever occurs first for the following unit prices.

The MUNICIPALITY reserves the right to delete any part without cost to the MUNICIPALITY when it is deemed in the best interest of the MUNICIPALITY to do so. The MUNICIPALITY reserves the right to select the lowest Total Cost after deletion of parts when the MUNICIPALITY budget does not allow completion of all work tendered. Lowest or any tender not necessarily accepted.

Unit prices, if any, shall be inclusive of all costs to supply and apply materials and workmanship as specified in this tender in full conformity with the specifications and information to bidders attached hereto, all duty exchange, freight, transportation or other charges fully paid for the prices shown hereunder.

Item	Description	Units	Est Quantity	Unit Price	Total
<b>SECTION 1 – GENERAL ITEMS</b>					
1.01	INSURANCE AND BONDING	LS	1		
1.02	MOBILIZATION AND DEMOBILIZATION	LS	1		
1.03	TRAFFIC CONTROL	LS	1		
1.04	PROJECT AND FUNDING SIGNAGE	each	2		
1.05	PROJECT MEETINGS	each	12		
1.06	PRECONSTRUCTION SURVEY	LS	1		
1.07	POST CONSTRUCTION SURVEY	LS	1		
1.08	TEMPORARY SAFETY FENCE	m	540		
1.09	FENCE REMOVAL AND REINSTATEMENT	LS	1		
1.10	GARBAGE COLLECTION	LS	1		
1.11	DEWATERING	LS	1		
<b>SECTION 1 SUBTOTAL</b>					<b>\$</b>
<b>SECTION 2 – SITE PREPARATION, GRADING AND REMOVALS</b>					
2.01	CLEARING, GRUBBING, AND TREE PROTECTION	LS	1		
2.02	ROAD EXCAVATION AND EARTH GRADING	m3	3700		
2.03	SUPPLY, PLACE AND MAINTAIN TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES	LS	1		
2.04	ROAD EXCAVATION IN ROCK	m3	120		
2.05	ROCK EXCAVATION WITHIN TRENCHES WITH GRANULAR BACKFILL	m3	860		
2.06	EXCAVATION, REMOVAL, AND DISPOSAL OF ASPHALT – FULL DEPTH	m2	3052		
2.07	ASPHALT REMOVAL – PARTIAL DEPTH (50mm)	m2	2843		

Item	Description	Units	Est Quantity	Unit Price	Total
2.08	REMOVAL OF CONCRETE SIDEWALK (INCLUDING SAWCUTTING)	m2	20		
2.09	REMOVAL OF CURB AND GUTTER (ALL TYPES) (INCLUDING SAWCUTTING)	m	45		
2.10	FIRE HYDRANT REMOVAL AND DISPOSAL	each	1		
2.11	CULVERT REMOVAL	m	25		
2.12	Maintenance Hole and New Catchbasins and Catchbasin Leads (300mm PVC leads)	each	4		
2.13	SUPPLY AND INSTALL STORM SEWERS	m	10		
<b>SECTION 2 SUBTOTAL</b>					<b>\$</b>
<b>SECTION 3 – ROADWORKS</b>					
3.01	GRANULAR A FOR ROAD RECONSTRUCTION	tonne	2677		
3.02	GRANULAR B TYPE II FOR ROAD RECONSTRUCTION	tonne	4818		
3.03	GRANULAR A SHOULDER MATERIAL	tonne	310		
3.04	TACK COAT RS1	m2	7756		
3.05	HMA – TOP COAT HL3 (50mm)	tonne	935		
3.06	BASE COAT HL8 (80mm)	tonne	857		
3.07	ASPHALT SAW CUTTING (FULL DEPTH)	m	725		
3.08	CONCRETE SIDEWALK (MACHINE AND HANDWORK)	m2	1800		
3.09	CONCRETE CURB AND GUTTER (MACHINE AND HANDWORK)	m	966		
3.10	150MM PERFORATED SUBDRAIN	m	1242		
3.11	DRIVEWAY RESTORATION ASPHALT HL3 (50mm HL3, 150mm Granular)	m2	20		
3.12	DRIVEWAY RESTORATION GRANULAR A (300mm)	m2	30		
3.13	SINGLE RAIL STEEL BEAM GUIDE RAIL, TYPE M30	m	110		
3.14	STEEL BEAM GUIDERAIL END TREATMENT (OPSD 922.183)	each	4		
3.15	PAVEMENT MARKING, TRAFFIC PAINT, YELLOW LINE (100mm)	m	1040		
3.16	PAVEMENT MARKING, TRAFFIC PAINT, WHITE LINE FOR CROSSWALK (200mm)	m	12		
3.17	PAVEMENT MARKING, TRAFFIC PAINT, STOP BARS (600mm)	each	6		
3.18	TACTILE WARNING SURFACE INDICATORS	m2	6		
3.19	DURABLE PAVEMENT MARKING, CROSSWALK (600mm)	m	33		
3.20	RA-4 CROSSWALK SIGN	each	6		

Item	Description	Units	Est Quantity	Unit Price	Total
<b>SECTION 3 SUBTOTAL</b>					<b>\$</b>
<b>SECTION 4 – WATERMAIN</b>					
4.01	WATERMAIN IN OPEN CUT - 150 dia PVC class 300 WM including fittings, bedding	m	12		
4.02	WATERMAIN IN OPEN CUT - 200 dia PVC class 300 WM including fittings, bedding	m	12		
4.03	WATERMAIN IN OPEN CUT - 250 dia PVC class 300 WM including fittings, bedding	m	12		
4.04	WATERMAIN IN OPEN CUT - 300 dia PVC class 300 WM including fittings, bedding	m	6		
4.05	WATERMAIN IN OPEN CUT - 350 dia PVC class 300 WM including fittings, bedding	m	1020		
4.06	350 DIA HDPE CLASS 300 WM INSTALLED BY HDD INCLUDING FITTINGS STA 0+060 TO 0+390	m	340		
4.07	19 MM TYPE 'K' COPPER SERVICE INCLUDING EXCAVATION, BEDDINGS, APPURTENANCES	m	187		
4.08	50 MM TYPE 'K' COPPER SERVICE INCLUDING EXCAVATION, BEDDINGS, APPURTENANCES	m	11		
4.09	UNSHRINKABLE FILL FOR BACKFILL UNDER CULVERT	m3	10		
4.10	UNSHRINKABLE FILL FOR BACKFILL UNDER OTHER AREAS - CONTINGENCY ITEM	m3	50		
4.11	INSULATION FOR WATER MAIN	m	50		
4.12	TRENCH RESTORATION FOR WM (IN ROAD RESURFACING AREA)	m	268		
4.13	TRENCH RESTORATION FOR WM (IN ROAD RECONSTRUCTION AREA)	m	838		
4.14	350 DIA 11.25° BEND	each	4		
4.15	350 DIA 22.5° BEND	each	1		
4.16	350 DIA. 45° BEND	each	8		
4.17	GATE VALVE AND GATE BOXES - 150 MM	each	3		
4.18	GATE VALVE AND GATE BOXES - 200 MM	each	2		
4.19	GATE VALVE AND GATE BOXES - 250 MM	each	1		
4.20	GATE VALVE AND GATE BOXES - 300 MM	each	1		

Item	Description	Units	Est Quantity	Unit Price	Total
4.21	GATE VALVE AND GATE BOXES - 350 MM	each	6		
4.22	VALVE BOX REMOVAL	each	19		
4.23	TEST DIG	each	3		
4.24	CAMERA INSPECTION	m	357		
4.25	ABANDONMENT OF WATERMAIN (CAPPING AND GROUTING)	m3	20		
4.26	UTILITY ADJUSTMENTS	each	30		
4.27	COMBINATION AIR VALVE WITH CHAMBER AND DRAIN	each	1		
4.28	HYDRANT SETS INCLUDING BENDS, CATHODIC PROTECTION, TEES, LEAD, VALVE AND VALVE BOXES	each	3		
4.29	HYDRANT EXTENSIONS (IN 150MM LENGTHS) - CONTINGENCY ITEM	each	3		
4.30	SELF DRAINING SAMPLE HYDRANT	each	2		
4.31	CLAY SEALS	each	4		
4.32	PIPE CASING INSTALLED BY JACKING AND BORING	LS	1		
4.33	JACKING BORING ENTRANCE SHAFT	LS	1		
4.34	JACKING BORING EXIT SHAFT	LS	1		
4.35	DRAIN VALVE CHAMBER	LS	1		
4.36	ABOVE GROUND AIR BLOW OFF WITH ISOLATION VALVE	each	2		
4.37	CONNECTION TO EXISTING WATERMANS (ALL SIZES)	each	4		
<b>SECTION 4 SUBTOTAL</b>					<b>\$</b>
<b>SECTION 5 – LANDSCAPING AND SOIL MANAGEMENT</b>					
5.01	SUPPLY AND GRADE TOPSOIL (150mm DEPTH)	m2	6700		
5.02	SOD	m2	700		
5.03	HYDROSEED	m2	6000		
5.04	SOIL MANAGEMENT	LS	1		
5.05	DISPOSAL OF EXCESS SOIL TO A LICENSED LANDFILL (CONTINGENCY ITEM)	tonne	500		
5.06	RIP RAP R25	m2	150		
<b>SECTION 5 SUBTOTAL</b>					<b>\$</b>
<b>SECTION E – STREET LIGHTING ELECTRICAL</b>					
E1	Permits and Hydro Connections (allowance for connection and inspection of EHP21 to new hydro poles)	LS	1	\$7,000	\$7,000
E2	Supply and Install Duct, by Open Cut, Direct Bore				

Item	Description	Units	Est Quantity	Unit Price	Total
	a) Rigid PVC, 1-50mm DIA.	m	900		
	b) HDPE, 1-100mm DIA.	m	12		
E3	Supply and install 460mm handwells OPSS 604	each	2		
E4	Supply and Install Street Lighting Cable, In Duct RWU90, 3-1/C, #6 AWG	m	900		
E5	Supply and Install Street Lighting Cable, Riser In Poles RW90, 1-1/C, #12 AWG Poles	m	340		
E6	Low voltage cable in Duct: #2AWG, RWU90, 3-1/C,#2 AWG	m	90		
E7	Supply and Install Ground Cable, In Duct, RWU90, 1-1/C #6 AWG	m	900		
E8	Supply and Install Ground Cable, Riser In Poles, RW90, 1-1/C, #12 AWG	m	170		
E9	Supply and Install Ground Electrodes Rod, 3/4" (19mm) DIA. X 10' (3000mm)	each	8		
E10	Supply and Install Pole Breaker - 50A, 120V, 1 Phase, 3 Wire	each	2		
E11	Supply and Install Concrete Poles, Direct Buried Round Concrete, 9.9m buried	each	18		
E12	Supply and Install Luminaire Arm Brackets, On Poles, Tapered Aluminum, 1.8m	each	18		
E13	Supply and Install Luminaires				
	a) P1	each	8		
	b) P2	each	2		
	c) P3	each	8		
E14	Supply and Install Pedestrian actuated warning system for uncontrolled marked crosswalks - 17" cross walk	each	3		
<b>SECTION E SUBTOTAL</b>					<b>\$</b>
<b>SECTION P - PROVISIONAL ITEMS</b>					
P-01A	Connection to Existing Maintenance Hole (PROVISIONAL ITEM)	each	1		
P-01B	200 mm dia PVC Sanitary sewer, SDR 35 (PROVISIONAL ITEM)	m	92		
P-01C	Sanitary Manhole 1200 mm dia with benching (PROVISIONAL ITEM)	each	1		
P-01D	100mm PVC DR35 sanitary service, SDR 28 (PROVISIONAL ITEM)	m	50		
P-02	25 mm dia corporation stop and 3 m of tubing and core of chamber wall (PROVISIONAL ITEM)	LS	1		

<b>Item</b>	<b>Description</b>	<b>Units</b>	<b>Est Quantity</b>	<b>Unit Price</b>	<b>Total</b>
P-03	Actuators for 2 - 450mm Gate valves with Electrical Wiring (PROVISIONAL ITEM)	each	2		
P-04	combination air valve chamber and drain (shown on G105 - south of the jack and bore section, and G107) (PROVISIONAL ITEM)	each	1		
<b>SECTION P SUBTOTAL</b>					<b>\$</b>
<b>TOTAL (SECTIONS 1, 2, 3, 4, 5, E, P)</b>					<b>\$</b>

All prices as tendered shall include all costs such as, but not limited to, labour, travel time, set up time, truck charges, materials, overheads, warranty and profits, and other related charges in the performance of the work. No further changes will be permitted by the Municipality beyond the prices provided in the Tender.

Price must be F.O.B. destination, including all duties, freight and delivery charges, to the location specified. Where approximate or estimated quantities are indicated in the Form of Tender, it is for the sole purpose of comparing Tenders only.

The Municipality reserves the right to increase or reduce the quantities required or to suspend or omit any item or portion of the work any time as the Municipality may deem advisable. The Contractor shall not be entitled to any compensation for loss of anticipated profit, allocated overhead and other costs as a result of the deletion of any item or part of an item from the Form of Tender.

(THIS FORM SHALL BE COMPLETED AND SUBMITTED WITH THE TENDER)

**PART C - FORM OF TENDER  
AGREEMENT TO CONTRACT AND SCHEDULE OF PRICES - continued**

**SUB-CONTRACTS**

We list hereunder the names of the Sub-Contractors/suppliers whose bids we have used in our Bid and with whom we intend to award Subcontracts, if awarded the contract. We acknowledge that no changes to the list will be made without the Owner's approval.

<b>TRADE</b>	<b>NAME</b>	<b>Price without HST</b>
Demolition (including removals)		
Earthworks (including excavation, backfill etc.)		
Piping		
Horizontal Directional Drilling		
Jack & Bore		
Concrete (sidewalk, curbs etc.)		
Landscaping		
Paving		
Electrical		

**EQUIPMENT SUPPLIERS**

<b>EQUIPMENT</b>	<b>PROPOSED SUPPLIER</b>	<b>Price without HST</b>
Watermain		
Sanitary Sewer		
MH and chambers		
Gate Valves		
Hydrant		
Light Fixtures		
Concrete		
Actuators (provisional item)		

1. VALIDITY OF THE BID  
Our Bid will remain in good standing for a period of 120 days after the closing date of General Contract Bids.
2. COMPLETION OF THE WORK  
We undertake to complete the work within \_\_\_\_\_ weeks of commencing and are prepared to begin work on \_\_\_\_\_.
3. ACCEPTANCE OF THE BID  
We recognize the right of the Owner not to accept the lowest or any other bid received.
4. ENCLOSURES  
We enclose herewith the following:
  - a. Agreement to Bond letter.
  - b. Sufficient Bid Deposit
  - c. Agreement to Contract and Schedule of Prices, Part C of this tender.



**PART C - FORM OF TENDER**  
**AGREEMENT TO CONTRACT AND SCHEDULE OF PRICES - continued**

I/We declare that no person, firm or corporation other than the one whose signature or the signature of whose proper officers is or are attached to this TENDER, has any interest in this TENDER or in the CONTRACT.

I/We further declare that this TENDER is made without any connection, knowledge, comparison of figures or arrangement with any other SUPPLIER, firm or person making a similar TENDER and is in all respects fair and without collusion or fraud.

I/We further declare that no MUNICIPALITY employee, or member of Council (or their families) , is or will become interested directly or indirectly as a contracting party or otherwise in or in the performance of the CONTRACT or in the supplies, work or business to which it relates or in any portion of the profits of it, or of any such supplies to be used therein or any of the monies to be derived from it.

I/We further declare that the statements contained in the TENDER are in all respects true.

I/We further declare that I/We have examined the locality, specifications and site(s) of the proposed Tender Requirements relating to them, prepared, submitted and rendered available on behalf of the MUNICIPALITY and are hereby acknowledged to be an integral part of the CONTRACT. I/We hereby propose and offer to enter into the CONTRACT on the terms and conditions and under the provisions set forth in the TENDER, and to accept in full payment for it the sums calculated in accordance with the actual measured quantities and unit prices attached to this TENDER.

I/We agree that this TENDER is an offer which is to continue open for acceptance until the placing in the mail or delivery to the address given in this TENDER of a notice of award, which shall constitute formation of the CONTRACT, or for 120 days following the TENDER closing date, whichever occurs first, and that the MUNICIPALITY may at any time within that period, and without notice, accept this TENDER whether any other TENDER had been previously accepted or not.

Furthermore, it is certified that the undersigned is/are authorized and empowered to sign and submit this TENDER.

Company: \_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Street Address or Postal Box Number)

\_\_\_\_\_  
(MUNICIPALITY, Province, and Postal Code)

Signature: \_\_\_\_\_  
(I have the authority to bind the corporation)

Print Name and Title: \_\_\_\_\_

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 2019

(Company Seal)

**The Corporation of the County of Prince Edward  
332 Main Street, K0K 2T0**

Signature: \_\_\_\_\_  
(I have the authority to bind the corporation)

Robert L. Quaiff, Mayor: \_\_\_\_\_

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 2019

Kim White, Clerk: \_\_\_\_\_

Dated at \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_, 2019

(Company seal)

**THIS DOCUMENT MUST BE SIGNED AND SEALED BY THE BIDDER AND SUBMITTED TO BE A VALID OFFER OR THE TENDER WILL BE REJECTED. THE COUNTY WILL SIGN AND SEAL ONLY THE SUCCESSFUL AND SELECTED TENDER.**

**PART C - REFERENCE INFORMATION**

BIDDERS are required to provide three (3) references listing contracts similar to the project described in this TENDER and undertaken within the past three (3) years.

1) NAME (Company/Government Agency) \_\_\_\_\_  
Contract Description \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Phone Number ( ) \_\_\_\_\_ Fax Number: \_\_\_\_\_  
Email Address (if available): \_\_\_\_\_  
Start and Complete Year: \_\_\_\_\_ Value of Contract: \$ \_\_\_\_\_

2) NAME (Company/Government Agency) \_\_\_\_\_  
Contract Description \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Phone Number ( ) \_\_\_\_\_ Fax Number: \_\_\_\_\_  
Email Address (if available): \_\_\_\_\_  
Start and Complete Year: \_\_\_\_\_ Value of Contract: \$ \_\_\_\_\_

3) NAME (Company/Government Agency) \_\_\_\_\_  
Contract Description \_\_\_\_\_  
Contact Person \_\_\_\_\_  
Phone Number ( ) \_\_\_\_\_ Fax Number: \_\_\_\_\_  
Email Address (if available): \_\_\_\_\_  
Start and Complete Year: \_\_\_\_\_ Value of Contract: \$ \_\_\_\_\_

BIDDERS are invited to submit additional references or other documents that they feel may aid the MUNICIPALITY in assessing their ability to complete the work.

The MUNICIPALITY reserves the right to check additional references and sources to those supplied by the BIDDER.

\_\_\_\_\_  
Company/BIDDER

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date

**Part C- AGREEMENT TO BOND**

**OBLIGEE: THE CORPORATION OF THE COUNTY OF PRINCE EDWARD**

**We, the undersigned, hereby agree to become bound as Surety for a bonding totalling Fifty (50% Performance & 50% Material and Labour) of the Contract amount and conforming to the Tender Document for the full and due performance and material of the works shown as described herein in the Tender for **Contract Number # 2019-EDW-02, for PICTON HEIGHTS RESERVOIR WATERMAIN IMPROVEMENTS AND ILLUMINATED SIDEWALK** for The Corporation of the County of Prince Edward accepts the above-named obligee.**

It is a condition of this Agreement that if the above-mentioned Tender is accepted, application for a Performance Bond must be completed with the undersigned within ten (10) days of acceptance of the tender related thereto, otherwise this Agreement shall be null and void.

**Dated at: \_\_\_\_\_ this \_\_\_\_\_ day of \_\_\_\_\_ 2019**

\_\_\_\_\_  
**Name of Bonding Company**

\_\_\_\_\_  
**Signature of Authorized Person  
Signing for Bonding Agency**

\_\_\_\_\_  
**Position**

(Company Seal)



**NOTICE OF NO BID**

<b>Purchasing Department, 280 Picton Main Street Picton, ON K0K 2T0</b>	<b>Tel: (613) 476-2148 Fax: (613)476-7622</b>
<b>REFERENCE NO. # TENDER-2019-EDW-02</b>	<b>CLOSING DATE: April 23, 2019</b>
<b>DESCRIPTION: PICTON HEIGHTS RESERVOIR WATERMAIN IMPROVEMENTS AND ILLUMINATED SIDEWALK</b>	

It is important to the MUNICIPALITY to receive a reply from all invited BIDDERS. There is no obligation to submit a TENDER; however, should you choose not to submit a TENDER, completion of this form will assist the MUNICIPALITY in determining the type of goods or service you are interested in proposing/bidding on in the future. Failure to return the TENDER/TENDER Form or Notice of No TENDER will result in the removal of the BIDDER from the MUNICIPALITIES BIDDERS' LIST.

**INSTRUCTIONS**

If you are unable, or do not wish to submit a TENDER on this TENDER, please complete the following portions of this form. State your reason for not proposing by checking the applicable space(s) or by explaining briefly in the space provided. It is not necessary to return any other TENDER documents. Just return the completed form in the enclosed return envelope or by fax prior to the official closing date.

- 1. We do not manufacture/supply this commodity. \_\_\_\_\_
- 2. We do not manufacture/supply to this specification. \_\_\_\_\_
- 3. Unable to quote competitively. \_\_\_\_\_
- 4. Cannot handle due to present plant loading. \_\_\_\_\_
- 5. Quantity/job too large. \_\_\_\_\_
- 6. Quantity/job too small. \_\_\_\_\_
- 7. Cannot meet delivery/completion requirements. \_\_\_\_\_
- 8. Licensing restrictions. \_\_\_\_\_
- 9. Agreements with distributors/dealers do not permit \_\_\_\_\_

Other reasons/additional comments:  
\_\_\_\_\_  
\_\_\_\_\_

Do you wish to propose/bid on these goods/services in the future **YES**  **NO**

Firm Name:	
Signature of Signing Officer:	
Print Name:	
Title:	
Address:	
Telephone:	Fax:
Date:	



(Glue or Tape to outside of Submission Envelope)

**TO:**  
**Clerk's Office**  
**The Corporation of the County of Prince Edward**  
**332 Picton Main Street**  
**Picton, ON K0K 2T0**

<p><b><u>Submitted By</u></b>  <b>(Insert company Name)</b></p>	<p><b><u>RFT 2019-EDW-02 Picton Heights Reservoir Watermain Improvements and Illuminated Sidewalk</u></b></p>	
<p><b><i>OFFICE USE ONLY</i></b></p>		
<p><b>Received By:</b>  <b>(Name of Staff)</b></p>		
<p><b>Date/Time:</b></p>		
<p><b><u>Date &amp; Time 2<sup>nd</sup> floor Clerk's Office:</u></b></p>		
<p><b><u>IF LATE – NAME AND SIGNATURE OF PERSON DELIVERING</u></b></p>	<p>(Print Name)</p>	<p>(Signature)</p>

**PART D - TERMS OF REFERENCE**

Special Provisions – General

Special Provisions – Items

OPS General Conditions of Contract

Appendices



## **SPECIAL PROVISIONS - GENERAL**

### **1. SCOPE OF WORK**

*The work includes the replacement and/or installation of approximately 1,350m of watermain on Church Street, Old Church Street and County Road 22, to connect to the Picton Heights Reservoir, in the Town of Picton, Ontario. Work includes the water service connection from new watermain to property lines and approximately 92m of sanitary sewer, complete with MH, miscellaneous stormsewer upgrades and road resurfacing. A new illuminated sidewalk will be constructed along an approximate 1,000m portion of the watermain routing. Disturbed areas will be restored to match existing conditions or better.*

The Engineer shall have the right, at any time before or during the prosecution of work, or before or after the execution of the Contract, to make, or order in writing, any alterations or changes deleting, extending, increasing, decreasing, varying or otherwise altering any lines, grades, forms, dimensions, methods, plans or materials, omissions of any portion or portions of the work, variations in any other way the works contracted for, or to order any additional or extra work to be done or extra material to be furnished. The Contractor shall proceed with and carry out the work as directed and/or supply such materials as directed, and shall do so without being entitled to any additional payment on account of any changes in work or materials except as otherwise provided. The Contractor shall proceed with work without delay and, if he is of the opinion he is entitled to additional compensation, shall make a written claim for additional compensation. If, in the opinion of the Engineer, such order or change materially increases or decreases the cost of the work or material from that on which the Contractor based his bid, other than estimated quantities, the Engineer, in his sole discretion, may increase or decrease the Contract price by an amount or amounts he, in his sole discretion, considers appropriate. The Engineer's decision shall be final.

The construction of the works and all connected operations are subject to the approval, inspection, by-laws and regulations of all municipal, Provincial, Federal and other authorities having jurisdiction in respect to any matter embraced in this contract.

The Contract Award will be issued within the validity period of the Tender. A pre-construction meeting will be scheduled within 7 calendar days of the date of the Letter of Award.

The Contractor will be required to commence work not later than seven (7) calendar days after the pre-construction meeting.

It is being acknowledged that different contractors may require different times; the Contractor shall set his own working schedule and time limits. However, the completion dates have been set as follows:

- a) Substantial Performance – December 01, 2019
- b) Completion Certificate – February 29, 2020

Where:

- scope includes:
  - New watermain and appurtenances installation from Picton Heights Reservoir to the intersection of Church St and Union St, complete with pressure testing, disinfection, bacteriological samples, securing ends for future connection,

installation of hydrants, connection to existing water services to the property line, and connections to existing water distribution system.

- Purchase of piping and equipment.
- Construction of illuminated sidewalk
- Road reconstruction
- 92m Sanitary sewer installation
- Asphalt restoration and resurfacing
- Landscaping and restoration of disturbed areas
- Abandon existing watermains as indicated on the drawing, including filling watermain with grout.

This Contract accepts the definition of Substantial Performance and Completion as defined in the Construction Act (OPS Section GC1.05). This Contract clarifies that the substantial performance definition of “ready for use or is being used for the purposes intended” is to include all work pertaining to the storm sewer and sanitary sewer on Old Church St between intersection of Old Church and Pitt St. and Old Church St and Richmond St., including the erosion protection at the storm sewer outfall, and the road reconstruction.

#### **DEFINITION OF OWNER AND ENGINEER**

Wherever the word "Owner", "Corporation", "Municipality", or "Township" appears in this Contract, it shall be interpreted as meaning the Corporation of the County of Prince Edward.

Wherever the word "Engineer" or "Contract Administrator" appears it shall be deemed to mean R.V. Anderson Associates Limited as their interests may apply.

#### **DEFINITION OF WORDS CONTINGENCY AND PROVISIONAL**

The definition of the words "Contingency" and "Provisional" items are to be as follow:

- Contingency: Where the item specified is to be priced according to the unit measure shown in the Form of Tender and as detailed under the section "Special Provisions – Items". This is intended for unforeseen circumstances that are encountered and extra work is required and is to be used only when authorized by the Engineer. General Contractor shall not be entitled to any compensation for loss of anticipated profit, allocated overhead and other costs as a result of deletion or non-use of any of the contingency items.
- Provisional: Where the item specified is to be priced according to the unit measure shown in the Form of Tender and as detailed under the section "Special Provisions-Items". This is intended to be undertaken if the Municipality reviews the quoted price and has sufficient budget and wishes to undertake the work. This item is only to be executed upon request by the Municipality. General Contractor shall not be entitled to any compensation for loss of anticipated profit, allocated overhead and other costs as a result of deletion or non-use of any of the provisional items.

## **2. GOVERNMENTAL REQUIREMENTS**

The Contractor shall obey all Federal, Provincial and Municipal Laws, Acts, Ordinances, Regulations, Orders-in-Council and By-laws, which could in any way pertain to the work outlined in the Contract or to the Employees of the Contractor.

### **3. NOTICE TO CONTRACTORS - EMPLOYMENT**

The Contractor and any Sub-Contractor of the Contractor will, respective of the construction to be carried out under this contract,

1. Employ residents of Canada only, and
2. In employing persons, refrain from discriminating against any person by reason of his/her race, religious views or political affiliations.

### **4. PAYMENT OF WORKERS**

The Contractor shall pay all non-skilled workers employed by him/her at the site of the work a wage that shall be the Ministry of Labor's current Fair Wage Scale for Roads and Structures.

In the event the Contractor assigns the performance of any of his/her obligations at the site of the work to a sub-contractor, then any such assignment of work to a sub-contractor shall contain a provision obligating the sub-contractor to abide by the provisions of the preceding paragraph with respect to non-skilled workers employed by him/her at the site of the work.

### **5. GUARANTEED MAINTENANCE**

Section GC7.15.02 of the General Conditions is amended as follows:

The Contractor shall maintain the works and every part thereof in such condition as will meet the approval of the Engineer for a period of **twenty-four months** from the date of substantial completion for each stage thereof, ordinary wear and tear excepted.

The Contractor shall make good, at his own expense in a permanent manner, satisfactory to the Engineer, any imperfections that may appear or defects that may be discovered in the works due to materials and/or workmanship during the said period as determined by the Engineer. The Contractor shall commence repairs on any work identified as defective under this clause within 48 hours of receipt of notice from the Owner.

### **6. ENVIRONMENTAL CONSIDERATIONS**

It is intended that the works proposed be executed in a manner, which to the fullest possible extent minimizes any adverse effects on the cultural and natural environment of the project area. The environmental conditions of the contract stated herein must be complied with in all respects. It is the responsibility of the Contractor to ensure that all of his personnel be sufficiently instructed so that the work is carried out in a manner consistent with minimizing environmental impact.

The Contractor shall confine his operations within the limits of the project. All activities shall be confined to the areas requiring actual construction as per the project plans. If additional areas are required by the Contractor for storage, or for other construction purposes, the Contractor

may obtain such additional area by agreement with the proprietor of the property, without additional cost to the Owner. The Contractor shall provide, to the Engineer, a certified copy of all agreements for the use of private property. The contractor shall pay for all rentals and costs of repairs, where necessary, in connection with the use of private property.

The entire site shall be restored to a state equal to or better than original conditions.

## **7. RESTORATION OF WORK AREAS**

Unless construction or restoration of all work areas are included in the contract under specific tender items, the Contractor shall restore all work areas to their previous condition to the satisfaction of the Engineer (i.e. Grass areas will be sodded unless otherwise noted on the drawing, paved areas will be asphalted, etc.). No additional compensation will be allowed for this restoration.

## **8. PROPERTY BARS**

The Contractor shall protect all property bars during construction. Prior to the acceptance of the work by the Owner, the Contractor, at his/her own expense, shall have an Ontario Land Surveyor replace any bars that were destroyed or disturbed during construction. No additional compensation will be allowed.

## **9. CO-ORDINATION OF MEETINGS**

The Contractor shall attend such meetings with Municipal and Utility Company Authorities as may be required by the Engineer to co-ordinate services affected by the Contract.

### **Pre-construction Meeting:**

Attend a pre-construction meeting which will be arranged by the Engineer immediately upon award of the Contract. The purpose of this meeting will be to initiate the work under this Contract, to acquaint the Contractor's and the Engineer's designated personnel with each other, and to discuss and determine communication chain-of-command between various parties and contact procedures, to discuss the work procedures and preliminary scheduling, and other matters as required by the Engineer.

Ensure that a senior Contractor's representative and the designated site superintendent, as well as senior representatives from the Horizontal Directional Drilling team / open excavation team and Electrical subcontractors, are in attendance, as required.

The Engineer may request that representatives of other sub-contractors or suppliers be in attendance also. Comply with the Engineer's request.

Provide emergency contacts and phone numbers for senior Contractor's representatives and designated site superintendent.

Provide schedule of construction, status of bonds and insurance, sequencing of work, major equipment delivery schedule, progress payment procedures, Contractor's health and safety plan, environmental management plan, spill containment procedures and response plan.

**Progress Meetings:**

Attend progress meetings as required by the Engineer. Such meetings to be held on a biweekly basis from, and on a monthly basis or more frequently should the Engineer deem it necessary. Ensure the attendance of responsible persons, including the site superintendent, who have the required authority to commit the Contractor in carrying out decisions reached at the meeting. Subcontractors, equipment suppliers and others must attend when requested by the Engineer.

Provide an updated schedule of work indicating progress, use of site, temporary facilities, and schedule of shutdowns at each progress meeting.

Meeting notes will be prepared and distributed by the Engineer.

**10. ENVIRONMENTAL MANAGEMENT PLAN**

An Environmental Management Plan (EMP) to be prepared by the Contractor and provided to the Engineer for review prior to the commencement of work.

EMP to include procedures to mitigate environmental impacts due to construction that includes the following components as a minimum in addition to items identified elsewhere in the Contract Documents:

1. All machinery and equipment operated by the Contractor and related hauling trucks shall have muffling systems that are up-to-date and fully operable. Trucks shall shut off engines while loading and unloading.
2. Allow for and co-ordinate with the Owner, at project commencement, instruction (by Owner's designated personnel) for the Contractor's workers on the identification of species of relevance to this project.
3. Contractor shall comply with Section 32(1) of the Federal Species at Risk Act, which states "No person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an endangered species or a threatened species", as well as compliance with the relevant sections of the Ontario Endangered Species Act.
4. On encountering any species at risk, contact the Engineer, Owner and the Ministry of Natural Resources to discuss management options to minimize, reduce or control adverse effects and design compensatory mitigation and environmental effects monitoring if required to avoid destruction, injury or interference with the species, its residence and/or its habitat at any time during the project.
5. All mitigation measures outlined in the Contract Documents to be included in the EMP

The Environmental Management Plan may be required to be submitted to the Conservation Authority and/or the Ministry of National Resources, prior to the commencement of the work. Coordinate with the review agencies such that the schedule of the work is not delayed.

No additional payment will be authorized for issues arising from the review of the Environmental Management Plan.

## **11. INSURANCE, PROTECTION AND DAMAGE**

Paragraph .01 of Subsection GC 6.03.02 - General Liability Insurance is deleted and replaced by the following;

.01 The Contractor shall take out and keep in force, until the date of acceptance of the entire work by the Owner, a comprehensive policy of public liability and property damage insurance, acceptable to the Owner, providing insurance coverage, in respect of any one accident to the limit of at least \$5,000,000.00 exclusive of interest and cost, against loss or damage resulting from bodily injury to, or death of, one or more persons and loss of or damage to property. The policy shall name the Corporation of the County of Prince Edward, R.V. Anderson Associates Limited, Moon-Matz Limited, Quinte Conservation Authority and the County's quality assurance and material testing subconsultant as additional insured there under and shall indemnify them and their representatives from and against all claims, demands, loss, costs, damage or injury including death to any person or persons and for damage to any property of the Municipality or any other public or private property resulting from or arising out of any act or omission on the part of the Contractor or any of his servants or agents during the execution of the contract. The Contractor shall forward with the executed contract documents a certified copy of the policy or certificate thereof to the Owner before the work is started.

## **12. PROPERTY OWNERS RELEASE OF PIT AND WASTE DISPOSAL AREAS ON PRIVATELY OWNED OR MUNICIPALLY OWNED LAND USED BY THE CONTRACTOR**

Where the Contractor uses privately owned or municipally owned lands for pits or waste disposal areas, the Contractor shall provide the Engineer with one copy of a release signed by or on behalf of the owner of each pit or waste disposal area used by the Contractor.

The Contractor is responsible for ensuring that the disposal of surplus material is carried out in an environmentally acceptable manner and to the satisfaction of the owner of the land upon which the material is disposed.

## **13. PREVENTION OF DAMAGE**

The failure of the Engineer to order necessary precautionary measures, protective work or any other requirements shall not relieve the Contractor of the responsibility for the prevention of damage to the project, buildings, or other surface or sub-surface structures, or for accidents to persons, whether employed on the project or not, which might result from such failure to install, place or use such precautionary measures, protective work or other requirements. Furthermore, the fact that the Engineer does or does not order precautionary measures, protective work or other requirements shall not relieve the Contractor from any of his/her responsibilities under this contract.

#### **14. PROTECTION OF UTILITIES, FENCES AND PRIVATE PROPERTY**

The Contractor shall be responsible for the protection of all utilities, fences, mailboxes, and signs not designated for removal and the protection of private property at the job site during the time of construction. Storage of excavated materials shall be such that deposition onto private property will not take place.

It is the Contractor's responsibility to contact the Municipal Authorities or Utility Companies for information in regard to the exact location of all utilities, to exercise the necessary care in construction operations and to take such other precautions as are necessary to safeguard the utilities from damage. Be responsible for locating all existing utilities through "daylighting" method. The locations of utilities shown on the Drawings are approximate.

Exercise the necessary care in construction operations and take other precautions as necessary to safeguard the utilities from damage. Bear the cost of repairing damaged utilities.

Contact the Engineer and the utility companies for any information not shown on the Drawings with regard to the location of underground utilities.

Provide support for the existing utilities/services as required at crossings or in proximity to new installations.

#### **15. PROTECTION OF ADJACENT STRUCTURES**

The Contractor shall in the manner specified, sustain in their places and protect from injury any and all water or gas mains, public or private sewers or drains, conduits, service pipes, sidewalks, fences, retaining walls, curbs and all other structures or property in the vicinity of his work, whether over or underground, or which appear in the excavation and he shall assume all costs and expenses for damage which may be occasioned by injury to any of them. The support of any water mains shall be to the satisfaction of the Contract Administrator.

Before excavation commences, the Contractor shall have the location of all underground utilities staked out by the appropriate Utility Company. The location of utilities shown on the Contract Drawings (if any) is in accordance with the best information available but the Owner does not guarantee the accuracy or the completeness. It is the Contractor's responsibility to contact the various Utilities for further information.

#### **16. METRIC AND IMPERIAL SYSTEMS OF MEASUREMENT**

Quantities and dimensions referenced in the Special Provisions, Specifications and General Conditions shall be converted from one system of measurement to the other as required in order to complete the work.

Where a conflict occurs between imperial and metric quantities or dimensions, the Contract Administrator shall determine the appropriate system of measurement to be used.

In the event that a weigh scale is not available in the required metric or imperial units as designated for material to be weighed on this Contract, then the quantities so weighed on the scale supplied, shall be converted to the designated units by the Contract Administrator, for payment purposes. One conversion only shall be made at the end of each day; on the basis that one metric tonne is equivalent to 1.102 imperial tons.

Where conversion from one system of measurement to the other is required the Metric Practice Guide, standard CSA Z234.1-00 shall apply.

## **17. LINES, LEVELS, AND GRADES**

Layout for the work on this contract shall be provided by the Contractor, in accordance with GC 3.05, GC 7.01, and the following:

The Contractor shall carefully lay out his work so that during its progress and at its completion, it shall conform to the lines and levels as shown on the plans and profiles and established by him in the field. The work shall be built in accordance with the contract drawings and directions given from time to time by the Engineer.

The Contractor shall provide a copy of grade sheets to the Engineer on a weekly basis for all work related to this contract.

The cost of layout performed by the Engineer because of errors in the Contractor's layout or because of the Contractor's inability to correctly perform the layout shall be charged to the Contractor at rates normally charged for such work by the Engineer. Charges incurred under this provision shall be withheld by the Owner from payments made to the Contractor, or otherwise collected by the Owner from the Contractor.

The Contractor shall provide to the Engineer, two copies of all calculated grade sheets, and grade set records for all phases of the work.

## **18. UTILITY INSTALLATION AND RELOCATIONS**

It is the Contractor's responsibility as "Constructor" under the provisions of the Occupational Health and Safety Act to co-ordinate the activities of all employers and workers operating within the contract limits to ensure that the requirements of the Occupational Health and Safety Act are satisfied. The Contractor shall ensure that each utility company operating within the contract limits is included in this process.

During the time of the utility work, the Contractor must vacate an area within a 30m radius of the actual work location for the duration of the utility work.

The Contractor must comply with the requirements of the utility companies with respect to protection of their facilities, in particular with regard to underground cables.



## **19. SPILLS REPORTING**

Spills or discharges of pollutants or contaminants under the control of the Contractor, and spills or discharges of pollutants or contaminants that are a result of the Contractor's operations that cause or are likely to cause adverse effects shall forthwith be reported to the MECP Spills Action Centre at 1-800-268-6060 and the Contract Administrator.

Such spills or discharges and their adverse effects shall be as defined in the Environmental Protection Act R.S.O. 1980.

All spills or discharges of liquid, other than accumulated rainwater from luminaries, internally illuminated signs, lamps, and liquid type transformers under the control of the Contractor, and all spills or discharges from this equipment that are a result of the Contractor's operations shall, unless otherwise indicated in the contract, be assumed to contain PCBs and shall forthwith be reported to the MOECC Spills Action Centre at 1-800-268-6060 and the Contract Administrator.

This reporting will not relieve the Contractor of his/her legislated responsibilities regarding such spills or discharges.

Submit a contingency plan for dealing with spills to the Engineer for approval. The spill contingency plan must describe in detail, the action to be taken and the persons and the agencies to be notified in the event of such a spill, including a spill reporting procedure. The plan shall include procedures for interception, rapid clean-up and disposal of any spillage that may occur. Be prepared at all times to intercept, clean-up and dispose of any spillage that may occur.

## **20. MANAGEMENT AND DISPOSAL OF EXCESS MATERIALS AND WASTE**

All excess material not required by the Municipality and indicated herewith under this Provision will be disposed of by the Contractor at the Contractor's expense.

Payment for management and disposal of excess materials shall be included in related contract items.

Dispose of all wastes and rubbish off site in accordance with applicable legislation. Do not bury wastes on site. Do not dispose of wastes, fuels, lubricants, pesticides or volatile materials into water courses or sewers.

Clean during the course of the work, before the start-up of a part of the works, and at completion, as required. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

Store volatile wastes in covered metal containers, and remove from premises daily.

Prevent accumulation of wastes which may create hazardous conditions.

Maintain the project site and adjoining public properties free from accumulation of waste materials and rubbish. Provide on-site dump containers for collection of waste materials and rubbish. Do not burn debris on the project site or adjacent areas.

Provide adequate ventilation at all times when volatile or noxious substances are used.

## **21. DISPOSAL OF WATER**

Provide temporary ditches and /or sedimentation ponds of sufficient capacity to contain site run-off and truck wash water. Provide ditches and ponds with silt traps built up with silt fence, straw bales and rock check dams as shown on the Drawings and in accordance with OPSS to retard and filter run-off before it is discharged to a watercourse.

Discharge pumped water through a geotextile filter bag or through a system of a geotextile filter cloth layer on either side of a minimum 300 mm clear-stone layer.

Do not pump or drain water containing deleterious materials into waterways and sewers. Intercept concentrated run-off from unstabilized areas and divert to a temporary ditch or other stabilized areas under sheet flow conditions. Pump water from excavations to an "upstream" location on the temporary ditch, to allow maximum settling and filtration prior to discharging to a natural watercourse.

Chlorinated water must be dechlorinated to non-detect levels prior to disposal to the sewers or waterways.

## **22. SCHEDULE OF WORK**

Upon award of this Contract, the Contractor shall prepare a "Contractor's Schedule of Work". The "Contractor's Schedule of Work" will be itemized, outlining the items to be scheduled by the Contractor. The Contractor shall complete and remit this Schedule to the Owner with the Contractor's signed Contract Documents for execution by the Owner. Refer to Item 1 of Special Provisions for the scope of work under Substantial Performance.

## **23. SCHEDULE, WORKING HOURS AND LIQUIDATED DAMAGES**

### **Fixed Completion Date and Charges**

#### **1. Time**

Time shall be the essence of this Contract.

#### **2. Progress of the Work and Time for Completion**

The Contractor shall establish and provide a schedule of work to the Contract Administrator at the pre-construction meeting.

Work on this Contract may commence after signing of the Contract agreement by the Municipality. The Contractor shall diligently prosecute his work on this Contract to ensure that all works are completed in a timely fashion.

If the time limit specified is not sufficient to permit completion of the Work by the Contractor working a normal number of hours each day, or week on a single daylight shift basis, it is expected that additional and/or augmented daylight and night shifts will be required throughout the life of the Contract to the extent deemed necessary by the Contractor to ensure that the Work will be completed within the time limit specified. Any additional costs occasioned by compliance with these provisions will be considered to be included in the prices bid for the various items of work and no additional compensation will be allowed therefore.

No weekend work, or work on statutory holidays will be permitted unless otherwise stipulated in the contract and approved by the County. Extension of time allowed as per GC3.07, Extension of Contract Time, of OPS General Conditions of Contract, August 1990. Hours of work shall be from 7 a.m. to 7 p.m. on weekdays (no weekend or statutory holiday work, except for emergencies) unless prior written approval is received from the Contract Administrator.

Conduct operations so as not to create a nuisance or disturb the peace unnecessarily and that the impacts of the operations meet with the approval of the Owner. Whenever the Contractor desires to work outside normal working hours, obtain written authorization of the Engineer for such change, at least 48 hours prior to the contemplated change in operations.

Refrain, to the extent possible, from work on days which are Statutory Holidays or Public Holidays or designated holidays recognized by the Owner. Give the Owner notice in writing at least four working days in advance of such holiday, stating those places where work will be conducted. Failure to give notice in writing 4 days in advance of a holiday will be considered an indication that no work requiring the presence of the Engineer or the Owner's representative is to be performed on such a holiday.

Do not perform work on Saturday or Sunday, except in the case of emergency or where required due to facility operations, and then only with the written authorization of the Engineer and to such extent as the Engineer may judge to be necessary.

The Engineer shall have the right to order the Contractor to perform any part of the Work outside of normal working hours as specified above, whenever, in the judgement of the Engineer, it may be necessary or expedient, to do so to maintain essential services to the Owner's customers or to maintain traffic on public roadways. Unless such requirement is specified in the Contract Documents, such change shall be administered in accordance with PART 6 of the General Conditions – Changes in the work.

Be responsible for obtaining exemption to the local noise bylaw if construction work is to be performed outside of the regular working hours.

### **3. Liquidated Damages**

It is agreed by the parties to the Contract that in the case that all the work called for under the Contract is not completed within the dates included, a loss or damage will be sustained by the Owner. Since it is, and will be impracticable and extremely difficult to ascertain and determine the actual loss or damage which the Owner will suffer in the event of and by any reason of such delay, the parties hereto agree that the Contractor

will pay to the Owner the sum of **\$1,500** as liquidated damages for each and every calendar days delay in finishing the work in excess of the required completion dates prescribed herein. It is agreed that this amount is an estimate of the actual loss or damage to the Owner, which will accrue during the period in excess of the prescribed substantial performance dates.

In addition to liquidated damages, the Contractor shall also be liable to reimburse the Municipality its costs for additional administration, supervision, and inspection. The Contractor will also be responsible for the payment of any fines that the Ministry may impose on the Municipality due to a delay in the completion date.

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

An application by the Contractor for an extension of time as herein provided shall be made to the Contract Administrator, in writing, at least fifteen days prior to the date of completion fixed by the contract. All bonds or other surety furnished to the Owner by the Contractor shall be amended where necessary at the expense of the Contractor to provide coverage beyond the date of any extension of time granted, and the Contractor shall furnish the Owner with evidence of such amendment of the bonds or other surety.

Any extension of time that may be granted to the Contractor shall be so granted and accepted without prejudice to any rights of the Owner whatsoever under this contract. All such rights shall continue in full force and effect after the time limited in this contract for the completion of the work and whenever, in this contract, power and authority is given to the Owner or the Contract Administrator or any person to take any action consequent upon the act, default, neglect, delay, non-observance or non-performance by the Contractor in respect of the work or contract, or any portion thereof. Such powers or authorities may be exercised from time to time, not only in the event of the happening of such contingencies before the time limited in this contract for the completion of the work, but also in the event of the same happening after the time so limited, in the cause of the Contractor being permitted to proceed with the execution of other work under an extension of time granted by the Contract Administrator.

The Contractor will not be assessed with liquidated damages for any delay caused by Acts of God or of Public Enemy, Acts of the Province or any Foreign State, Fire, Floods, Epidemics, Quarantine Restrictions, Strikes, Embargoes or delays of subcontractors due to such causes.

## **24. EXTRA WORK**

The Contractor shall notify the Contract Administrator in writing before the commencement of any work that he considers extra work so that records may be kept. If notice is not given, it will be deemed that payment is included in the contract prices and no additional payment for extra work will be made.

Invoices for extra work shall be submitted as soon as possible after the completion of such work and in no case later than 30 days after the completion of the work in question.

Payment will be made on the next payment certificate after the approval of the Contractor's invoice. If extra work invoices and all required substantiation and support are not received within 30 days, it is deemed that the Contractor does not intend to charge for the work and no payment will be made.

## **25. OCCUPATIONAL HEALTH AND SAFETY- CONFINED SPACES**

The Contractor's attention is specifically directed to Section 119 of the OH&S Regulations for Construction Projects regarding requirements for working in confined spaces. All maintenance holes, catch basins and structures must be checked for the presence of gases prior to removal of covers and/or entering them.

Should the Contractor not have the proper equipment for this procedure he/she may make arrangements, at his/her own expense, to have the testing performed by the County.

## **26. SPECIAL PROTECTION AND SAFETY PRECAUTIONS**

Comply with the requirements of the Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and the provision of Material Safety Data Sheets (MSDS) acceptable to Labour Canada.

Inform the Owner of the location of hazardous materials and ensure that these materials are not kept stored or used on site without the Owner's prior consent or approval.

Comply with the Owner's Health and Safety policies, programs, rules and requests. Provide to the Engineer for review, a copy of Contractor's current Health and Safety Policies and Program. Implement the Health and Safety program prior to the commencement of construction.

If workers fail to comply with any program, policy, rule, or request regarding health and safety, the Owner reserves the right to remove that person from the Work.

Ensure that Subcontractors and suppliers are aware of and comply with all Owner's Health and Safety policies, programs, rules and requests. Obtain copies of all Subcontractors' Health and Safety Policies and Programs prior to such Subcontractor commencing work on the site if and when requested.

Maintain on site at a location accessible to all workers, the Engineer and the Owner, current MSDSs.

Safety equipment such as gas detection equipment for explosive or toxic gases or oxygen deficiency, safety harness, Self-Contained Breathing Apparatus (SCBA) and ropes are to be made available to the resident inspection staff. When it is required for the resident inspection staff to enter manholes, elevated areas or other potentially hazardous areas, provide competent

personnel to assist with the entry into the said areas with the inspection staff and personnel with the necessary safety equipment to be present as required.

27. Provide the Owner’s Project Manager and Contract Administrator with a list of Designated Substances that will be brought to the site prior to commencing work. Material Safety Data Sheets (MSDS) and the hazardous material inventory for each substance listed must be kept on site. **OCCUPATIONAL HEALTH AND SAFETY ACT 1991 – DESIGNATED SUBSTANCES**

In accordance with the requirements of Section 18a (1) of the Occupational Health and Safety Act, the Authority has determined that the designated substances as listed hereunder are present on the site and within the limits of this Contract.

Designated Substance	Identified on this Site	Location
Acrylonitrile	No	
Arsenic	No	
Asbestos	No	
Benzene	No	
Coke Oven Emissions	No	
Ethylene Oxide	No	
Isocyanates	No	
Lead	anticipated	<b>Existing watermain along Union and Church Street</b>
Mercury	No	
Silica	No	
Vinyl Chloride	No	

The existing watermain along Union and Church street, and the connecting watermains to other streets are anticipated to be Cast Iron or Ductile Iron, and as such may contain **lead joints**. Undertake the necessary safety precautions when working around the existing watermain, for connection to the new watermains or for abandoning

It is the responsibility of the Contractor to ensure that all sub-contractors performing work under this Contract have received a copy of this specification, where Designated Substances are identified as being present at the site of the work.

The Contractor shall comply with the governing Ministry of Labour Regulations respecting protection of workers, removal, handling and disposition of the Designated Substances encountered on this Contract.

Prior to commencement of this work, the Contractor shall provide written notification to the Ministry of Labour and a copy shall be provided to the Contract Administrator.

In the event that the Ministry of the Environment has concerns with any proposed disposal location, further notification shall be provided until the Ministry of the Environment’s concerns have been addressed.

All costs associated with the removal and disposal of Designated Substances herein identified, shall be deemed to be included in the appropriate tender items.

Should a Designated Substance not herein identified be encountered in the work, then management of such substance shall be treated as Extra Work.

The requirements of Section GC4.03 of the General Conditions of the Contract shall apply.

## **28. ONTARIO PROVINCIAL STANDARDS**

The Ontario Provincial Standard Specifications (OPSS) form part of this contract, but are not reproduced herein. The contractor is responsible for obtaining and having on site, a current issue of the OPSS. The OPSS is the standard specification for this contract. The Special Provisions and Tender Items will take precedence over the OPSS where a conflict arises. Applicable OPSS are identified for each Tender Item under the OPSS No. column of the Tender Item List. All Contractors proposing to bid on this contract will be required to obtain their own copies of the applicable OPSS Specifications and Standard Drawings, which will be in effect for this contract.

Ontario Provincial Standard Specifications (OPSS) and Ontario Provincial Standard Drawings (OPSD) as well as MTO Standard Specifications and Standard Drawings, form part of this contract.

## **29. REGULATIONS OF PITS AND QUARRIES**

Bill 120, An Act to Regulate Pits and Quarries and to Provide for their Reconstruction is now in effect and shall be applicable in such parts of Ontario, as the Lieutenant Governor shall from time to time designate by Regulation. All costs related to work required under this specification will be deemed to have been included in the appropriate tender items and no additional payment will be made.

## **30. FIELD LAYOUT**

The contractor is responsible for all field layout including setting all existing horizontal and vertical alignment control prior to the start work.

## **31. NOTIFICATION OF BUSINESSES AND RESIDENTS**

Prior to construction the Contractor will be responsible for contacting the affected businesses and residents by written communication to advise the owners of the proposed construction work. The Contractor shall also include notification to affected area property owners as to when a disruption to their property access will occur and for how long. The Contractor shall proceed in such a manner as to minimize interruption to local residences. A copy of such notice must be approved by the Municipality prior to distribution.

Prior to construction, the contractor will be responsible for contacting the emergency services (e.g. ambulance, police, fire etc.) by written communication to advise them of the proposed construction work. The notification shall be sufficiently detailed and include, but not limited to the following:

- Details on road restrictions and special allowances for emergency vehicles
- Alternate routes/detour routes
- Detailed schedule, including the expected road restrictions at certain key locations such as the Church St. Museum and Macaulay Heritage Park

### **32. PAYMENTS**

Except as herein provided, payments under this Contract will be made in accordance with Section GC8.02.03 of the General Conditions.

Notwithstanding the provisions of the General Conditions respecting certification and payment, the Owner may withhold 2 ½ percent of the total value of work performed beyond the expiration of 60 days from the date of publication of the Certification of Substantial Performance, to enable to Contract Administrator to produce the final detailed statement of the value of all work done and material furnished under the Contract. As a condition of holdback reduction from 10% to 2 ½%, the Contractor shall supply a Statutory Declaration as defined in GC8.02.03.04(03).

The Completion Payment Certificates to include statutory holdback release, will be issued within 120 days after the date of completion as specified under GC1.06. The date for interest due to late payment shall commence following 180 days after the date of completion of the work.

As a condition of the final holdback payments, the Contractor shall provide the required Property Owner's Releases as specified elsewhere, as appropriate.

The Contractor is advised that the Owner may withhold payment on Interim and Holdback Release Certificates up to 28 calendar days from the date of receipt of the executed Payment Certificates.

In order to obtain a Certificate of Substantial Performance, the Contractor shall submit the following documentation:

- a) A release by the Contractor in a form satisfactory to the Owner releasing the Owner from all further claims to the Contract, qualified by stated exceptions where appropriate;
- b) A Statutory Declaration in a form satisfactory to the Owner that all liabilities incurred by the Contractor and the Contractor's sub-contractors in carrying out the Contract have been discharged, qualified by stated exceptions where appropriate.
- c) A satisfactory Certificate of Clearance from the Worker's Safety and Insurance Board.

The Contractor shall include in the Total Tender Price the publication cost of the Certificate of Substantial Performance. Publication is mandatory whether the Contractor Requests Substantial Performance or not.



Payment for items that span multiple blocks of construction will be paid by percentage of total amount completed for the total project. For instance, Traffic Control is a lump sum amount for the duration of construction and will be paid as blocks are completed or milestones are reached - if a 200m block is completed in a 400m project, 50% of that item will be paid.

### **33. TENDER ELEMENT ALTERNATIVES**

If there are Tender requirements that a Bidder cannot meet, or the Bidder would propose an alternative, the bidder shall identify those elements, a reasonable alternative and justification for the County's consideration during the Tender process.

If a proposed alternative is deemed acceptable it will be confirmed via Addendum for all Bidders to consider in their submission.

Where more than one manufacturer or supplier's name or product is listed in the Specifications, note that the design, as shown on the Drawings, has been based on the first named supplier, manufacturer or product listed.

If a product from a manufacturer or supplier other than the first named is provided, assume liabilities and costs for the following:

- The proper fit and matching of such equipment or material to surrounding pipe, equipment or material of the building, electrical, mechanical and controls or any other sub-trades, and
- Engineering and construction costs that may subsequently arise as a result of the acceptance of the product from other than the first named manufacturer or supplier.

### **34. SUBSTITUTIONS**

In all cases where a substitution is proposed other than from one of the named manufacturer's or supplier's products, provide written justification to the Engineer indicating the reasons for the substitution (eg. significant delay in delivery, strikes, unavailability, improved quality or field service, significant contract cost reduction). Provide sufficient descriptive and technical information for the Engineer to thoroughly compare articles or groups of articles with those specified. Failure to comply with this requirement to the Engineer's satisfaction may result in rejection of the request due to insufficient information or time to evaluate it.

Submit requests for substitutions on the Substitution Request Form appended to the end of this Section. Requests for substitutions submitted in other ways will not be considered.

Should the equipment or materials proposed by the Contractor be accepted, provide required changes to the Contract to suit the accepted substitution at no additional cost to the Owner. Do not permit subcontractors to make applications and submissions related to substitutions directly to the Engineer. Such applications and submissions must be made by the Contractor. Applications and submissions relating to alternatives and substitutions made by subcontractors will not be considered.

Ensure that, when making requests for substitutions, allowance in the schedule has been made for the Engineer and the Owner to fully consider the proposed substitution and to provide a

response. Be aware that no claims for costs or time will be entertained due to the time required for the consideration of substitution requests as long as the response times falls within the allowable response time as specified.

Be aware that no claims for costs or time will be entertained relating to the rejection or acceptance of a proposed substitution.

### **35. SHOP DRAWINGS**

Shop drawings are submittals that are required for all equipment and structures as shown on the Drawings and specified in the individual sections. The Engineer will review and provide comments.

Be responsible for the accuracy and completeness of the information contained in each submittal and ensure that the material, equipment, or method of work is as described in the submittal. Verify that features of products conform to the specified requirements. Edit submittal documents to indicate only those items, models, or series of equipment that are being submitted for review. Cross out or otherwise obliterate extraneous materials. Coordinate submittals among the subcontractors and suppliers and ensure there is no conflict with other submittals. Notify the Owner in each case where a submittal may affect the work of trades or the Owner. Carry out any relocation of work due to interference at no additional cost to the Owner.

Verify that the materials and equipment to be furnished and method of work comply with the provisions and the intent of the Contract.

Coordinate submittals with the work so that work will not be delayed. Coordinate and schedule different categories of submittals, so that one will not be delayed for lack of coordination with another. No extension of time will be allowed because of failure to properly schedule submittals. Do not proceed with work related to a submittal until the submittal process is complete. This requires that submittals for review and comment are returned to the Contractor stamped "REVIEWED" or "REVIEWED AS NOTED"

Stamp and date each submittal to certify that you have reviewed the submittal, verified field conditions, and complied with the Contract Documents.

The Contractor may authorize a material or equipment supplier to deal directly with the Engineer with regard to a submittal. These dealings are limited to contract interpretations to clarify and expedite the work and cannot be used for the basis of a claim.

Ensure that all "REVIEWED" or "REVIEWED AS NOTED" submittals are available for viewing at the project site.

The review of methods of work, or information regarding materials or equipment the Contractor proposes to provide, shall not relieve the Contractor of his responsibility for errors therein and shall not be regarded as an assumption of risks or liability by the Owner, or by any representative officer, employee or agent thereof. The Contractor shall have no claim under the contract on account of the failure, or partial failure, of the material, or equipment so reviewed.

Submittals provide information concerning features and characteristics of materials, equipment, and methods of operation selected based on the Contractor's judgment of their conformance to the specified requirements. Review of submittals does not extend to means, methods, techniques, sequences or procedures of construction, or to verifying quantities, dimensions, weights or gauges, or fabrication processes, except where specifically indicated or required by the project requirements or to safety precautions or programs incident thereto. Review of a separate item, as such, will not indicate approval of the assembly in which the item functions.

The review of submittals shall not relieve the Contractor of his responsibility for errors therein, and shall not be regarded as assumption of risks or liability by the Owner, or by any representative officer, employee or agent thereof. The Contractor shall have no claim under the contract on account of the failure, or partial failure, of the material, or equipment so reviewed. A mark of "REVIEWED" or "REVIEWED AS NOTED" shall mean that the Owner has no objection to the Contractor, upon his own responsibility, providing the materials or equipment proposed.

The Engineer will review submittals for general arrangement only. Be responsible for checking dimensions, quantities, proper fitting, and construction of the work, and for furnishing materials or doing work required by the Contract Documents, which may not be indicated on shop drawings when reviewed.

#### **Electronic Submissions**

Upload submittal package to the Engineer's ftp site or email (if less than 5 MB), which will be set up after Contract award.

Send an email to the Engineer notifying that the submittal or submittals have been uploaded. In the email, include the name and division number of the submittal and the folder/location it was uploaded to.

The Engineer reserves the right to require that a submittal be based only in hard-copy or only in electronic format.

#### **Information Only Submittal Procedure**

Unless otherwise specified, within ten (10) week days after receipt of an Information Only submittal, the Engineer shall acknowledge the submittal and return one (1) copy of the submittal bearing the Engineer's Information Only stamp.

#### **Shop Drawing Procedures**

Unless otherwise specified, within ten (10) week days after receipt of a shop drawing submittal for review and comment, the Engineer shall review the submittal and return one (1) copy of the marked-up shop drawing bearing the Engineer's Shop Drawing Review stamp. The review period may be longer depending on the completeness of the submittal and number of submittals being issued. The returned submittal shall indicate one of the following actions:

1. If the review indicates that the material, equipment or work method complies with the Contract Documents, the submittal will be marked "REVIEWED". In this event, the Contractor may begin to incorporate the material or equipment covered by the submittal into the work.
2. If the review indicates limited corrections are required, the submittal will be marked "REVIEWED AS NOTED." The Contractor may begin incorporating the material or equipment covered by the submittal in accordance with the noted corrections.
3. If the review reveals that the submittal is insufficient or contains incorrect data, the submittal will be marked "RESUBMIT AS NOTED". Make the changes to the shop

drawings that the Engineer may require. Identify changes on resubmissions and indicate the revision dates. Work on this item is not to commence until the submittal has been revised, resubmitted and returned marked either "REVIEWED" or "REVIEWED AS NOTED".

4. If the review indicates that the material or equipment does not comply with the Contract Documents, the submittal will be marked "REJECTED". Work on this item is not to commence until a new submittal is made and returned marked either "REVIEWED" or "REVIEWED AS NOTED".

The Contractor shall bear all costs associated with resubmission of a submittal.

Contractor shall carry costs of Engineer's and Owner's review for all shop drawing submissions required more than two (2) times.

Copies of corrected shop drawings shall be included in the Operations and Maintenance manual.

Submit shop drawings, for piping arrangements, support/anchors, fabrication and erection drawings, design calculations, etc., where applicable, for all work in this Contract.

Submit shop drawings for all temporary works that control the dimensions of any part of the structures to be constructed under this Contract, or which impose loads on parts of the completed permanent works or existing works.

Ensure that shop drawings of mechanical and electrical equipment show details of construction, accurate dimensions, capacities and performance characteristics.

Manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and other standard descriptive data may be accepted in lieu of shop drawings, if they:

- Supplement standard information to provide additional information applicable to the project.
- Show dimensions and clearances required.
- Show performance characteristics and capacities.
- Show wiring diagrams and controls.
- Delete non-applicable information.

Submit shop drawings in SI metric, or SI and Imperial units. Shop drawings in Imperial units only will be returned by the Engineer without review.

Submittals that do not have all the information required to be submitted, including acknowledgement of deviations, are not acceptable and will be returned without review.

For all submittals that require a Professional Engineers seal, an initial submittal should be made prior to the placing of the Engineer's seal. Comments will be provided to the Professional Engineer and the Contractor. Submit the sealed final drawings for Information Only.

### **Coordination Drawings**

Prepare Coordination Drawings for areas of potential conflict, where interference may be caused by uncoordinated use of available space by the various trades and subcontractors. Clearly show on the same drawing the proposed works of all disciplines, such as process piping, plumbing and drains, air ducts, electrical cable trays and conduits, including valve orientation and access.

Show piping and other services that are to be cast into concrete.

Submit Coordination Drawings for review as specified prior to commencement of the work.  
Update and resubmit the Coordination Drawings when changes and relocations are to be made.

#### **Construction Coordination and Sequencing**

Submit a detailed Schedule and Sequencing Plan outlining the steps to be taken to construct the works. Review the proposed Staging Plan and discuss timing and constraints with the Owner's operations staff. Both the Owner and the Engineer reserve the right to request revisions to either the stages and or the timing. Do not proceed with the work until the Staging Plan has been reviewed and accepted by the Owner.

Prepare and submit, to the Engineer, Sequencing Plans where interferences exist and where a specific work sequence is required to avoid or minimize operational interruptions of the existing facilities. Tie the Sequencing Plans to the project schedule.

#### **Falsework, Shoring or Bracing Drawings**

Prepare and submit drawings of falsework, shoring and bracing to the Engineer for review when required. Falsework, shoring and bracing drawings shall bear the seal of a Professional Engineer licensed to practice in the Province of Ontario. The falsework, shoring or bracing shall be constructed in accordance with the reviewed drawings and at least one reviewed copy of falsework, shoring and bracing drawings shall be kept at the site at all times.

#### **Conduit Layout Drawings**

Submit conduit layout drawings, clearly outlining proposed wiring routes as required keeping in mind the requirement that conduits be concealed where required. These drawings will be reviewed as shop drawings. At the completion of the project, submit as-constructed conduit drawings, clearly showing exact routings of conduit to permit future cutting of concrete safely. Ensure that the Engineer is given free access to conduit drawings kept on site to check their correctness as work progresses.

Clearly identify and show the location of all conduit, which is installed for future use. List also the future intended use for each conduit.

### **36. EXISTING SERVICES**

There are Natural gas, Hydro One, Bell and communication services are provided along the watermain routing.

All infrastructure must be identified prior to construction. Any utilities and infrastructure indicated in the Contract Drawings are approximate only and not a complete inventory .

Exercise extreme caution when working near existing underground and overhead utilities.

Make necessary arrangements with railway and utility companies for support and protection of existing structures where required.

All traffic control system conduits that are broken or damaged shall be repaired immediately.

Any damage to existing utilities, deemed to have been caused by the Contractor's lack of reasonable caution shall be repaired at the Contractor's expense.

No extra payment shall be made for working around conditions resulting directly or indirectly from the Contractor's lack of reasonable caution. Sign boards shall be erected in locations indicated by the Owner or Engineer.

Clean the first existing downstream maintenance holes and catch basins prior to completion.

### **37. OTHER WORK WITHIN / ADJACENT TO THE PROJECT LIMITS**

The MUNICIPALITY does not have any other work in the area of the project limits during the scheduled timeframe for this project. Should this change, the MUNICIPALITY will advise and coordinate with the Contractor.

### **38. ACCESS TO WORK**

The Owner or persons authorized by the Engineer may at any time and for any purpose enter upon the work and premises used by the Contractor. Maintain proper and safe access to the existing facility at all times (including but not limited to the Picton Heights Reservoir, located on 244 County Road 22, and the Water Works Department, located on 37 Church Street, Picton). Ensure that personnel employed by the Owner at the existing facility have full access at all times to all areas required by the normal operation of the facility.

Others, such as regulatory and permitting agencies, may also, when authorized by the Engineer, enter upon the work and premises used by the Contractor for purposes that may be required by their agencies.

Provide proper facilities by means of walkways, ladders or otherwise, to secure convenient safe access to all parts of the work as may be required by the Engineer.

Place materials so that free access may be maintained at any time to all parts of the work and facilities.

Repair in a timely manner any damage to the existing driveways and key access roads, to the satisfaction of the Engineer, unless previously coordinated and agreed with the Owner and Engineer.

Provide and maintain access route at all times for Emergency and Owner's vehicles.

The Contractor shall clear the work area of snow and ice as required. The Contractor shall removal all snow and ice from the pavement and existing sidewalk areas before opening the roadway to public use. Snow removal shall be considered incidental to the work

### **39. PROTECTION OF CONSTRUCTION AND EQUIPMENT**

Protect new construction from damage. Do not overload any part of a structure, falsework, formwork or scaffolding. Rebuild to the satisfaction of the Engineer damaged portions of the work.

Take precautions to protect structures and equipment until completion.

Protect equipment supplied and/or installed, under this contract, from damage, dust, dirt, etc., to the satisfaction of the Engineer. If required, supply temporary housing for equipment or items supplied.

Comply with instructions of the Engineer concerning storage of equipment and materials.

Assume full responsibility for storage and protection of materials and equipment delivered to site.

**40. OWNER'S INTEREST IN EXISTING EQUIPMENT AND MATERIALS:**

Provide the Owner with the first right of refusal for the existing equipment or material that is removed from the existing works. Before proceeding with the demolition work, remove equipment and materials designated, by the Engineer, to be retained by the Owner. Clean the equipment and material to the satisfaction of the Engineer. Store the equipment and material in a manner and in a location satisfactory to the Engineer.

**41. CHANGES TO SUIT PREFERRED CONSTRUCTION METHOD:**

Should the method of construction preferred by the Contractor for part or all of the works necessitate re-design, alterations, additions or changes to the structures or any part of the works, provide such changes, re-design, alterations and/or additions, as necessary and in accordance with the Contract requirements and to the satisfaction of the Engineer at no additional cost to the Owner.

Formally propose deviations from the Contract Documents for review by the Engineer. Clearly indicate the change in value of the works caused by the deviation.

**42. INTERPRETATION OF DRAWINGS AND SPECIFICATIONS:**

In case of discrepancy between the Contract Drawings, Specifications or any other part of the Contract Documents, the order of precedence listed in the Contract Documents governs this Contract.

The Contract Drawings and Specifications are complementary to each other and what is called for by either is as binding as if called for by both. It is the intention to provide for a finished project, complete in all essentials, notwithstanding that not every item involved may be particularly mentioned or shown.

Notify the Engineer as soon as possible if any unintentional error or omission should become known. Engineer will review and propose a solution and the Contractor shall be compensated in accordance with the General Conditions.

The location of un-dimensioned fixtures, apparatus, outlets, conduits, piping, etc., shown on the Contract Drawings or specified are approximate. Finalize the actual locations as directed by the Engineer and as required to suit conditions at the time of installation and as is reasonable.

Locate equipment, fixtures, piping, conduits, etc. that are un-dimensioned to create the minimum interference with pedestrian access, machinery traffic, and headroom.

Take note that the Contract Drawings are prepared using SI (metric) units; however, some Contract Drawings may use imperial units particularly if they have been prepared from drawings for previous work. Be responsible for the accuracy of conversions between Imperial units and SI units.

Read the Drawings as a complete package even though the Contract Drawings have been divided into disciplines such as: General, Architectural, Structural, Process, Mechanical, Electrical, Instrumentation and other disciplines. Details applicable to one section may appear on Drawings pertaining to another section or sections.

Read the Specifications as a complete package even though the Specifications have been divided into Divisions. Specifications relating to one division may appear in another division or divisions. Coordinate the work of the sub-trades to meet the requirements of the Contract.

#### **43. GEOTECHNICAL INVESTIGATIONS:**

A geotechnical investigation of the project site has been carried out by a geotechnical consultant. There is no guarantee as to the accuracy of this information.

Be advised that the Engineer and the Geotechnical Consultant is not assuming any liability for loss, damage or expenses of whatever nature or kind arising from or resulting directly or indirectly from the provision of geotechnical information or reports for the project. Without limiting the generality of the foregoing, every exemption of liability, defence and immunity applicable to the Owner or to which the Owner is entitled hereunder is also available and extends to protect the Engineer and the Geotechnical Consultant rendering professional services.

Be satisfied as to the soil conditions and perform test excavations and/or borehole drilling as required, to supplement the available information. Protect existing facilities and underground utilities as specified.

#### **44. WORK DONE IN COLD WEATHER:**

Protect structures, piping, sewers, and equipment that may be exposed to frost during the construction period until the project is completed and accepted. Include such protective measures in the contract price and correct any damage sustained, to the satisfaction of the Engineer.

Submit to the Engineer in writing, before construction begins an outline of specific frost protection measures to be implemented on this project. Be responsible for the proper implementation of frost



protection measures and damages arising from freezing regardless of the review by the Engineer of the frost protection measures.

In instances where the Engineer may permit or order work to be done when the minimum ambient temperature is at, about, or below 4°C, heat all material used. Provide sufficient temporary protection in the form of false work and tarpaulins, or other temporary structures to adequately enclose the portion of the work under construction. Supply sufficient temporary heat necessary to maintain the temperature throughout the work at or above 10°C during the construction and for a minimum of four (4) days after completion of the enclosed portion of the work.

**45. PROFESSIONAL ENGINEER:**

Where the drawings and specifications identify the requirement for a Professional Engineer, provide the services of an Engineering Practitioner licensed in the province where the Project is located.

**46. CO-ORDINATION OF CONSTRUCTION WITH OPERATION OF EXISTING FACILITIES:**

Give plant operations precedence over construction activities.

Maintain the conveyance of sewage at all times (especially if the provisional item of sanitary extension on Old Church Street is accepted as part of the Contract).

All ditches, drainage channels and/or storm sewer systems, which may be affected by construction, shall have their flows maintained at all times during construction, unless permission to the contrary has been obtained from the Contract Administrator and/or Engineer. No extra cost shall be incurred by the Owner for this work. Make allowance in prices for any problems that may be encountered as a result of ditch flows or storm sewer flows. Drainage shall not be impeded nor shall blockages or water backups be permitted. Any damage because of water or flooding shall be the responsibility of the Contractor.

For the facilities on the site, coordinate construction activity under this Contract with the Owner.

Upon award of the Contract, submit a list of services requiring shutdown, anticipated shutdown times and their maximum duration.

Provide 14 days written notice to the Engineer where a temporary shut-down of any portion of existing works is necessary to facilitate construction. Have the proposed timing of such construction reviewed by the Engineer prior to initiation of the work related to the shutdown.

Obtain acceptance from the Engineer for all proposed partial shut-downs required for equipment, piping, instrumentation and electrical installations and/or removal at least 2 weeks in advance by the Engineer. Obtain written approval of all schedules by the Engineer. Ensure all schedules indicate contingency and alternate date and times in the event of postponement for any reason, or breakdown of temporary by-pass equipment during the shutdown. Allow for redundancy in implementing contingency plans.

Provide a detailed schedule indicating each phase of the shutdown and startup of each portion of the existing works.

Provide written procedures for each shutdown and startup activity.

Coordinate with the Engineer connections of all utilities.

Take every precaution to avoid interfering with facility operation and maintenance. In the event of conflict between construction operations and facility operations, facility operations have priority. Reschedule construction operations, if required, without change to the Contract Price.

In the event of unpredictable circumstances and emergencies, the Owner reserves the right to cancel scheduled work that would impact the facility's capability in meeting the MOECC requirements or create operational constraints.

#### **47. PUBLIC RELATIONS AND PUBLIC NOTICES**

Appoint a competent representative to receive and deal with any complaints from the public regarding safety, traffic control, condition of road surfaces within the limits of work, or nuisances in relation to the work.

Provide the Engineer with name, address, and telephone number of the public relations representative at pre-construction meeting.

Notify the Engineer immediately of any complaints of damage to property or personal injury.

Notify the Engineer within 24 hours of action taken in respect to any complaints and outcome of such actions.

Provide a copy of all related correspondence to the Engineer and the Owner.

Maintain a Complaints Log which will be commenced as of the Pre-Construction Meeting. Ensure that the Complaints Log is available for review by the Engineer or the Owner at all times and, particularly, at each site meeting.

Give a minimum of 48 hours written notice of schedule (timing and location) of movement of materials, construction activities, maintenance and repairs affecting adjacent properties or driveway access for residents.

Notify landowners and occupants of properties adjacent to affected areas.

Give a minimum of 48 hours written notice to affected occupants when water service is to be interrupted, unless written permission is obtained from the Engineer.

#### **48. APPROVAL AND PERMITS**

Apply for, obtain and pay for permits required for the project, including but not limited to:

- Mud tracking permit

- EASR
- Electrical Safety Authority
- Other permits as may be required.

Note: The Engineer will be responsible for obtaining the ECA and Form 1 Approval from the Ontario Ministry of the Environment, Conservation and Parks (MECP), and Quinte Conservation Authority where applicable.

The Owner will provide a clean set of Drawings and Specifications for each application.

Arrange for inspections as required by applicable Codes or by authorities having jurisdiction over the Works.

Provide to the Engineer, on a monthly basis, a report of inspection.

#### **49. QUALITY CONTROL AND TESTING**

##### **Inspection of Granular Material**

Supply representative granular materials for sampling and testing. Comply with OPSS requirements.

Provide labour and equipment to obtain and handle samples at work site or at source of materials.

##### **Compaction Testing:**

Compaction testing will be performed by the Contract Administrator or his agent.

Testing to be performed throughout progress of work, using a nuclear densometer, to determine adequacy of compaction.

Contractor's equipment and method of compaction are subject to the approval of the Contract Administrator.

Co-operate with inspection staff during testing period.

After the Contractor has completed his compaction, compaction tests will be taken randomly. Re-excavate and re-compact, at the Contractor's expense, any areas where the tests do not meet the specified degree of compaction. Compact native materials to 95% Standard Proctor Maximum Dry Density unless otherwise specified.

The following shall apply for Quality Assurance / Testing:

1. Granular Material Quality Assurance

OPSS 314 is amended by the addition of the following:

"Stockpile samples shall be tested by the Contract Administrator or his designated agent at least seven (7) days prior to the expected delivery of such materials to the site. Where the stockpile samples fail to pass the required tests, two (2) more samples shall be taken from

the same stockpile by the Contract Administrator or his designated agent. Both of these samples must pass the required tests prior to use of the stockpiled materials. Any further testing shall be at the expense of the Contractor.

The Contractor shall not supply materials from unapproved sources. Where such materials are delivered to the site, the Contractor shall immediately remove such materials from the site at his expense.

Stockpile samples passing an initial testing shall not be taken as final acceptance of materials for the incorporation into the Work. Sampling and test results from these tests shall only determine acceptability of materials for delivery to the site. Final testing of delivered materials shall be the determining factor for acceptance of materials into the Work.”

## 2. Random Testing of Delivered Granular Materials

Random testing of delivered granular materials shall be conducted by the Contract Administrator or his designated agent and at a frequency determined by the Contract Administrator.

Two samples shall be taken for testing. All sampling and testing shall be conducted in accordance with MTO and OPSS testing procedures and in compliance with the C.C.I.L. Aggregate Certification program. Testing of delivered granular materials shall include, as a minimum, gradation testing and percent crushed particles where applicable. The Contractor shall be notified in writing of any material test failures as soon as reasonably possible and a second test shall be arranged as soon as possible using the second sample. If the second sample fails to pass testing, the material shall be immediately removed and replaced with acceptable material.

The Contractor shall be responsible for notifying the Contract Administrator of expected delivery times for materials brought to the site in order that the Contract Administrator can obtain samples of delivered materials on a timely basis.

## 3. Asphalt Quality Assurance

The Contract Administrator shall conduct Quality Assurance testing at a frequency deemed necessary by the Owner for the purpose of verification of mix compliance and density of the placed asphalt.

In the case of dispute, the Contractor may request, in writing, with technical reasons, the Owner to undertake a coring and testing program to check the mix. If the rejectable mix is confirmed, the Contractor shall be responsible for the cost of the coring and testing program. The Contractor shall be responsible for filling all holes resulting from coring with hot mix asphalt and shall provide compaction by means of a mechanical method acceptable to the Contract Administrator.

The Owner may, at their discretion, and with the agreement of the Contractor, conditionally accept borderline work and extend the guaranteed maintenance period by a period of not less than one (1) year.

**Watermain Testing:**

Hydrostatic testing on new watermains shall be performed by the Contractor. Comply with OPSS requirements and County Standards – refer to Appendix D.

**Watermain Chlorination:**

New watermain chlorination and bacteriological testing shall be performed by the Contractor. Comply with OPSS requirements and County Standards – refer to Appendix D.

**50. ENGINEER'S FIELD OFFICE**

Within seven (7) days of the order to commence work or at least seven (7) days prior to the commencement of work on-site, provide a trailer equipped as specified for the sole use of the Engineer or his representatives for the entire duration of the Work.

Locate the Engineer's trailer to the satisfaction of the Engineer and as shown on the drawings.

Provide the doors, including the door in the partition wall with suitable locks. Provide all keys to the Engineer.

Ensure that there are windows in each exterior wall of each room, each 1.16m wide by 0.76m high, each capable of being opened to 50% of the total area of each window.

Provide a cleaning service for the Engineer's trailer on a weekly basis minimum.

Provide private washroom facilities for the sole use of the Engineer adjacent to the Engineer's trailer complete with flush or chemical type toilet, lavatory, mirror and sink with hot and cold running water. Washroom to be heated during fall and winter months. Provide paper towels, hand soap, toilet tissue, and fragrance-free ethyl alcohol gel (minimum 62% ethyl alcohol) throughout the duration of the Contract.

**Equip the office with:**

- a) one (1) standard office desk with drawers on both sides of the leg hole with locks and key and one (1) ergonomically suitable chair satisfactory to the Engineer;
- b) one (1) legal-size, 4 drawer file cabinet with lock and key;
- c) one (1) 2.5 m x 1 m table with folding legs;
- d) electrical lighting system to provide a minimum of 750 lx using surface mounted, shielded commercial fixtures with 10% upward light component,

- with supplementary lighting over the meeting room table, plan table and desks;
- e) fire extinguisher, first aid kit and hand sanitizer; replenish as necessary;
  - f) wall mounted electrical heaters sized to maintain an interior temperature of 21°C when the outside temperature is -30°C;
  - g) electrical outlets at 1.9m o.c. maximum; minimum 2 double outlets per long wall in each room and 1 double outlet per short wall in each room;
  - h) one (1) wall-mounted air conditioning unit in each room capable of maintaining a maximum temperature of +21°C when the outside temperature is +30°C;
  - i) shelves, hat racks, plan racks, and a lockable steel wardrobe and storage cabinet, 1900 mm high 900 mm wide and 500 mm deep for storing instruments and clothing;
  - j) window shades and screens on every window.
  - k) one (1) microwave oven and one (1) electric kettle;
  - l) one (1) broom and one (1) mop.

Provide and maintain electrical service connections.

Provide a single-party telephone line and telephone complete with call forwarding, call display, three-way calling, and voice mail features and pay all related costs including monthly fees and Canada-wide long-distance charges. Provide a separate single-party fax line and pay all related costs including monthly fees.

Provide one (1) new 'unlocked' cell phone compatible for use on the Bell network; make and model no. to be determined by the Engineer, complete with Otter cell phone case for rugged use.

Provide an all-in-one printer/copier/scanner/fax machine HP LaserJet M2727 MFP series (CB532A), for the exclusive use of the Engineer's resident inspection staff. Pay for the machine lease or purchase including maintenance and supply services, as may be applicable, and monthly charges by the telephone company, except long distance transmission charges. Provide toner cartridges as required to the satisfaction of the Engineer. Engineer will provide paper.

Provide high speed mobile Internet access suitable for a minimum of 10 GB monthly usage (Bell mobile internet stick). Pay for the monthly charges by the Internet service provider.

Provide a personal computer as specified below or better, for the exclusive use of the Engineer's representative. Set it up prior to the commencement of any work:

- Laptop – Intel i7 processor (3.2 Ghz or higher) for rugged use complete with suitable AC adapter;
- Minimum 14-inch HD (1600x900) screen;
- Minimum of 8.0 GB of system memory;
- 512 MB of video memory;
- 720p HD webcam, front-mounted;
- 500 GB or higher 7,200 rpm hard drive or 256 GB SSD (Solid State Drive);

- Wireless 802.11 a/g/n Card;
- Gigabit Ethernet;
- Minimum 1TB external hard drive with backup software
- Suitable AC Adapter and charging system;
- Large nylon top-loading carrying case;
- Windows 8 Professional or newer;
- Microsoft Office Home and Business 2013 or newer;
- Trend Micro Titanium Internet Security 2013 or newer;
- Total of four (4) year on-site laptop computer warranty minimum.

Laptop, printer, mobile internet stick and cell phone shall be returned to the Contractor upon completion of Final Acceptance.

Provide one digital camera with the following components and characteristics:

- 12.0 Megapixel resolution or higher;
- 16 GB memory card;
- Camera case;
- Extra battery for the camera;
- Compatible memory card reader;
- Suitable electrical charger for the batteries.

Pay the lease or purchase costs for copier, computer and associated equipment, and digital camera including maintenance and supply services.

Take every reasonable precaution to protect the office and its contents against fire and theft, or other damage. Indemnify the Engineer and its agents against loss by fire, theft and injury to the building, to the office or its contents.

Provide Property and Contents Insurance – The Engineer's trailer and all contents shall be insured for replacement value up to and including \$15,000.00

Maintain the field office on-site and the performance of the office equipment as specified until at least three (3) months following Substantial Performance.

## **51. TEMPORARY UTILITIES**

Make arrangements for the supply of water, electrical power, gas, sanitary facilities, heat, and any other temporary services required during construction. Be responsible for all fees, permits and charges, including arrangements for all necessary applications, incurred throughout the construction period until the date of acceptance as established by the Engineer.

Be responsible for providing electrical power generators as required to maintain construction activities and all temporary facilities at no extra cost to the Owner, if temporary electrical power supply is delayed or unavailable from the local authority.

Permanent utilities installed under this Contract may be used for construction requirements provided that no guarantees are affected thereby. Make good any damage.

Operate equipment according to the requirements of the Ontario Ministry of Labour under the Occupational Health and Safety Act and Regulations for Construction Projects.

Arrange, pay for and maintain temporary electrical power supply until Substantial Performance as follows:

- Temporary facilities for power, where required outside the plant, such as pole lines and underground cables with the approval of the local utility company.
- Connection to the existing power supply system in accordance with the Ontario Electrical Safety Code. Provide meters and switchgear as required by the utility company and the Engineer.
- Electrical power and lighting system as installed under this Contract may be used for construction requirements provided that no guarantees are affected thereby. Make good any damage and replace all lamps which have been used for three months or longer.

Pay the costs of temporary heat and ventilation used during construction, including costs of installation, fuel, operation, maintenance and removal of equipment. Do not use direct-fired heaters discharging waste products into work areas unless prior approval is given by the Engineer. Provide temporary heat and ventilation in enclosed areas, to:

- Facilitate progress of work.
- Provide ambient temperatures and humidity levels for storage, installation and curing of materials.
- Provide adequate ventilation to meet health regulations for safe working environment.
- Prevent hazardous accumulation of dust, fumes, mist, vapours or gases in areas occupied during construction.
- Prevent harmful accumulation of hazardous substances into the atmosphere of occupied areas.
- Ensure that the disposal of exhaust materials will not result in harmful exposure to persons or the environment.
- Ventilate storage spaces containing hazardous or volatile materials.
- Ventilate temporary sanitary facilities.
- Remove harmful elements even though the work process ceased.

## 52. **NOISE CONTROL**

Ensure that vehicles and equipment are provided with efficient muffling devices to minimize noise levels in the project area. Provide noise barriers as required to limit the noise level at site boundaries in accordance with local by-laws.

Establish and maintain site procedures consistent with the objective that noise levels from the construction area be minimized, and in accordance with local by-laws.



53. **EQUIPMENT MAINTENANCE AND REFUELING**

Undertake a detailed review of the construction site to plan access routes and fueling areas. Do not refuel or maintain equipment in, adjacent to or within 30 m of, watercourses. Establish suitable fueling and maintenance areas subject to the approval of the Engineer and restrict maintenance and fueling to these areas. Submit procedures for the interception and rapid clean up, and disposal and reporting of spillage that does occur to the Engineer for review prior to starting work.

Keep materials required for clean up of fuel spillages readily accessible on site.

Generators, cranes, backhoes or shovels may be fuelled at other than the designated fuelling areas. However, do not refuel equipment within 30 metres of any watercourse. This requirement may be relaxed at the discretion of the Engineer if no-spill fuelling facilities are used.

Store fuel in accordance with MOECC and other applicable guidelines/regulations.

Clean construction equipment prior to entering roadways.

Do not clean equipment in watercourses.

Do not clean equipment in locations where debris may gain access to sewers or watercourses.

54. **COMMISSIONING**

This section is to be read in conjunction with **Appendix D** – Procedure for the cleaning, testing, disinfection and connection of watermains. Where there are discrepancies, the County's procedure shall prevail.

Provide a commissioning plan, three (3) weeks prior to the start of commissioning for review by the Owner and Engineer. The commissioning plan is to contain the sequencing and scheduling of pressure testing, disinfection, bacteriological testing, and connections, complete with contingency plans, list of equipment and personnel required, the Owner and the Engineer's involvement. Specific details of which part of the watermain will be tested and/or connected, which parts will be shut down and the duration of the shutdown, and which parties need to be present.

Before starting, notify the Engineer, and ensure that isolating valves, etc., are properly adjusted to prevent inadvertent and/or improper operation. Also, observe proper precautions not to create excessive surges, water hammer, overflows, and vibrations to the detriment of the works.

Do not operate any valves on the live water distribution system. Only the County's Operation staff is permitted to operate the valves on the live system. Coordinate with the County in advance for the planning and operation of the live valves.

Before start-up, ensure that equipment, piping, conduits, etc., are properly cleaned, and all debris and foreign matter removed. Clean, brush, flush with water as required, to provide clean work.

Before operating the piping system, thoroughly flush with water and swab to remove construction debris and dirt from the system to the satisfaction of the Engineer. Be responsible for the

satisfactory disposal of water used in flushing in accordance with OPSS and Special Provisions requirements herein.

Ensure that chemicals provided for use in the water treatment process and materials contacting the water being treated meet both the American Water Works Association (AWWA) quality criteria as set out in AWWA standards and the American National Standards Institute (ANSI) safety criteria as set out in NSF/ANSI Standard 60: Drinking Water Treatment Chemicals-Health Effects and NSF/ANSI Standard 61: Drinking Water System Components Health Effects.

### **Pipe Pressure Testing**

The intent of these Specifications is to secure a watertight system. When testing plastic pipes adhere to the manufacturer's instructions.

Do not use compressed air or pressurized gas for testing of plastic pipes unless specifically recommended by the pipe manufacturer.

### **Gravity Sewers and Drains:**

- a) Conduct infiltration/exfiltration tests as directed by the Engineer on gravity sewers and pipes under this Contract. Provide necessary labour, tools and equipment necessary to carry out the infiltration/exfiltration tests. Ensure that the total infiltration/exfiltration does not exceed 30 litres/100 mm diameter/100 m of pipe/day. Make any repairs deemed necessary by the Engineer in order to reduce excess infiltration/exfiltration to the allowable limit.

### **Pressure Pipe:**

1. Conduct a pressure test on a new pipe. Pressure testing of water mains is to include hydrants. Isolate valves that have lower pressure rating than the test pressure. Agree with the Engineer in advance regarding the method of testing and locations for caps and bulkheads. The maximum length of a single pressure test is 365m of new water main.
2. Conduct pressure tests after the pipes have been flushed. For potable water lines disinfect after pressure testing. The test pressure for the new water main shall be 1103 kPa (150psi), measured at the highest elevation of the section of watermain.
3. Pressure test of different material should be conduct separately.
4. Leakage is defined as the quantity of water that must be supplied into the newly laid pipe to maintain the specified leakage test pressure after the air in the pipeline has been expelled and the pipe has been filled with water.
5. If any section under test discloses leakage in excess of the permissible amount specified, determine the cause and make required changes or repairs. Re-test that section, repeating the procedure until a satisfactory test result has been obtained. Carry out pressure tests before backfilling, in the presence of the Engineer. The Engineer will document the tests. Repair visible leaks regardless of the results of the pressure/leakage test specified.

6. Supply labor, pumps, taps, bulkheads, drains, air valves, connections, gauges, fittings and other appurtenances necessary to carry out the leakage tests.

**Pipe Disinfection:**

1. Disinfect piping systems, including valves, fittings and appurtenances, that carry potable water or water that will become potable, in accordance with the AWWA 651-05, Disinfection of Water Mains, referred to by the Safe Drinking Water Act, 2002, Procedure for Disinfection of Drinking Water in Ontario.
2. The standard also applies to existing mains opened by design or accident. Furnish required materials, labour, temporary connections, etc. Arrange for bacteriological testing after final flushing and pressure testing. Sampling for bacteriological testing shall be taken every 360m or less and at every dead end. Supply 19mm sample ports, complete with isolation valves, for sampling. If bacteriological testing shows incomplete disinfection, repeat the procedure.
3. Swabbing of short connection pieces (up to one pipe length) is permitted
4. Do not dispose of the disinfection water to streams or sewers until the total residual chlorine is reduced to 0.002 mg/L.

**Street Light and Crosswalk Overhead Sign Commissioning**

1. Conduct a test on the streetlights, confirming functionality of the light and the amount of lumens provided.
2. Conduct a test on the crosswalk overhead signal that it can be activated by the button, and that it remains functional for the period of time required by regulations

**Sanitary and Storm Sewer Testing and Commissioning**

1. Provide a commissioning plan, three (3) weeks prior to the start of commissioning for review by the Owner and Engineer. The commissioning plan is to contain the sequencing and scheduling of pressure testing, swabbing, CCTV, connections, complete with contingency plans, list of equipment and personnel required, the Owner and the Engineer's involvement. Specific details of which part will be shut down and the duration of the shutdown, and which parties need to be present.
2. CCTV the entire length of new sanitary and storm sewer/catch basin lead to confirm that there are no obstructions and/or major leaks
3. Swab the entire length of pipe and perform mandrel testing. Provide a plan on how the swab will be launched and where it will be retrieved. If it is into an existing MH or catch basin – provide a plan on how it will be retrieved in a 'live' sewer.

For the sanitary sewer testing and commissioning, the pricing of this item shall be included with Item P-01. For the stormwater management testing and commissioning, the pricing for this item shall be included in the catch basin lead item.

**Hydrant Flow Testing**

Perform hydrant flow testing at each new or reinstated hydrant within the project area to confirm available fire flows at the hydrant. This shall be performed under the presence of the Engineer, Owner and the County Fire Department, as required.

This item shall be paid under the Special Provisions Item 4.27 for hydrants. A 10% of the overall cost from the unit price item shall be used for the payment of the hydrant flow test.

## **55. WARRANTY**

The Warranty and Guarantee periods commence at Substantial Performance of the entire project unless otherwise agreed to by the Owner in writing.

Unless otherwise specified, provide a two (2) years warranty for all components of the work.

Promptly correct any defects during the Warranty Period.

Be responsible for all maintenance during the progress of the work up to the date of completion and rectification of deficiencies during the Warranty Period.

Submit the required guarantee/warranty certificates and/or written documentation as specified.

Repairs during Warranty Period:

1. Perform all repairs required upon receipt of verbal or written notices from Engineer.
2. Repair or make good settlements and defects on surfaces of backfilled trench or excavations.
3. Repair all damages to structures caused by settlement of ground adjacent to or over excavation.
4. All deficient work shall be rectified within two (2) months of receipt of the written deficiency report from the Engineer. If the Contractor fails to repair all noted deficiencies to the Engineer's satisfaction within this time, the Owner shall have the right to have any and all outstanding repairs completed at the Contractor's expense.

## **56. AS-BUILT DRAWINGS**

Obtain from the Engineer two sets of white prints for As-Built drawing purposes.

Maintain project record drawings and record accurately on a daily basis, work constructed differently than shown on the Contract Documents. Record all changes in the work caused by site conditions, or originated by the Owner, the Engineer, the Contractor or a Sub-contractor and by addenda, supplemental drawings, site instructions, supplementary instructions, change orders, correspondence and directions of regulatory authorities.

Record the following information:

1. Depths of various elements of foundations and piping in relation to the established survey datum.
2. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface features.
3. Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure. Do not conceal critical work until its location has been recorded.
4. Location of buried, abandoned infrastructure, capped watermains
5. Field changes of dimension and detail.
6. Location of access panels for valves, controls, cleanouts, etc.
7. Changes made by Change Order or Field Order.

Make available to the Engineer the up-to-date record drawings identifying changes as described above for review as requested.

Update these drawings and submit monthly together with progress payment claims. Drawings not maintained up-to-date will delay progress payments.

Complete the record drawings and submit them to the Engineer and Owner prior to issuance of the Substantial Performance Certificate. Modify the record drawings if necessary, and submit the final record drawings to the Engineer and Owner prior to the issuance of the Total Performance Certificate.

At the completion of the project and in advance of final inspection, neatly transfer as-constructed notations to the second set of white prints and submit both sets to the Engineer.

#### **57. HALF-LOAD RESTRICTIONS**

Refer to County of Prince Edward By-Law No. 2406-2009 regarding the reduced load period.

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### WORK SPECIFICATION DETAILS

#### SECTION 1 – GENERAL ITEMS

##### ITEM No. 1.01 - INSURANCE AND BONDING

Payment will be on a monthly basis, pro-rated by the Contract Duration. Payment at the Contract lump sum price shall be full compensation.

##### ITEM No. 1.02 - MOBILIZATION AND DEMOBILIZATION

This item is to cover for the general items related to the general contractor (and/or their subcontractors') mobilizing and demobilizing to/from the entire project site, and includes mobilizing and demobilizing to various parts of the project area.

Supply and install temporary snow fence to define Contractor's working area.

Provide security protection for Contractor's office, new construction, equipment and stored materials.

Move onto site and set up Contractor's office, storage facilities, and plant including sanitary facilities, temporary fencing, hydro and telephone.

Contractor's field office and storage facilities shall be located within a compound indicated on the Contract Drawings. Provide and properly maintain in clean condition, a suitable privy or water closet for the Contractor's personnel as required by the Occupational Health and Safety Act and Regulations for Construction Projects. Provide all required toilet supplies. Provide and maintain drinking water and washing facilities as required by the Occupational Health and Safety Act and Regulations for Construction Projects. Provide shelter for workers.

Provide necessary access to the project including haul roads as required and restoration of surfaces to original condition after haul roads are removed. No additional payment will be made for the maintenance and restoration of haul roads.

Move off site and remove Contractor's office, storage facilities and plant, and leave site clean and tidy. Leave clean and in good order, roads, parking areas, walks, sodded, seeded and other areas disturbed by the construction. Failure to make satisfactory progress in the execution of this work within forty-eight (48) hours of receipt of written notice from the Engineer may result in the Engineer having the surplus material removed, or re-grading any area or performing any work necessary to leave the site in a satisfactory condition and having the costs deducted from payments due under the Contract.

### **Location and Storage of Materials and Equipment**

Outside of road closure areas, Materials shall not be stored within 4 m of the traveled portion of any roadway except in the medians (if any) where the minimum clearance required is 2.5 m. Equipment shall not be stored within 4m of the traveled portion of any roadway or parked on private property unless prior written approval of County has been submitted to the Contract Administrator.

Notwithstanding the foregoing, the Contractor shall, at the Contractor's expense, remove any equipment or material, which, in the opinion of the Contract Administrator, constitutes a traffic hazard.

Storage areas are defined on the Contract Drawings, or as designated by the Engineer.

Store materials to ensure the preservation of their quality and fitness for the work. Store materials on wooden platforms or other hard, clean surfaces a minimum of 150 mm off the ground. Handle and store products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions.

For materials and equipment not suitable for storage in the open, provide weather tight heated storage sheds with raised floors, a minimum of 150 mm off the ground for the storage of equipment, as required by the Engineer and/or equipment manufacturers. Supply to the Engineer all storage instructions from equipment suppliers well in advance of the scheduled delivery dates.

Store packaged or bundled products in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in the work.

Store products subject to damage from weather in weatherproof enclosures.

Store cementitious products clear of earth or concrete floors, and away from walls. Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

Store sheet materials, lumber, etc. on flat, solid supports and keep clear of ground. Slope to shed moisture.

Store and mix paints in a heated and ventilated room. Remove oily rags and other combustible debris from the site daily. Take every precaution necessary to prevent spontaneous combustion.

Remove and replace damaged products to the satisfaction of the Engineer.

Do not use private property for storage purposes without the written permission of the property owner. Pay rental charges and damages associated with occupying private lands.

### **Payment**

Ensure that the price entered in the Form of Tender for this item is consistent with the costs involved but does not, in any event, exceed ten percent (10%) of the tendered price.

The following governs payment for Mobilization/Demobilization:

1. Sixty percent (60%) upon commencement of construction, i.e. full mobilization. Include the claim for mobilization in the first payment claim issued for the Contract subject to the Engineer being satisfied that the full mobilization has taken place. If the Engineer is not so satisfied, he shall allow a payment which, in his opinion, reflects the degree of mobilization effected to date
2. Remaining forty percent 40% to be paid progressively from Substantial Performance to full demobilization.

### **ITEM No. 1.03 - TRAFFIC CONTROL**

During the entire construction period, the Contractor is required to comply with the Ontario Occupational Health and Safety Act (OHSA) and all amendments thereto and further shall make reference to and explicitly follow the requirements of the latest version of the Ontario Traffic Manual – Temporary Conditions – Book 7.

During the performance of the work, it shall be the Contractor's responsibility to protect the safety and convenience of the traveling public.

All items under this section will be paid under Special Provisions Item 1.03.

Payment on a lump sum basis for the above work shall be full compensation for all equipment, labor and material to complete the work.

### **Traffic Control and Detour Plan**

**Two (2) weeks prior to commencement of construction activities, the Contractor shall submit a Construction Staging and Traffic Control Plan and Detour Plan to the County and the Engineer for work within the Contract to the Contract Administrator for review and approval at a scale of 1:500.** Include both a narrative description of the proposed construction staging sequence and a neat, dimensioned drawing showing typical layout of traffic control measures in each stage of the work and how the Contractor intends to maintain traffic as specified in the Contract Documents provide specific references to appropriate typical layouts in OTM Book 7. Traffic control plan shall consider the movement of both vehicular and pedestrian traffic and the impacts on abutting properties and businesses. Ensure that properties with more than one entrance shall have a minimum of one entrance maintained at all times.



Construction cannot begin without an approved plan. The traffic control plan and detour plan should include, but is not limited to the following items:

- Complete construction schedule.
- Start and finish dates and times of the particular phase of the work.
- Status of road – full road closure? Lane restriction with local access only?
- Street location of the work phase including cross street limits.
- Timing of the work: Day work, night work or weekend work.
- Protection plan for site during non-working hours.
- Flag person and paid duty police requirements.
- Construction signage supply and placement meeting the Ontario Traffic Manual - Temporary Conditions - Book 7. Signs are to be maintained on an ongoing basis throughout construction. The wording on the signs is to be provided by the County. Other special signs may be required by the County as determined at the Traffic Control site meeting.
- Construction barricade placement meeting the Ontario Traffic Manual -Temporary Conditions - Book 7.
- All temporary line and arrow painting for traffic delineation and its removal (minimum lane width 3.3 m).
- Allowance for pedestrian crosswalks and sidewalks
- Method to maintain accessibility for pedestrians and vehicles – i.e. temporary asphalt ramps for pedestrians, gravel ramps for driveways, etc.
- Along with vehicular and pedestrian traffic diversion and safety, the Contractor shall take into account (but not limited to), open excavations, dust control, flying debris, poor visibility, weather conditions, overhead hazards, slippery surfaces, uneven surfaces, moving parts, equipment and material storage, equipment clearance, parked vehicles, day or night work, noise, sharp objects.

At no time during the course of construction will the Contractor be permitted to close the road to access except for the area indicated for full road closure in Appendix C, and/or unless authorized in writing by the Contract Administrator. A minimum of one lane shall be kept open at all times unless authorization in writing, signed by the Contract Administrator, has been received by the Contractor. Clear detour signs must be installed and maintained throughout the construction duration when route detours are required. All lane closures shall be set up in accordance with MTO's "Ontario Traffic Manual Book 7".

Construction within intersections will only be allowed between 9:30 a.m. and 3:30 p.m. Monday to Friday, unless otherwise reviewed and approved by the County and the Engineer. All night work must be approved by the County and Engineer **one week** in advance of the work being carried out and is to comply with the County noise bylaw of noise not to exceed 60dB before 7:00.am. and after 11:00 p.m. Refer to Appendix E or the County website for noise bylaws.

Construction within 30 m of any signalized intersection requires paid duty police officer(s).

The Contractor shall provide written notification to homeowners at least 48 hours in advance of partially blocking and/or closing their driveways or elimination of on-street parking for any construction purposes.

### **Installation and Removal of Detours**

Where the Contractor wishes to construct, at specific locations, detours where none are called for in the Contract, and if the Contract Administrator approves the installation of such detours, the installation, and if required, the subsequent removal, will be carried out at the Contractor's expense.

Removal will be carried out as directed and at the discretion of the Contract Administrator and shall consist of the disposal, leveling and trimming of the excavated material and such restorative measures as may be required. Such detours shall be constructed with granular base courses consisting of minimum depths of 150 mm of granular base and 150 mm of Granular 'A' compacted to dry densities of 100% of the maximum dry densities. Where detours are not called for in the Contract, a reduction in the width or in the number of traffic lanes will be permitted only when specified in the Contract Documents or when in the opinion of the Contract Administrator, no danger or inconvenience to the public will result from such reduction.

Where the Contractor has installed detours which are not called for in the Contract and where labour, equipment and material are required to effect repairs to such detours due to failure of the roadbed, such Work will not be considered as normal maintenance but as part of the cost of construction, and all such Work will be at the Contractor's expense.

### **Maintenance of Road for Through Traffic**

Access for emergency vehicles, County Operation Staff and other critical vehicles is to be maintained at all times, even for full road closure areas - the Contractor shall provide a plan detailing how these services are to be provided for the County's approval. Access to all properties must be maintained throughout construction, even for full road closure areas.

Lane reductions will be required to complete the work. To the greatest extent possible vehicle lanes shall be kept open during construction.

No extra compensation shall be paid to the Contractor under this Contract due to lane reduction and traffic control limitations required by the County.

The Contractor is advised that as other Work may be in progress within and adjacent to the limits of this Contract, and as such, shall co-operate with the County, other contractors and utility companies and they shall be allowed free access to their Work at all times.

The Contract Administrator reserves the right to alter the method of operations on this Contract to avoid interference with other Work. No claims for delays and/or extra Work will be considered by the County, where proper co-ordination and co-operation between other contractors or utility companies could have minimized or eliminated such occurrence.

### **Maintenance of Traffic, Detours and Signage**

The Contractor will be responsible for providing, maintaining and relocating where necessary, traffic control signage (as per the OTM), delineators, barricades, light flashes, cones etc. and providing such flagmen and/or policemen as are required so that motorists and pedestrians are properly directed to ensure safety. This includes temporarily removing and reinstating the permanent traffic signage after the Work is completed. Flagging procedures shall conform to the recommendations of the Construction Safety Association of Ontario.

Temporary concrete barriers, construction fence, flashing beacons, and temporary traffic control devices shall be installed and maintained to the satisfaction of the Contract Administrator during all shutdown times including evenings and weekends where an excavation is left open.

Outside of road closure areas, the Contractor shall schedule the Work so that there will be no open excavation adjacent to a lane carrying traffic overnight and on non-working days except where a traffic barrier designed to restrain errant vehicles is located between the traffic and the excavation.

Excavations within 4 m of lanes carrying traffic shall be backfilled with the specified material up to profile grade and compacted prior to closing down operations each day.

Signs indicating "Raised Manholes and Rough Surface" must be set up when conditions warrant and remain up until top course asphalt is placed.

Contractor is to schedule their work accordingly. Should the contractor propose to conduct the work at a different timing, contractor is to submit request and obtain approval from the County.

The Contractor is to co-ordinate and notify all emergency services of the timing and duration of the road closure on Church St and Old Church St. Should there be any delays to reopening the intersection, it is the responsibility of the contractor to provide an update to all emergency services.

Maintaining access to all properties and their parking areas may involve constructing temporary entrances, temporary ramping, blocking only one driveway at a time, or carrying out such Work as may be required to provide the minimum amount of disruption.

The Contractor may be permitted to temporarily block normal vehicular access to the properties and respective parking areas, as approved, if the Contractor can either provide alternative or limited access which is acceptable to the respective property owners. All such arrangements and provisions must be approved by the Contract Administrator in writing.

All pedestrian traffic within the Contract limits must be maintained at all times during construction. The Contractor shall supply and place ramps to provide access for pedestrians to houses, and other locations as required, if normal access has been blocked as a result of construction.

### **Traffic Control - Flagging**

Flagging for traffic control on this Contract shall be in conformance with the conditions and procedures outlined in Ontario Traffic Manual Book 7 issued by the Ministry of Transportation of Ontario.

Each flagman shall, while controlling traffic, wear an approved fluorescent blaze orange or fluorescent red safety vest, an approved fluorescent blaze orange or fluorescent red armband on each arm and an approved fluorescent blaze orange or fluorescent red hat.

No extra compensation shall be paid to the Contractor under this Contract for performing Work in accordance with the requirements described under the heading "Traffic Control – Flagging" and it is understood that the implementation of traffic controls will require ongoing review and adjustment to suit construction operations.

### **Restriction on the Use of Construction Equipment and Unlicensed Vehicles**

Outside of road closure areas, unlicensed vehicles and construction equipment, with the exception of rock trucks, shall not travel, work or stop within 4 m of a lane carrying traffic except where construction operations necessitate the working area be less than 4 m from the traffic in which case, the Contractor shall erect delineators along the edge of the travelled lane, in accordance with paragraph 01 of subsection GC7.06, Maintaining Roadways and Detours, of the OPS General Conditions of Contract. In no case shall the distance between traffic and working area be less than 1.5 m.

### **Delivery and Trucking**

The Contractor shall plan and schedule the routes of vehicles transporting all materials to, from or within the job, so that vehicular movements are accomplished with minimum interference and interruptions to traffic in accordance with the restrictions on construction operations and the permitted time for closures. This will necessitate vehicles to "slip-off" or "slip-on" in the direction of traffic, in order to merge with and thereby avoid crossing traffic lanes.

The Contractor shall obtain the Contract Administrator's prior approval for the location of any "slip-off" or "slip-ons". The Contract Administrator reserves the right to alter, reject or close same as considered necessary. The Contractor shall notify suppliers of materials and equipment of the above requirements.

### **Special consideration shall be taken by the Contractor to accommodate pedestrians/residents.**

Special attention must be given to ensure that the safety of pedestrians, students, and residents with special needs is not jeopardized in any way during construction operations. The Contractor shall make arrangements as required by the County for the safe, full-time access and passage of all pedestrians, students, and residents with special needs, during all construction work.

Where the public has access to the perimeter of an excavation even within road closure areas, install a barrier at least 1.1 m high around the complete perimeter of the excavation. Vertical supports must be from the top of the wall of the excavation. The barrier shall include a fencing fabric, with openings not exceeding 100 mm, securely attached to the vertical supports at the top, center and bottom and spacing not exceeding 100 mm. If the excavation is greater than 0.3 m in depth, install toe board with the fencing fabric securely fastened to it to prevent persons from slipping under the fabric and into the excavation. If an excavation is adjacent to a sidewalk or an area commonly used by the public as a walkway or recreation area, the fencing fabric shall be a metal mesh. Also refer to Item 1.10 for the temporary safety fence on County Road 22.

Where an excavation is greater than 1.0 m in depth, and the public has access to the perimeter, signs shall be posted indicating "Danger Due to Excavation".

Ensure barriers are in good condition and stable prior to vacating the project at the end of each work day.

Advanced detour signs for detouring through traffic movements around the construction site will be supplied, erected, and maintained by the Contractor as directed by the Contract

Administrator. All detour signs, delineators, barricades, lights, temporary snow-fence, sandbags, etc., shall be supplied, erected, and maintained by the Contractor for the duration of his operations under this Contract. The Contractor shall completely enclose, using snow fence and lights, all open excavations at the end of each day's operation. The Contractor shall also erect suitable barricades, signs, snow fence etc. along traveled traffic (pedestrian or vehicular) lanes if construction is proceeding adjacent to the traveled lanes. The Contractor will be required to supply and install signs at the limits of the Contract indicating the proposed date of commencement of construction, expected duration and contact numbers. The signs shall be erected a minimum of 48 hours in advance of the commencement of construction.

No extra compensation shall be paid to the Contractor under this Contract for equipment, labour and material to complete the work in accordance with the requirements described under the heading "Maintenance of Traffic, Detours and Signage" and it is understood that the implementation of traffic controls will require ongoing review and adjustment to suit construction operations.

#### **ITEM No. 1.04 – PROJECT AND FUNDING SIGNAGE**

Provide project signboard(s) as per below and install within two (2) weeks of signing the Contract, the project sign boards in locations designated by the Engineer.

1. Construction sign – provide and install one (1) 1.2 m x 2.4 m sign, of wood frame and minimum 20 mm plywood construction painted with exhibit lettering produced by a professional sign painter, with the following information:
  - a. The name of Owner.
  - b. Logo of the Owner in colour.
  - c. Project Name and other information of a design style established by the Owner.
2. Provide and install one (1) Funding Sign for the Ontario Clean Water and Wastewater Fund, as per the Infrastructure Canada guidelines. Refer to the following link:

<https://www.infrastructure.gc.ca/pub/signage-panneaux/guidelines-lignesdirectrices-02-eng.html>

Measurement shall be lump sum for the total number of signage required.

Provide other warning sign boards as necessary during the construction period, included in the traffic control item.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 1.05 – PROJECT MEETINGS**

Attend pre-construction meeting and progress meetings as required by the Engineer. Such meetings to be held on a bi-weekly basis, unless deemed otherwise by the Engineer. Ensure the attendance of responsible persons, including the site superintendent, who have the required authority to commit the Contractor in carrying out decisions reached at the meeting.

Subcontractors, equipment suppliers, HDD contractor and others must attend when requested by the Engineer.

Provide an updated schedule of work indicating progress, use of site, temporary facilities, and schedule of shutdowns at each progress meeting.

This item shall be paid out on a unit price basis.

#### **ITEM No. 1.06 – PRECONSTRUCTION BUILDING SURVEY**

Prior to construction, undertake an inspection of all properties and structures in or within 20 meters of the proposed work that may be affected by the work. The survey shall include, but not limited to, the locations and conditions of existing properties, buildings, underground structures, utility services and structures such as walls abutting the site. Have the pre-construction inspection documented in writing, in photographs and videos as appropriate, noting existing damage, surface finish conditions of structures and cracks.

Provide to the Engineer, in accordance with the specified procedure for Submittals, copies of a report documenting the preconstruction inspection, including photographs, no later than two (2) weeks after the inspection.

Ensure that the inspection report is sufficiently detailed that existing damage, cracks and surface finish conditions are described in the text of the report. Cross-reference the text in the survey report to specific photographic images noting the features depicted in each image. Do not submit only a set of photographic images without a clear text description.

Indicate the location of each photograph on a copy of the Drawings so that the subject of each photograph may be located accurately by others later.

Measurement shall be lump sum.

Payment for this item shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract

#### **ITEM No. 1.07 – POST CONSTRUCTION SURVEY**

Following construction and prior to substantial performance, undertake an inspection of buildings and infrastructure involved in or in the vicinity of the proposed work. Have the post-construction inspection documented in writing, in photographs and videos as appropriate, noting damage, surface finish conditions of structures and cracks including the date.

At a minimum, ensure that the buildings and infrastructure inspected during the Pre-Construction Survey are included within the scope of the Post-Construction Survey.

Provide to the Engineer, in accordance with the specified procedure for Submittals, copies of a post-construction inspection report documenting the pre-construction inspection, including photographs, no later than two (2) weeks after the inspection.

Ensure that the inspection report is sufficiently detailed that existing damage, cracks and surface finish conditions are described in the text of the report. Cross-reference the text in the survey report to specific photographic images noting the features depicted in each image. Do not submit only a set of photographic images without a clear text description.

Indicate the location of each photograph on a copy of the Drawings so that the subject of each photograph may be located accurately by others later.

Be responsible for repairing damage to buildings and infrastructure caused by the work.

Coordinate the locations of the photographs to coincide with the photographic images obtained during the Pre-Construction Condition Survey so that an assessment may be made of damage resulting from construction activities.

Measurement shall be lump sum.

Payment for this item shall be at the contract unit price.

The Contractor shall note that a "Notice to Residents" will be prepared by the County advising of the pre-construction and post construction survey. These notices shall be hand delivered by the Contractor to all affected residents and owners.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract

#### **ITEM No. 1.08 – TEMPORARY SAFETY FENCE ON COUNTY ROAD 22**

The contractor shall supply, install, maintain, and remove upon completion of the project a metal safety fence on County Road 22 as shown on the drawings and/or as directed by the Engineer.

The steel wire fence panels shall include supports to hold the panels in place. The fence panels shall be joined by bolted clamps and securely hold the fence in place.

The fence shall be installed at the beginning of the project and removed upon completion of the project. The fence shall be designed to separate the public from the work area. The location of the fence installation should be first reviewed by the County and installation should begin upon approval from the County.

Measurement for the safety fence shall be per meter length in place.

Payment shall be at the contract unit price given in the Form of Tender.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

Partial payment for this work shall be on a pro-rated basis as follows:

- 40% - Supply and installation;
- 40% - Maintenance (pro-rated on the progress of the work); and
- 20% - Removal

### **ITEM No. 1.09 – FENCE REMOVAL AND REINSTATEMENT**

Reference: OPSS 510, OPSS 772

The contract will be required to provide all labour, materials, and equipment necessary for the chain link fence removal and reinstatement for the existing Picton Heights Reservoir (244 County Road 22, Picton), where construction activities require the temporary removal of the fence. Where the fence has been temporarily removed, provide alternate construction fencing around the area to provide security of the water facility site.

Measurement shall be by length in metres along the contour of the ground for the actual length of fence reinstated and shall include gate opening.

Payment for this item shall be at the contract unit price including removal, reinstatement and all incidentals such as removal of any debris and correction of any minor ground elevation problems.

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

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 1.10 – GARBAGE COLLECTION**

The Contractor will be responsible to ensure that garbage collection, including recyclable and compostable materials, from each home is maintained throughout the duration of the Contract and where necessary (for e.g. when the street is closed) the Contractor shall make arrangements with the collecting agency to coordinate the pick-up.

Payment for this item shall be at the lump sum price paid out on a prorated basis throughout the project.

### **ITEM No. 1.11 – DEWATERING**



Reference: OPSS 517, 518

**Scope of work:** All water that enters and /or leaves the construction site, either naturally or artificially (i.e. initiated as a result of construction activity) will be controlled such that all applicable environmental regulations are met. In controlling water on the construction site that intent is to maintain stable sub-grades and permit the work to be conducted under dry and stable ground conditions.

The scope of water control includes collection, treatment and disposal of water before it discharged from the construction site and generally includes design, delivery, installation, maintenance, operation, monitoring and removal of temporary systems to provide dewatering of the tunnel, shafts, and trenches in accordance with these specifications and requirements of applicable environmental regulations.

Equipment and Materials:

- Unless otherwise specified, the Contractor shall supply all materials necessary to complete the work. A complete job is required, therefore, any labour, material, equipment, tool or incidental items not specifically mentioned but necessary for completeness will be considered and no separate or additional payment will be made.
- Provide Equipment and materials for dewatering and construction water treatment that are necessary to purge water from the shafts and to achieve the specified treatment results.
- Maintain equipment in good repair and operating order.
- Arrange for standby equipment and materials where required. Provide backup power to provide continuous groundwater control and treatment in the event of power failure.

Payment at the Contract price for the above item shall be full compensation for all Labour, Equipment and Material to complete the work.

Dewatering System

Contractor shall submit a Construction Water Control and Construction Water Treatment Plan to the Engineer for approval a minimum of 30 days prior to commencement of any construction water control operations. The Plan shall include the following information as a minimum:

- Description of the experience for the firm designing the dewatering and treatment system for the Contractor;
- Description of the extent and characteristics of water-bearing layers subject to ground water control based on available geotechnical information and Contractor's own investigations;
- Details of the water treatment provisions to remove sediments and other contaminants prior to discharge. Submit calculations detailing the treatment system detention times. Include the required reaction time for sedimentation for each applied chemical or polymer dosage.
- Testing method that will be used to demonstrate water has been treated in accordance with this Specification prior to discharge. Confirm method and location of discharge for approval.

- Proposed methods and locations for disposal of removed water in accordance with the Drawings and Specifications.
- Planned methods, equipment and operations for removing water infiltration in open excavations, shafts, trenches and tunnels;
- Submit details of methods and equipment to be used to measure the volume of construction water discharged from treatment facilities.
- Description of how the Contractor will handle flows, should the maximum flows described in the GBR occur
- Detailed drawings indicating all surface water control measures including means and methods of disposal.

Performance Requirements:

Dewatering System:

- The Geotechnical Report (GR) describes the groundwater conditions that the Contractor should expect for the shafts and watermain during construction. The volumes and flows discussed in the GR do not include water from surface run-off. The Contractor shall allow for these flows and be prepared to remove water and/or prevent water from entering open excavations and shafts.
- Install, operate, and maintain the groundwater control system in a manner compatible with construction methods and site conditions. Notify the Engineer in writing of any changes made to accommodate field conditions and changes to the Work.
- Provide drainage of seepage water and surface water in shafts and tunnels as well as water from any other source entering the excavations. Excavation drainage may include placement of drainage materials, such as crushed stone, together with sump pumping. Size sumps and pumps in the shafts for expected infiltration levels.
- Provide additional ground water control installations, or change the methods, if the installations do not achieve satisfactory results.
- Intercept surface water and divert it away from excavations through the use of dikes, ditches, drains, pipes, sumps, or other methods as required. This includes temporary works required to protect adjoining properties from surface drainage caused by construction operations. Provide positive measures to prevent erosion, piping of fines, or flooding at the shafts.
- Furnish, install, operate, and maintain temporary drainage facilities of adequate size and capacity, with standby pumps and emergency backup power for emergency use, to collect and dispose of water that enters the tunnel.

EASR Registration and Requirements:

The General Contractor is responsible for registering in the EASR and following the EASR regulations for dewatering in the project site. This includes abiding by all of the EASR registry requirements including formulation of water taking plan, water monitoring program, reporting, recording and entering daily water takings. Should the dewatering rate exceed the allowed EASR limit of 400,000L/day, the Owner has the right to request the General Contractor to submit for the Permit To Take Water (PTTW) application at additional cost.

Monitoring and Maintenance:

- Conduct daily maintenance and observation of the construction water control system. Initiate more frequent observations as required.
- Replace inoperable or damaged system components as necessary to maintain operation.
- Keep piping accessible for observation. Allow means for Contract Administrator to verify water turbidity / total suspended solids levels and to obtain samples for chemical testing.
- The Contractor shall accurately measure the pumping rates and provide daily data in weekly reports in accordance with O. Reg. 387/04 "Water Taking", including:
  - dates and times of water takings;
  - rates of pumping; and
  - total amounts of water pumped per day for each day
- Failure to provide the above-noted documentation, including daily turbidity readings, will result in a 10% holdback penalty on subsequent Payment Certificates until the information is received.

Treatment and Disposal:

- Prior to disposal of any water from the work areas, the Contractor shall provide treatment as necessary to remove sediments, oil, grease, and other contaminants in accordance with the Specifications.
- Do not pump or drain water containing deleterious materials into waterways and sewers. Intercept concentrated run-off from unstabilized areas and divert to a temporary ditch or other stabilized areas under sheet flow conditions. Pump water from excavations to an "upstream" location on the temporary ditch, to allow maximum settling and filtration prior to discharging to a natural watercourse.
- Dispose of water/groundwater pumped from the excavations in accordance with the recommendations outlined in the Geotechnical report included in the Contract Documents and in accordance with the Environmental Assessment and Sector Registry (EASR) Water Taking Report and Discharge Plan.

Dewatering will be paid as a LUMP SUM ITEM, payment shall be made based on the percentage of the shaft work and watermain installation work completed. Percentage of work completed has

to be agreed between the contractor and the contract administrator. Payment at the Contract Price shall be full compensation for all labour, equipment and material to complete the work.

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**WORK SPECIFICATION DETAILS**

**SECTION 2 – SITE PREPARATION, GRADING, AND REMOVALS**

**ITEM No. 2.01 – CLEARING, GRUBBING, AND TREE PROTECTION**

Reference: OPSS 201, OPSS 510, OPSS 543, OPSS.MUNI 206

The contract will be required to provide all labour, materials, and equipment necessary for the grubbing

The Contractor is responsible for clearing, grubbing as shown on the drawing. Road signs shall be removed, salvaged and re-erected in accordance with OPSS 543. Removal, salvaging and re-erection of all other items that are identified on the Contract Drawings will not be paid separately under any removal's items.

The Contractor is responsible for the removal of the existing stumps and root system of trees that have been cut down along County Road 22 and Old Church Street, prior to this Contract. The Contractor is to fill the area with native fill and 150mm of top soil. At locations where the future sidewalk to be located above existing stumps/root system, native fill should be compacted to 98% SPD

Provide suitable tree protection for all remaining trees that are close to the work area and are not to be removed. Isolate trees from the construction area with protective snow fence erected along the tree drip line. Do not pile excavated material around the base of existing trees. Repair any limbs removed or any scars caused by machinery and paint with reviewed dressings. The

Contractor shall take care when excavating in the vicinity of existing trees. Roots are to be pruned by a certified arborist using a sharp pruning tool.

Of special note are the **three (3) Butternut trees** by the seasonal creek on Church St. Special effort to protect and work around these trees are required. If any trees are damaged during the work, the Contractor will have to replace the damaged tree in compliance with the MNRF requirements.

A designated area has been identified on contract drawings for stock piling/laydown, contractor shall include cost to clear & grub the area, as required, for their use/need. Contractor to remove all debris from piling/laydown area upon completion of project, Payment for this item shall be at the lump sum price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

## **ITEM No. 2.02 – ROAD EXCAVATION AND EARTH GRADING**

Reference: OPSS.MUNI 206 and OPSS 501, 510

This item shall include removal and disposal of all materials necessary for construction of the earth subgrade to the specified profile and cross-sections, including salvaging of usable material as directed by the Contract Administrator, control of surface water and groundwater, trimming of tree roots, support of utilities and municipal services, and disposal of unsuitable materials off the site.

Excavated material including existing municipal road granular material does not contain asphalt and shall be used as fill material.

**Stockpiling is allowed for this project at specific areas identified on contract drawings, it is the Contractor's responsibility to remove all excess stockpile material off site upon completion of the project. No separate payment will be made for extra handling.**

The subgrade shall be proof-rolled in the presence of the County's Quality Assurance/Material Testing Subconsultant prior to placement of granular materials.

The excavation of private entrances beyond the property line shall be deemed as incidental to the work for which no extra payment shall be made. The tender quantity does not include excavation for private entrances.

All trees impacted by the road reconstruction shall be protected with tree protection fencing. The Contractor shall take care when excavating in the vicinity of existing trees.

Should the Contractor, unless ordered by the Contract Administrator, excavate below grade, he/she shall be required to backfill such excavations with suitable approved materials and compact it in 150 mm layers or less, for which no payment will be made for obtaining, hauling,

handling, placing or compaction of such backfill material. All fill areas shall be stripped of topsoil unless indicated otherwise on the contract drawings.

In accordance with OPSS 206.07.09 – Quality Control, the Contractor is responsible for carrying out all quality control grade checks to ensure that horizontal and vertical grading tolerances as specified in the Contract Documents are met on all finished earth and rock grade surfaces. Submission of all Contractor grade checks shall be in accordance with OPSS 206.07.09.02.

The Engineer's on-site personnel may conduct random quality assurance (QA) grade checks. When requested, the Contractor shall provide a person to assist the Engineer's on-site personnel in checking the grade at no additional cost to the Contract.

Cross-sections for grade checking will be taken at predetermined, regular intervals.

If the Contractor believes that a cross-section is in error, the Contractor shall advise the Contract Administrator who will re-section the area in question. If the Contractor believes such an error has been made, the Contractor must bring it to the attention of the Contract Administrator in sufficient time to permit the Contract Administrator's on-site personnel to take cross-sections before the next operation begins, otherwise no additional payment will be considered.

Excavation additions or deletion (Adjusted Plan Quantity), where and if necessary, shall be calculated from the field tape measurements/elevations agreed to by the Contract Administrator and the Contractor and the Plan Quantity adjusted accordingly.

No quantities have been or will be included for payment for any cut in boulevards for placement of topsoil and sod, and for the placement of sidewalk. The Contractor shall make allowance for this Work in the appropriate Contract prices.

Unless specified otherwise, all surplus or unsuitable excavated materials become the property of the Contractor, and accordingly shall be disposed of off-site.

If excavation is carried out beyond the design slopes, without the approval of the Contract Administrator, no payment will be made for the additional excavation.

The Contractor shall perform all excavation operations in such a manner as to avoid ponding of water or the saturation by flooding of embankment materials. The Contractor shall take precaution in wet conditions and provide temporary drainage systems. No separate payment will be made for pumping, installation of temporary storm sewers, etc.

Roadway sub-grades shall be maintained to the grades, tolerances and specified density until the surfaces are covered with granular materials. Any marks, ruts or indentations in the subgrade caused by vehicles, equipment or any other cause shall be removed prior to placing granular materials at no additional cost to the Owner. Damaged sub-grade materials shall be excavated and removed to a firmer sub-grade level, acceptable to the Engineer and the excavated sub-grade materials disposed of and replaced with Granular B. The cost associated with the additional excavation, disposal and additional granular road base (in 150mm layers) shall be borne by the Contractor.

The unit price for this item shall include excavation of road, sidewalk, curb, subdrain, ditches, and earth grading, removal, and disposal offsite and all equipment, labour and material to complete the work and all excavation shall be measured in **cubic metres** as the difference between the original ground and the theoretical design cross-sections. The volume shall be calculated by the average end area method. Payment will be based on the theoretical quantity unless the design is changed during construction.

**ITEM No. 2.03 - SUPPLY, PLACE AND MAINTAIN TEMPORARY EROSION, SEDIMENT, AND SILT CONTROL MEASURES**

Reference: OPSS 506, OPSS 510, OPSS 805

Work under this item shall be completed in accordance with OPSS 506, OPSS 510 AND OPSS 805 and as amended herein.

Erosion and sediment control measures shall be incorporated in the work to ensure sediment discharge to storm sewers, watercourses and/or lands in or adjacent to the working area is minimized for the entire duration of the contract.

A 100m stand-by supply of prefabricated silt fence, in addition to silt fence/erosion control measures that are specified elsewhere in the Contract, shall be maintained at the Contract site prior to commencement of grading operations and throughout the duration of the Contract.

In general, silt fence should be placed all along the lower side of County Road #22, Church Street, and on Old Church Road, and at the two culverts inlet/outlet. Silt fencing shall be used to prevent water with silt from leaving the construction site.

A minimum of one check dam shall be placed every 15m along the length of the ditch and at all culvert locations in the work area and where water will leave the construction site such as at the end of the sidewalk on County Road 22.

In all areas, the Contractor shall, as a means of controlling erosion and runoff, so schedule his/her operations as to limit the areas of slope and ditches exposed and the time that such areas are exposed prior to final treatment.

Where cut or fill slopes have been rough graded, the Contractor shall within 15 calendar days of this operation, trim these slopes. Within a further 15 calendar days from the completion of trimming, the Contractor shall apply the specified vegetative cover material as required, and when so permitted, elsewhere in the contract.

In areas where excavated materials are stored temporarily the Contractor shall prevent erosion of any material into watercourses, sewer systems or onto private property.

**Prior to commencing any operations on the contract, the Contractor shall submit his proposed methods for controlling erosion and runoff to the Contract Administrator to the satisfaction of both the COUNTY and Quinte Conservation Authority.**

Run-off from construction materials and any stockpiles shall be contained and discharged so as to prevent entry of sediment to watercourses.



Where dewatering is required, dewatering effluent shall be discharged so as to prevent entry of sediment to watercourses. Do not operate construction equipment nearer than 10 m from water courses. Do not dump excavated material, waste material or debris in watercourses. Design and construct temporary crossings to minimize erosion to water courses.

The Contractor shall clean out all storm catch basin and maintenance hole sumps upon completion of the construction works.

Dust suppression is to be provided as part of this lump sum item. The work is to follow OPSS 506, except for the Construction Specification, which shall be amended as follows:

Subsection 506.07.01 of OPSS 506 is amended by the addition of the following;

The Contractor shall take such steps as may be necessary to prevent dust nuisance resulting from his operation either within the right-of-way or elsewhere or by public traffic where it is the Contractor's responsibility to maintain a road through the work.

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

The cost of all such preventative measures shall be borne by the Contractor including the application of **water and calcium chloride**, to the satisfaction of the Contract Administrator. No additional payment will be made for dust suppression.

Sweeping/cleaning of roads within the project site and adjacent to the project site that has been impacted by the construction activities shall be swept/cleaned at a minimum of once a week.

Payment at the contract price bid shall be full compensation for supplying all labour equipment and materials for the installation of temporary silt fencing, check dams, coffer dams, sediment traps/basin, for all excavation and disposal of related surplus material; for supplying and placing filter bags, sandbags, concrete barriers and rip rap etc. as required; for pumping water to sediment basin; for carrying out all maintenance; dust suppression; sweeping/cleaning of roadways on project site and adjacent to project site; for removal of temporary measures at completion of work and for all other works necessary to properly control the movement of sediment from excavations and disturbed areas.

Unless otherwise specified, supply, install and eventually remove the following in accordance with OPSS 805 and corresponding drawings:

For Silt Fence Barrier:

1. OPSD 219.130 – Heavy Duty Silt Fence Barrier
2. OPSD 219.130 – Silt Fence Flow Check
  - a) Use type “A” silt fence where line of silt fence is steeper than 1:7 or when adjacent slope is 1:3 or less.
  - b) Use type “B” silt fence where line of silt fence is steeper than 1:7 or when adjacent slope is steeper than 1:3.

- c) Use type "C" silt fence in frozen ground conditions. Construct cut-off swale/berm when ground thaws.

For Straw Bale Barriers:

1. OPSD 219.120 – Heavy Duty Straw Bale Barrier
2. OPSD 219.180 – Straw Bale Flow Check

For Excavated Sediment Trap:

1. OPSD 219.220 - Excavated Sediment Trap
2. OPSD 219.211- Temporary Rock Flow Check
3. Filter fabric TERRAFIX 270R or equivalent.

Prior to the commencement of clearing and grubbing, install siltation control fence system in the areas noted in the Contract Documents. The siltation fence shall be Dominion Textile (Envirofence) or approved equivalent.

Payment for this item of work shall be made on a lump sum basis as follows:

- 50% upon satisfactory installation
- 30% for maintenance
- 20% upon removal

Due to the location being on a rocky surface, during the work, any deficiencies for the erosion and sediment control measures identify by the County or approval agencies must be addressed immediately.

The payment for maintenance will be made upon satisfactory condition of the works and removal offsite any accumulated sediment at the time of payment.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 2.04 - ROAD EXCAVATION IN ROCK**

The contract will be required to provide all labour, materials, and equipment necessary for the road excavation in rock in order to establish the design subgrade.

The rock excavation shall be in accordance with OPSS 403

Road excavation in rock shall include excavation for the road, sidewalk, curb, ditching, and subdrains.

Measurement shall be per volume in **cubic metres**.

Payment for this item shall be at the contract unit price including removal and disposal offsite.

No payment shall be made for over excavation.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 2.05 - ROCK EXCAVATION WITHIN TRENCHES AND GRANULAR BACKFILL**

The contract will be required to provide all labour, materials, and equipment necessary for the trench rock excavation in order to establish subgrade prior to pipe laying.

The trench rock excavation shall be in accordance with OPSS 403 and OPSS 120.

Backfill for over excavation of trench restoration for this item shall be Granular B.

Measurement shall be per volume in **cubic metres**.

Payment for this item shall be at the contract unit price including trench restoration with Granular B, removal and disposal **offsite** of excavated materials.

No payment shall be made for over excavation.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 2.06 - EXCAVATION, REMOVAL, AND DISPOSAL OF ASPHALT – FULL DEPTH**

Reference: OPSS 510 and OPSS MUNI 206

The work of this item includes saw-cutting, excavating, breaking, loading, haulage, and disposal of all bituminous pavement material (**all thicknesses**) and sidewalk exposed and encountered during the Work. Evidence of backfilling of trenches with broken pavement/concrete or containing broken concrete or boulders will result in non-payment for the removal item and non-payment for the pipe installation. In no case shall broken concrete (or boulders) be left in excavations for any reason whatsoever. The contract will be required to provide all labour, materials, and equipment necessary for the removal of asphalt at full depth. Refer to the Geotechnical reports in Appendix B for the auger probes and boreholes for estimated depths.

The asphalt removal shall be in accordance with OPSS 510.

Measurement shall be per area in **square metres**.

Payment for this item shall be at the contract unit price including excavation, removal and disposal **offsite**.

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

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 2.07 - ASPHALT REMOVAL – PARTIAL DEPTH (50mm)**

Reference: OPSS 510

The contract will be required to provide all labour, materials, and equipment necessary for the removal of asphalt at partial depth of 50mm.

The asphalt removal shall be in accordance with OPSS 510. Removal of the temporary asphalt ramps used to match elevations of adjacent vertical surfaces.

Measurement shall be per area in **square metres**.

Payment for this item shall be at the contract unit price including excavation, removal and disposal **offsite**.

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

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 2.08 – REMOVE AND DISPOSAL OF CONCRETE SIDEWALK**

Reference: OPSS 510

The Contractor shall remove existing sidewalk encountered during the Work.

Measurement shall be per area in **square metres**.

Payment for this item shall be at the contract unit price including excavation, saw cuts, removal and disposal offsite.

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

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 2.09 - REMOVE AND DISPOSAL OF CURB AND GUTTER (ALL TYPES)**

Reference: OPSS 510 and OPSS.MUNI 206

Work under this item shall be completed in accordance with OPSS 510 and OPSS.MUNI 206.

Concrete curb and gutters shall be saw cut and removed as required to complete the Work.

All removed material is to be disposed of off-site, unless otherwise directed by the Contract Administrator.

Payment at the unit price bid per meter shall be full compensation for all Labour, Equipment and Material to complete the Work.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 2.10 – FIRE HYDRANT REMOVAL, DISPOSAL, AND INSTALLATION OF CONCRETE PLUG ON EXISTING LEAD**

Reference: OPSS. MUNI 510

Scope of Work:

- Excavate to expose hydrant, secondary valve and piping as directed by the Contract Administrator
- Remove existing hydrant, secondary valve, valve box and piping. Saw-cutting is not permitted.
- Separate hydrant, valve and pipes.
- Clean, salvage and transport existing hydrant, valve and valve box to the County Water Depot on 37 Church Street, Picton.
- Dispose of removed pipe off site.

- Removal of hydrant shall include the capping of hydrant lead pipe with placing of 15 MPa concrete plug in the end(s) of the existing watermain that is to be abandoned in place. The minimum length of the concrete plug shall be 300 mm.
- Supply and place compacted Granular B/50mm CRLS backfill at 150mm layers, under existing and proposed pavement areas to proposed road subgrade.

Removed hydrant shall be delivered to the Church Street Public Works Yard (37 Church St, Picton) for the County's use. The Contractor will be required to include the cost for delivery in this item.

The contract will be required to provide all labour, materials, and equipment necessary for the removal and disposal of fire hydrant.

The removal of fire hydrant shall be in accordance with OPSS 510.

Measurement shall be for the **total number** of fire hydrant removed regardless of type, depth, and size.

Payment for this item shall be at the contract unit price including excavation, removal, end caps, backfilling, and disposal.

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

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 2.11 – CULVERT REMOVAL**

The contract will be required to provide all labour, materials, and equipment necessary for the removal of culverts

The removal of culvert shall be in accordance with OPSS 510.

Measurement for this item shall be by length in **metres** along the horizontal centreline length of the culvert from inlet end to outlet end of the culvert.

Payment for this item shall be at the contract unit price including excavation, removal, backfilling, and disposal.

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

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 2.12–MAINTENANCE HOLES AND NEW CATCHBASINS AND CATCHBASIN LEADS**

Reference: OPSS 410, 422, AS-135 and backfill shall be Granular 'B', Type 1  
OPSS 407, OPSD 400.020, 401.010, 403.010, 404.020, 405.020, 701.010, 701.011,  
701.012, 701.021, 705.010, 705.020, 705.030, 705.040, 708.010, 708.020, 708.030

**Scope of Work:**

Excavation and dewatering as required.

- Supply and installation of precast maintenance holes and catch basins and connection of all pipes as per OPSD.
- Supply and install CB's lead including connection as shown on contract drawings.
- Supply of concrete and construction of benching as per OPSD 701.021.
- Supply and installation of frame and cover as per OPSD 401.010, roadway catch basins frames and grates as per OPSD 400.110, and ditch inlet frames and grates as per OPSD 403.010.
- Supplying all other equipment and materials required to complete the maintenance holes and catchbasins.
- Supply and install drop structure where specified on the contract drawings.
- Maintenance hole steps as per OPSD 405.020 Type A, safety platform/grates on all maintenance holes greater than five metre depth as per OPSD 404.020.
- Supply, place and compact granular 'B' backfill around the maintenance holes and catch basins to 100% Standard Proctor Density. Connection to proposed/existing maintenance holes and catch basins with 30 MPa concrete.
- Catch basin and maintenance hole frames and grates shall be adjusted to base asphalt. Concrete curb and gutter will be terminated on each side of the catch basin structure with 2.5 m x 2.5 m long dowels in each curb provided for the future connection to the completed curb and gutter at each catch basin. Unit price also includes asphalt curb behind each catch basin as per OPSD 601.010.
- Temporary restoration of surfaces to carry traffic.
- Recording of exact location and elevation of completed catchbasin installation.

***All leads to catch basins are to be included in the unit rate for each catch basin and ditch inlet.***

Pay quantity shall be based on a unit price for each maintenance hole, catch basin and double catch basin. The unit price for each structure shall also include any adjustment in grade to the structure within plus or minus 0.3 m to what is shown on the contract drawings. No increase is to be given or deduction taken for adjustment within the 0.3 m vertical tolerance. Payment for the above item shall be full compensation for all Labour, Equipment and Material to complete the work. All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 2.13—SUPPLY AND INSTALL STORM SEWERS**

Reference: OPSS 410, 422, AS-135 and backfill shall be Granular 'B', Type 1

This item covers the proposed storm sewer as well as the proposed catchbasin leads.

#### **Scope of Work:**

##### Trench Excavation

- Field location and protection of existing utilities in advance of the excavation including water services.
- Excavation, removal and disposal of surplus excavated materials off site.
- Shoring and dewatering.
- Protection of existing road surface.
- The storm sewer items include all necessary removals and restoration unless it is already specified elsewhere.

##### Pipe Installation

- Layout of the storm sewer installation.
- Supplying, shaping and compacting granular bedding.
- Supply and place pipes as per Contract.
- Bedding shall be done as per G107 detail. Backfill shall be Granular 'B', Type 1.
- Connection to proposed/existing maintenance holes and catch basins with 30 MPa concrete. Payment for breaking into existing maintenance holes to be made under separate line item.
- ***Supply and installation of 50 mm thick rigid Styrofoam insulation above and beside 250-300 mm storm sewer where cover above storm sewer is less than 1.5 m or as shown on the drawings.***



- Temporary restoration of surfaces to carry traffic
- Recording of exact location and elevation of completed sewer installation.

Pay quantity shall be based on the horizontal length in linear metres measured over the centre line of the pipe from centre to centre of maintenance holes unless otherwise specified. Payment for the above item shall be full compensation for all Labour, Equipment and Material to complete the work.

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**WORK SPECIFICATION DETAILS**

**SECTION 3 – ROADWORKS**

**ITEM No. 3.01 - GRANULAR A FOR ROAD RECONSTRUCTION**

The contractor will be required to provide all labour, materials, and equipment necessary for the granular A for road reconstruction.

Granular A shall be in accordance with OPSS. MUNI 1010

Road reconstruction shall be in accordance with OPSS 314.

Measurement shall be in **tonne** of granular A material in place.

Payment for this item shall be at the contract unit price including hauling, placement, watering, compaction.

Materials placed in excess of 110% of the theoretical quantity, based on the specified measurements indicated on the drawings shall not be included for payment.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be

considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 3.02 - GRANULAR B TYPE II FOR ROAD RECONSTRUCTION**

The contract will be required to provide all labour, materials, and equipment necessary for the granular B TYPE II for road reconstruction.

Granular B TYPE II shall be in accordance with OPSS MUNI 1010

Road reconstruction shall be in accordance with OPSS 314.

Measurement shall be **in tonne** of granular B TYPE II material in place.

Calculation of theoretical quantity for Granular B is based on the road width from 0.15 m behind the curb to 0.15 m behind the curb.

The Contractor shall repair or replace any granular material lost through washouts or bladed-off the roadway and no additional payment will be made for this work.

The Contractor shall ensure that during construction, the road can bear the weight of construction vehicles without deformation.

Payment for this item shall be at the contract unit price including hauling, placement, watering, compaction.

Materials placed in excess of 110% of the theoretical quantity, based on the specified measurements indicated on the drawings shall not be included for payment.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 3.03 - GRANULAR A SHOULDER MATERIAL**

The contract will be required to provide all labour, materials, and equipment necessary for the granular A for shoulder material

Granular A shall be in accordance with OPSS MUNI1010

Road reconstruction shall be in accordance with OPSS 314.

Measurement shall be **in tonne** of granular A material in place.

Payment for this item shall be at the contract unit price including hauling, placement, watering, compaction.

Materials placed in excess of 110% of the theoretical quantity, based on the specified measurements indicated on the drawings shall not be included for payment.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.04 - TACK COAT RS1**

Reference: OPSS 310

As part of the work under the contract item, the Contractor shall apply tack coat on the existing asphalt surface as well as all vertical joints prior to the placement of hot mix asphalt. The tack coat shall consist of SS-1 or SS-1H emulsified asphalt diluted with an equal volume of water. The rate of application shall be at 0.35 kg/m<sup>2</sup>.

As part of the work under the contract item, the Contractor is to clean the base asphalt pavement in preparation for construction of top asphalt and includes removal of all contamination by cleaning, scraping, brushing, washing and flushing with mechanical and hand labour as required by the Contract Administrator.

The contract will be required to provide all labour, materials, and equipment necessary for the tack coat.

Tack coat shall be in accordance with OPSS 310

Measurement for this item shall be per **area in square metres** applied.

Payment for this item shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.05 - HMA – TOP COAT HL3 (50mm)**

Reference: OPSS 310 and 1150

Work under this item(s) shall be completed in accordance with OPSS 310 and OPSS 1150 and as amended herein.

The requirements of OPSS 1150 Table 3 for AADT 1000 to 5000 shall apply. Marshall Stability shall be 6700 minimum.

Under this item, the Contractor shall include all step and butt joints in existing asphalt as required as part of the staging of the Work and as noted on the Contract Drawings.

The work of adjusting existing structures shall be paid under the appropriate adjustment items in the form of tender and the work of setting new structures to pavement grade shall be included as part of the work of the item for the new structure.

The Contractor shall provide mix designs for the specified mixes that meet the optimum Marshall Properties as specified in OPSS 1150 and OPSS 1151.

Asphalt cement shall meet the requirements of OPSS 1101.

Driveway repairs where curb and gutter are replaced shall be paved with **50mm HL3**.

As part of the work under the contract item, the Contractor is to clean the base asphalt pavement in preparation for construction of top asphalt and includes removal of all contamination by cleaning, scarping, brushing, washing and flushing with mechanical and hand labour as required by the Contract Administrator.

All saw cutting or milling for tie-ins (construction step joints) shall be included in the unit price bid.

The Contractor is responsible to construct durable longitudinal and transverse joints. Any joints cracking occurring within the two-year maintenance period will be deemed to be a deficiency. All costs associated with remedial work will be the responsibility of the Contractor.

If any segregation is found in the final placed asphalt pavement, as determined by the Contract Administrator, the Contractor shall cease operations until the cause of the defective work has been remedied.

Measurement is in **tonne**. Payment at the Contract Price for this item shall be full compensation for all Labour, Equipment and Material to complete the Work including Asphalt Cement.

The asphalt mix shall not include steel or blast furnace slag.

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

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.06 - BASE COAT HL8 (80mm)**

Work under this item(s) shall be completed in accordance with OPSS 310, OPSS 1150 and as amended herein.

Asphalt cement shall meet the requirements of OPSS 1101, Material Specification for asphalt Cements, penetration grade 85 - 100.

Under the Base asphalt item(s), the Contractor shall provide necessary asphalt ramping at the concrete gutters adjacent to pedestrian curb ramps to eliminate the concrete "lip" as directed by the Contract Administrator. The Contractor may substitute a finer asphalt mix for placement as temporary asphalt ramps at intersections, with prior approval from the Contract Administrator. No additional payment shall be made for the provision of asphalt ramps. The placement of asphalt ramps shall be reviewed in advance with the Contract Administrator to assure that positive drainage is maintained and that the limit and extent of the required ramps is sufficient for the period of time in which the ramps will remain.

Under this item, the Contractor shall include all step and butt joints in existing asphalt as required as part of the staging of the Work.

The work of adjusting existing structures shall be paid under the appropriate adjustment items in the Schedule of Items, Unit Prices and Summary and the work of setting new structures to pavement grade shall be included as part of the work of the item for the new structure.

Measurement shall be in **tonne**. Payment at the Contract price for this item shall be full compensation for all Labour, Equipment and Material to complete the Work. All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.07 - ASPHALT SAW CUTTING**

Asphalt saw cutting be in accordance with OPSS 510.

Payment at the unit price bid per linear metre for this item shall be compensation for all labour, equipment and material required to cut existing roadway asphalt. The cutting shall be by means of suitable mechanical sawing equipment capable of making a clean cut and leaving a perfect edge.

Cutting asphalt must be done using a saw. Ripping of asphalt by excavation machinery shall not be allowed and no payments will be made.

Measurement for this item shall be by the **linear metres**.

Sawcutting of asphalt driveways shall be deemed as incidental to the work for which **no** extra payment shall be made. See Item 3.11 and 3.12 for "Driveway Restoration".

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.08 - CONCRETE SIDEWALK**

The contract will be required to provide all labour, materials, and equipment necessary for concrete sidewalk construction.

The work includes excavation, supply, place and compact Granular A, 50 mm polyethylene film vapour barrier, supply and place concrete as per OPSS 351.

Granular base material shall be Granular A in accordance with OPSS MUNI 1010.

Concrete sidewalk shall be accomplished following OPSS 351, OPSD 310.02, OPSD 310.10, OPSD 310.33.

Granular base for concrete sidewalk adjacent to curb and at residential driveway shall be 150mm thick. At commercial and industrial driveways, the concrete sidewalk shall be 200mm.

Finishing of the concrete surface shall take place while the concrete is sufficiently plastic to achieve the desired grades, elevations, and texture.

Measurement shall be per **square metre** of new concrete sidewalk.

Payment for the concrete sidewalk shall be at the contract unit price including the supply, placement, and compaction of granular base, vapor barrier, supply and curing of concrete .

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.09 - CONCRETE CURB AND GUTTER**

Reference: OPSS 353, 1350; OPSD-608.01, 600.040, 600.110

The contractor will be required to provide all labour, materials, and equipment necessary for concrete curb and gutter construction.

Concrete shall conform to the requirements of OPSS 1350 except as noted in this special provision. The Contractor will be responsible for the concrete mix design as specified in Subsection 1350.04 and for providing concrete of the required properties.

Cement content shall conform to the minimum cement content specified in OPSS 1350. The nominal maximum size of the coarse aggregate is 19.0 mm and the required air content is 7%  $\pm$  1.5%. Slump of the concrete shall conform to OPSS 1350. Chemical admixtures shall be selected from the designated sources list and shall be added according to the manufacturer's recommendations.

When submitting the mix proportions, the Contractor shall specify the source of the coarse and fine aggregate and the manufacturer of the cement. The contractor shall submit a mix design a minimum of two (2) weeks prior to the placement of any concrete.  
No separate payment for hand work.

Granular base material shall be Granular A in accordance with OPSS 1010.

Measurement of concrete curb and gutter shall be by **length in metres** along the flow line of the gutter whether straight or curved, without separation into types. Such measurements shall include the space occupied by setbacks, gutter outlets, and frames with grates. Include concrete around the catchbasins. Catchbasin adjustment shall be included in this unit price item.

All costs for the above work shall be included in the Contract price for concrete curb and gutter. Curb and gutter terminations shall be included in the unit price for this item.

Payment for the concrete curb shall be at the contract unit price including, curing and insulation, saw cuts. Payment at the Contract price for this item shall be full compensation for all Labour, Equipment and Material to complete the Work.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.10 - 150MM PERFORATED SUBDRAIN**

The contract will be required to provide all labour, materials, and equipment necessary for the supply and installation of perforated drain (including excavation) for the drain installation.

The installation of perforated drain shall be in accordance with OPSS 405 and 410.

Measurement for this item shall be by **length in metres** horizontally along the centreline of the pipe between the ends of the pipe subdrain, including the outlets, or between the upstream end of the pipe subdrain and the centre of a maintenance hole, catch basin or ditch inlet, or connection to storm structures, including all necessary pre-manufactured fittings to complete the connections.

Pipe sub-drain shall be installed in accordance with the typical details and as provided on the Contract Drawings and in sizes in the Form of Tender.

Granular 'B', material shall be used for bedding and backfill for subdrains.

The 150 mm dia. perforated corrugated plastic subdrain pipe shall be wrapped with non-woven



geotextile filter cloth sleeves, Type 270R as manufactured by Terrafix Geosynthetics Inc. or approved equal.

Payment for this item shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.11 & 3.12- DRIVEWAY RESTORATION**

Reference: OPSS 310, 311

The contract will be required to provide all labour, materials, and equipment necessary for driveway restoration within or adjacent to the construction area as shown on the plan or as directed by the Engineer.

Measurement shall be **in square meters** of pavement in-place and **square meters** of crushed rock in-place.

Pavement repairs shall be accomplished following OPSS 310 AND OPSS 311 and other relevant OPSS.

The edge of existing asphalt to be restored shall be cut in a straight line to full depth using a cutting saw. The surface of the existing pavement adjacent to the cut shall be swept clean in areas requiring paving. Tack coat shall be applied to all edges of the existing pavement, the edge of the sidewalk or curb and gutter where the asphalt concrete will abut and to the edge of the asphalt cut and over the surface of existing pavement requiring paving.

The unit price shall include all saw cutting and excavation and disposal off site as necessary to accommodate Granular 'A' base material and hot mix asphalt or Granular 'A' material as indicated on the drawings. The work shall include the supply, placement and compaction of 150mm Granular 'A' and 50mm HL3 hot mix surface asphalt and all other work or supply, placement and compaction of 300mm Granular 'A' for granular driveway and all other work necessary to complete the work.

Where it is necessary to place sidewalk or curb and gutter adjacent to crushed rock driveways or walkways, they shall be repaired following construction. Such repairs shall be accomplished using a matching gradation and color of existing rock to meet the sidewalk or curb and gutter and to provide a proper grade for pedestrian and vehicle traffic and proper drainage. Restoration is to be completed as soon as possible at each individual property and no be left to the end of the project.

Where driveway that is constructed of crushed rock not readily available at the local quarries because of the type, gradation, and color, the Contractor must retain and stockpile the stone in the individual owner's driveway for use in driveway restoration.

Payment for the asphalt driveway restoration shall be at the contract unit price including excavation, disposal offsite, saw cut, tack coat, grading, Granular A, and asphalt.

Payment for the gravel driveway restoration shall be at the contract unit price including excavation, disposal offsite, Granular A, grading, compaction.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.13 – SINGLE RAIL STEEL BEAM GUIDE RAIL, TYPE M30**

Reference: OPSS 721

The work includes the supply and installation of steel beam guiderail and posts as per OPSS 912.185.

Measurement shall be by meter of steel beam guiderail installed.

The contract will be required to provide all labour, materials, and equipment necessary for the installation of single rail steel beam guide rail.

Steel beam guide rail installation shall be in accordance with OPSS 721.

Steel beam guide rail adjacent to curb installation shall be in accordance with OPSS 912.188

Steel beam guide rail adjacent to sidewalk installation shall be in accordance with OPSS 912.189

Measurement of steel beam guide rail shall be by length in **metres** along the centreline of the system from end to end of each steel beam guide rail installation. The length includes all treatments, transitions, and connections, but does not include terminal systems.

Payment for this item shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.14 – STEEL BEAM GUIDERAIL END TREATMENT**

Reference: OPSS 721, 732

The work includes the supply and installation of the Extruder as per OPSS 922.532 and leaving end treatment as per 912.235

Payment shall be for each extruder system which includes the extruder terminal and 15.24 m of associated steel beam guide rail and leaving end treatment.

For measurement purposes, a count shall be made of each complete steel beam energy attenuating terminal system installed, regardless of the type of steel beam energy attenuating terminal system placed.

Payment for this item shall be at the contract unit price.

Costs associated with any required removals and replacement or repairs of defective materials shall be the Contractor's responsibility at no additional cost to the Owner.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 3.15, 3.16, 3.17 – PAVEMENT MARKING, TRAFFIC PAINT**

The Contractor will be required to provide all labour, materials and equipment necessary for the supply and application of yellow and white paint materials for traffic markings on roadway pavement.

All materials, equipment and construction methods shall meet or exceed all requirements of the OPSS 710

Longitudinal lines shall be measured in **linear metres** of each type, colour and width of line, measured from beginning to end of each line type, including gap between line types

Cross hatching shall be measured in **square metres** of yellow or white crosshatched island, defined as the area enclosed by edge of Pavement, curb and gutter, and/or longitudinal lines (which shall not be measured as lines but shall be considered as part of the island)

Painted stop bars shall be measured as the number of stop bars painted in each lane.

Painted crosswalks shall be measured as the number of crosswalks painted.

Contractor shall supply place and maintain temporary marking on newly constructed pavement surfaces during the project in areas designated by the engineer. Supply and placement of temporary markings shall be considered incidental to the work.

Payment for the work under this item shall include a separate Unit Price for each type of Pavement marking as identified under the Contract.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 3.18 – TACTILE WARNING SURFACE INDICATORS**

The Contractor will be required to provide all labour, materials and equipment necessary for the supply and installation of tactile warning surface indicators.

The installation of this item shall be in accordance with OPSS 351 and OPSD 310.039

Measurement for this item shall be by the area in square metres of tactile warning surface indicators installed.

Payment shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.19– DURABLE PAVEMENT MARKING FOR CROSS WALK**

The Contractor will be required to provide all labour, materials and equipment necessary for the supply and installation of durable pavement marking for zebra cross walk marking.

The Contractor shall supply and apply reflectorized, non-coning, traffic paint for pavement markings. All non-coning traffic paint and reflectorized glass beads supplied under this contract shall be from sources indicated in the MTO's Designated Sources Manual (DSM). Non-coning traffic paint shall meet the requirements of OPSS 1712, and reflectorizing glass beads shall meet the requirements of OPSS 1750. The Contractor shall provide proof that material is from an approved source under the MTO's DSM and meets the requirements of the applicable OPSS, referenced above.

The installation of durable pavement marking shall be in accordance with OPSS 710.

Measurement for this item shall be by the **meter (length)** of cross walk strips (at 2.5m long, per strip) durable pavement marking installed,.

Payment shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

### **ITEM No. 3.20 – RA-4 CROSS WALK SIGNS**

The Contractor will be required to provide all labour, materials and equipment necessary for the supply and installation of RA-4 signs

The installation of RA-4 sign shall be in accordance with OPSS 703

Measurement for this item shall be by the **number** RA-4 sign installed

Payment shall be at the contract unit price including supply and installation of sign posts.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

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## WORK SPECIFICATION DETAILS

### SECTION 4 – WATERMAIN

#### ITEM Nos. 4.01, 4.02, 4.03, & 4.04, 4.05 – WATER MAIN IN OPEN CUT

Reference: OPSS 441 and 442

Water main metallic components shall be installed with anodes and denso tape for corrosion protection in accordance with OPSS 442. Corrosion protection for new watermains shall be included in this item unit price, no separate payment shall be made for corrosion protection.

Granular B, type II, shall be used for backfilling material during cold weather construction. Disposal of unsuitable and excess material shall be in accordance with OPSS 180.

The contract will be required to provide all labour, materials, and equipment necessary for the installation of the water main, including the sawcutting and removal of asphalt.

The installation of the water main in open cut shall be in accordance with OPSS 441

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

Payment for this item shall be at the contract unit price including excavation, dewatering, supply and installation of pipe and fitting including supply and installation of thrust block and/or joint restraint systems, bedding, corrosion protection, testing, flushing and disinfection and removal of excess material.

Connection to existing watermains shall be included in this item unit price, no separate payment shall be made for connection to existing watermains. No extra payment for raising and lowering of the watermain (of up to +/- 300mm). No extra payment for connecting test sections together.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

Regardless of the number of connections required, facilitate the testing, disinfection and commissioning of the watermain as per the County's procedures in Appendix D. 10% of the cost,

based on the unit price, will be held until the testing, disinfection and commissioning of the watermain has passed, after which it will be paid out. Refer to Special Provisions – General, Item 54 – Commissioning for details.

Undertake tracer wire connectivity testing as part of the commissioning sequence. The payment of this item shall be included in the contract unit price, paid by the linear meter.

All connections to pipes (existing and new) shall be as per the pipe manufacturer's recommendations. Especially the PVC-HDPE pipe connections, including joint restraints and anchoring system.

#### **ITEM No. 4.06 – WATER MAIN INSTALLED BY HDD (STA 0+060 TO 0+390)**

##### **1. PAYMENT**

The contractor will be required to provide all labor, materials, and equipment necessary for the installation of the water main

The installation water main horizontal directional drilling shall be in accordance with OPSS 450.

Measurement for a product installation shall be in meters along the centerline of the useable product between final connection points or work completed. No additional payment shall be made for end pieces to achieve the design elevation.

Payment for this item shall be at the contract unit price.

Connection to existing watermains shall be included in this item unit price, no separate payment shall be made for connection to existing watermains.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

##### **2. SCOPE**

###### **A General:**

This specification defines the acceptable methods and materials for installing water mains by the horizontal directional drilling method and the requirements for high density polyethylene (HDPE) pipe installed by directional drilling.

Refer to current version of "Horizontal Directional Drilling Good Practices Guidelines" by NASTT.

###### **B Installation Plan:**

1. At least 7 days prior to mobilizing equipment Contractor shall submit his detailed installation plan to the Engineer. The plan shall include a detailed plan and profile of the bores and be plotted at a scale no smaller than 1:20 horizontal and vertical.

The Contractor is to field determine the geodetic elevations of the surface topography along the bore path and incorporate these measurements within detailed plan and profile above.

2. The plan shall also include a listing of major equipment and supervisory personnel and a description of the methods to be used.
3. The plan is to include a contingency plan for the containment and clean-up of inadvertent returns, frac-out or another spillage of fluids.
4. The plan is to include all details of the guidance system and tracking protocol as to the requirements contained within these specifications. A typical "walk-over" system alone to track the position of the drill head is not acceptable.

C Variations in Plan or Profile:

The Contractor may request changes to the proposed vertical and horizontal alignment of the installation and the location of the entry and exit points. Proposed changes shall be submitted in writing to the Engineer and receive approval of the Engineer prior to construction.

D Alignment:

The proposed plan and profile installation locations are based on alignments to accommodate hydraulic limitations, public right-of-way, allowable work areas, to avoid obstructions, and to properly maintain operation flow velocities.

E Qualifications:

Directional drilling and pipe installation shall be done only by an experienced Contractor specializing in directional drilling in rock and whose key personnel have at least five (5) years experience in this work. Furthermore, the Contractor shall have installed directionally drilled pipe in rock at least as large as 350mm in diameter, have performed crossings at least 400m in length, and successfully installed at least 10,000m in length.

2 MATERIALS:

A. General:

The pipe is to comprise of High-Density Polyethylene (HDPE) pipe to ASTM-F714 of the sizes and maximum Dimension Ratios as shown on the drawings. The pipe shall be PE 4710 HDPE AWWA C906 and NSF approved intended for contact with potable water. All piping system components shall be the products of one manufacturer and shall conform to the latest edition of ASTM D1248, ASTM D3350, and ASTM F714.

The Contractor shall supply and install tracer wire suitable for the HDD installation and the open cut installation and include all costs in the appropriate Tender Item.



B. Piping and Bends:

Piping and Bends shall be extruded from a polyethylene compound and shall conform to the following requirements:

- 1 The polyethylene resin shall meet or exceed the requirements of ASTM D3350 for PE 4710 material with a cell classification of 335434C, or better.
- 2 The polyethylene compound shall be suitably protected against degradation by ultraviolet light by means of carbon black, well dispersed by pre-compounding in a concentration of not less than 2 percent.
- 3 The maximum allowable hoop stress shall be 5500 kN/m<sup>2</sup> at 23 degrees Celsius.
- 4 The pipe manufacturer shall be listed with the Plastic Pipe Institute as meeting the recipe and mixing requirements of the resin manufacturer for the resin used to manufacture the pipe in this project.
- 5 The pipe and bends shall have a minimum standard dimension ratio (DR) wall thickness as per the Contract drawings. The minimum pipe class (DR rating) has been selected to withstand the long-term stresses (50 year) of the pipe in its final position. The Contractor shall do his own calculations to verify that the pipe can withstand the installation forces it is subjected to in conjunction with short-term external loadings. The Contractor shall provide calculations certified by a Professional Engineer demonstrating that the pipe can withstand Contractor's short-term external loadings. Acceptable pipe stresses taking an appropriate safety factor into account shall be obtained from the pipe manufacturer. The Contractor is to consider their selected means and methods and select a DR class such that the installed pipe has not lost more than 10% of section thickness loss during installation.
- 6 Water pipe exterior is to contain exterior blue striping, 3 strips in total.
- 7 A minimum of three tracer wires are to be installed to the watermain

C. Pulling Force:

- 1 The Contractor shall ensure that the greatest load on the pipe does not exceed the Safe Pull Force of the pipe. This will depend on the geometry of the path, including the depth, entry and exit curves. Other parameters include frictional drag forces acting on the sides of the pipe due to the weight or buoyancy forces as it is pulled into and along curves, and resistance due to the pipe stiffness. The Contractor shall determine whether the pipe should be deliberately weighted (for example, filled with ballast such as water) to reduce buoyancy. The Contractor shall provide all detailed calculations certified by a

Professional Engineer of the estimated peak-force on the product pipe at the key transition points as per ASTM F 1962-05 Section 8.

#### D. PROCEDURES

##### 1. General:

All HDPE pipe shall be cut, fabricated, and installed in strict conformance with the pipe manufacturer's recommendations. Joining, laying, and pulling of HDPE pipe shall be accomplished by personnel experienced in working with HDPE pipe. The pipe supplier shall certify in writing that the Contractor is qualified to join, lay, and pull the pipe or representative of the pipe manufacturer shall be on site to oversee the pipe joining. Expense for the representative shall be paid for by the Contractor.

##### 2. Transportation:

Care shall be taken during transportation of the pipe to ensure that it is not cut, kinked, or otherwise damaged.

##### 3. Storage:

Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects which could damage the pipe. Stacking of the polyethylene pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature condition. Where necessary due to ground conditions, the pipe shall be stored on wooden sleepers, spaced suitably and of such widths as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.

##### 4. Handling Pipe:

The handling of the joined pipeline shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Ropes, fabric, or rubber protected slings and straps shall be used when handling pipes. Chains, cables, or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe or fittings shall not be dropped onto rocky or unprepared ground. Slings for handling the pipeline shall not be positioned at butt-fused joints. Sections of the pipes with cuts and gouges exceeding 10 percent of the pipe wall thickness or kinked sections shall be removed and the ends rejoined.

The open ends of all sections of joined and/or installed pipe (not in service) shall be plugged at night to prevent animals or foreign material from entering the pipe line or pipe section.

Waterproof nightcaps of approved design may be used but they shall also be so constructed that they will prevent the entrance of any type of natural precipitation into the pipe and will be fastened to the pipe in such a manner that the wind cannot blow them loose.

The practice of stuffing cloth or paper in the open ends of the pipe will be considered unacceptable.

Where possible, the pipe shall be raised and supported at a suitable distance back from the open end such that the open end will be below the level of the pipe at the point of support.

### 3 INSTALLATION:

#### A. General:

1. The Contractor shall install the pipelines by means of horizontal directional drilling. The Contractor shall assemble, support, and pretest the pipeline prior to installation in the directional drill tunnel.
2. Horizontal directional drilling shall consist of the drilling of a small diameter pilot hole from one end of the alignment to the other, followed by enlarging the hole diameter for the pipeline insertion. The exact method and techniques for completing the directionally drilled installation will be determined by the Contractor, subject to the requirements of these Specifications.
3. The vertical alignment of the pilot bore is to allow for drilling within the competent bedrock with a minimum RQD of 60 as noted in the geotechnical report within the contract documents. Pilot bore setting and alignment is to be set in order to prevent fracturing of the rock cover above the watermain elevation or the pipe being installed out of the vertical alignment specified during construction including reaming or pull-back of the drill string.
4. The Contractor shall prepare and submit a plan to the Engineer for approval for insertion of the HDPE pipe into the opened bore hole. This plan shall include pullback procedure, ballasting, use of rollers, side booms and side rollers, coating protection, internal cleaning, internal gauging, hydrostatic tests, dewatering, and purging.
5. The required piping shall be assembled in a manner that does not obstruct adjacent roadways or public activities. The Contractor shall erect temporary fencing around the entry and exit pipe staging areas.
6. The installed watermain is to be drilled and installed such that there are no voids in the annular space to the pipe and bored substrate. The annular space is to be completely filled with drilling fluid or slurry used in the HDD installation to support the pipe and neighboring materials.

#### B. Joining Pipe Sections:

1. Each length of pipe shall be inspected and cleaned as necessary to be free of debris immediately prior to joining.
2. Pipes shall be joined to one another by means of thermal butt-fusion. Polyethylene pipe lengths to be joined by thermal butt fusion shall be of the same type, grade, and class of polyethylene compound and supplied from the same raw material supplier. Electrofusion couplings may be used where approved by the Engineer.

3. Mechanical connections of the polyethylene pipe to auxiliary equipment shall be through flanged connections which shall consist of the following:
  - a. A polyethylene "sub end" shall be thermally butt-fused to the ends of the pipe.
  - b. Provide ASTM A240, Type 304 stainless steel backing flange, 56kg (125-pound), ANSI B16.1 standard, and gaskets as required by the manufacturer.
  - c. Stainless Steel bolts and nuts of sufficient length to show a minimum of three complete threads when the joint is made and tightened to the manufacturer's standard. Retorque the nuts after 4 hours.
  - d. Butt-Fusion joining of pipes shall be performed in accordance with the manufacturer's recommendations as to equipment and technique. Butt-fusion joining shall be 100% efficient offering a joint weld strength equal to or greater than the tensile strength of the pipe.

C. Testing:

1. The pipe shall be hydrostatically tested before and after installation. Pressure and temperature shall be monitored with certified instruments during the test. After this test, the water will be removed with pigs. Erosion prevention procedures will be used during removal and discharge of the water.
2. Hydrostatic testing shall be performed as specified, all costs associated with acquiring water for testing shall be included in the established contract unit bid prices.

D. Guidance System:

1. The Contractor is to use a guidance system comprising a Magnetic Guidance System (MGS) or a proven gyroscopic probe and interface for a continuous and accurate determination of the location of the drill head during the drilling operation.
2. The guidance system is to be capable of tracking in any sub-surface condition, including hard rock. It is to enable the driller to guide the drill head by providing immediate information on the tool face, azimuth (horizontal direction), and inclination (vertical direction). The system must be capable to be remotely steered and permit electronic monitoring of tunnel depth and location.
3. The guidance system must be accurate and calibrated to the manufacturer's specifications of the vertical depth. The system shall be accurate to within 2% vertically and 600mm horizontally.

E. Tolerances:

1. Pipe installed by the directional drilled method must be located in plan as shown on the Drawings and must be no shallower than shown on the Drawings unless otherwise approved. The Contractor shall plot the actual horizontal and vertical alignment of the pilot bore at intervals not exceeding 10m. This "as built" plan and profile shall be updated as the pilot bore is advanced. The Contractor shall at all times provide and maintain instrumentation that will accurately locate the pilot hole and measure drilling fluid flow and pressure. The Contractor is to provide the Engineer access to all data and readout pertaining to the position of the bore head and the fluid pressures and flows.

Drill pilot hole along path as per the Drawings to the following tolerances:

- a. Vertical alignment plus or minus 1.5m. Vertical alignment of pilot hole must not establish high points along the HDD installed pipeline.
- b. Horizontal alignment plus or minus 3.0m maximum not to exceed the limits of the public right of way, whichever is less.

In the event of deviation of the pilot bore larger than the tolerances specified above the Engineer may instruct that the pilot bore should be retracted and re-drilled to achieve the alignment within the tolerances above at the Contractor's expense. Abandoned pilot bores are to be filled with concrete grout at the Contractor's expense.

When requested, the Contractor shall provide explanations of this position monitoring and steering equipment. The Contractor shall employ experienced personnel to operate the directional drilling equipment and, in particular, the position monitoring and steering equipment. No information pertaining to the position or inclination of the pilot bores is to be withheld from the Engineer.

2. Each exit point shall be located as shown with an over-length tolerance of 3.0m for the overall length of directional drill and an alignment tolerance of 1.5m left/right with due consideration of the position of the other exit points and the public right of way.
3. After the pipe is in place, cleaning pigs shall be used to remove residual water and debris. After the cleaning operation, the Contractor shall provide and run a sizing pig to check for anomalies in the form of buckles, dents, excessive out-of-roundness, and any other deformations. The sizing pig run shall be considered acceptable if the survey results indicate that there are no sharp anomalies (e.g. dents, buckles, gouges, and internal obstructions) greater than 2 percent of the nominal pipe diameter, or excessive ovality greater than 5 percent of the nominal pipe diameter. For gauging purposes, dent locations are those defined above which occur within a span of five feet or less. Pipe ovality shall be measured as the percent difference between the maximum and minimum pipe diameters.

F. Ream and Pullback:

1. Reaming operations shall be conducted to enlarge the pilot after acceptance of the pilot bore. The number and size of such reaming operations shall be conducted at the discretion of the Contractor.
2. The means and methods selected for the pull are to allow for a non-continuous pull due to area and alignment constraints of the public right-of-way allowable for use as a construction area.
3. The maximum allowable pull exerted on the HDPE pipelines shall be measured continuously and limited to the maximum allowed by the pipe manufacturer so that the pipe or joints are not over stressed.
4. A swivel shall be used to connect the pipeline to the drill pipe to prevent torsional stresses from occurring in the pipe.
5. The lead end of the pipe shall be closed during the pullback operation.
6. The pipelines shall be adequately supported by rollers and side booms and monitored during installation so as to prevent over stressing or buckling during the pullback operation. Such support/rollers shall be spaced at a maximum of 15m on centers, and the rollers to be comprised of a non-abrasive material arranged in a manner to provide support to the bottom and bottom quarter points of the pipeline allowing for free movement of the pipeline during pullback. Surface damage shall be repaired by the Contractor before pulling operations resume.
7. The contractor shall at all times handle the HDPE pipe in a manner that does not over stress the pipe. Vertical and horizontal curves shall be limited so that wall stresses do not exceed 50% of yield stress for flexural bending of the HDPE pipe. If the pipe is buckled or otherwise damaged, the damaged section shall be removed and replaced by the Contractor at his expense. The Contractor is to consider their selected DR class and determine means and methods of installation such that the installed pipe has not lost more than 10% of section thickness loss during installation and will be installed without damage.

G. Drilling Fluids and Cuttings

1. Drilling fluid selected is not to react chemically with the sub-surface conditions in an adverse manner during construction. The Contractor is to carry out sufficient chemical testing of sub-surface samples retrieved and made available by the Engineer to determine the chemical properties of the rock to be drilled through.
2. During the drilling, reaming, or pullback operations, the Contractor shall make adequate provisions for handling the drilling fluids, or cuttings at the entry and exit pits.
3. Pits constructed at the entry or exit point area shall be so constructed to completely contain the drill fluid and prevent its escape.

4. The Contractor shall utilize drilling tools and procedures which will minimize the discharge of any drill fluids. The Contractor shall comply with all mitigation measures listed in the required permits and elsewhere in these Specifications.
5. To the extent practical, the Contractor shall maintain a closed loop drilling fluid system.
6. The Contractor shall minimize drilling fluid disposal quantities by utilizing a drilling fluid cleaning system which allows the returned fluids to be reused.
7. As part of the installation plan specified herein before, the Contractor shall submit a drilling fluid plan which details types of drilling fluids, cleaning and recycling equipment, estimated flow rates, and procedures for minimizing drilling fluid escape.
8. The Contractor is to monitor the pumping rate, pressure, viscosity, and density of the drilling fluid continuously during all operations to ensure adequate removal of cuttings, the stability of the borehole and the management of drilling fluids.

#### 4 DRILLING OPERATIONS:

##### A. General:

The Contractor shall prepare a plan to be submitted for Engineer approval which describes solids control plant, pilot hole drilling procedure, the reaming operation, and the pullback procedure. All drilling operations shall be performed by supervisors and personnel experienced in horizontal directional drilling. All required support, including drilling tool suppliers, survey systems, mud cleaning, mud disposal, and other required support systems used during this operation shall be provided by the Contractor.

Drill pipe to be a class and diameter sufficient for the torque and longitudinal loads and fluid capacities required for the work.

A smoothly drilled pilot hole shall follow the design centerline of the pipe profile and alignment described on the construction drawings.

The position of the drill string shall be monitored by the Contractor with downhole survey instruments. Contractor shall compute the position in the X, Y and Z axis relative to ground surface from downhole survey data a minimum of once per length of each drilling pipe or 10m, whichever is less. Deviations from the acceptable tolerances described in the Specifications shall be documented and immediately brought to the attention of the Engineer for discussion and/or approval. The profile and alignment defined on the construction drawings for the bores define the minimum depth and radius of curvature. At no point in the drilled profile shall the radius of curvature of the bore be less than 50m. The Contractor shall maintain and provide to the Engineer, upon request, the data generated by the downhole survey tools in a form suitable for independent calculation of the pilot hole profile.

During the entire operation, waste and leftover drilling fluids from the pits and cuttings shall be dewatered and disposed of in accordance with all permits and regulatory agencies requirements. Remaining water shall be cleaned by Contractor to meet relevant permit and by-law requirements.

Any modification to the basic drilling fluid involving additives must describe the type of material to be used and be included in Contractor's drilling plan presented to the Engineer. The Owner retains the right to sample and monitor the waste drilling mud, cuttings and water.

B. Environmental Provisions:

The Horizontal Directional Drilling operation is to be operated in a manner to eliminate the discharge of water, drilling mud and cuttings to any adjacent watercourses or land areas involved during the construction process. The Contractor shall provide equipment and procedures to maximize the recirculation or reuse of drilling mud to minimize waste. All excavated pits used in the drilling operation shall be lined by Contractor with heavy duty plastic sheeting with sealed joints to prevent the migration of drilling fluids and/or ground water.

The Contractor shall visit the site and must be aware of all structures and site limitations at the directional drill crossing and provide the Engineer with a drilling plan outlining procedure to prevent drilling fluid from adversely affecting the surrounding area.

The general work areas on the entry and exit sides of the crossing shall be enclosed by a berm to contain unplanned spills or discharge.

Waste cuttings and drilling mud shall be processed through a solids control plant comprised as a minimum of sumps, pumps, tanks, desalter/desander, centrifuges, material handlers, and haulers all in a quantity sufficient to perform the cleaning/separating operation without interference with the drilling program. The cuttings and excess drilling fluids shall be dewatered and dried by the Contractor to the extent necessary for disposal in offsite landfills. Water from the dewatering process shall be treated by the Contractor to meet permit and sewer use by-law requirements and disposed of locally. The cuttings and water for disposal are subject to being sampled and tested. The construction site and adjacent areas will be checked frequently for signs of unplanned leaks or seeps.

Equipment (graders, shovels, etc.) and materials (such as groundsheets, hay bales, booms, and absorbent pads) for cleanup and contingencies shall be provided in sufficient quantities by the Contractor and maintained at all sites for use in the event of inadvertent leaks, seeps or spills.

Waste drilling mud and cuttings shall be dewatered, dried, and stock piled such that it can be loaded by a front-end loader, transferred to a truck and hauled offsite to a suitable legal disposal site. The maximum allowed water content of these solids is 50% of weight.

Due to a limited storage space at the worksites, dewatering and disposal work shall be concurrent with drilling operations. Treatment of water shall satisfy regulatory agencies before it is discharged.

Regardless of the number of connections required, facilitate the testing, disinfection and commissioning of the watermain as per the County's procedures in **Appendix D and Special Provisions – General, Item 54 – Commissioning for details**. 10% of the cost, based on the unit price, will be held until the testing, disinfection and commissioning has passed, afterwhich it will be paid out.



Undertake tracer wire connectivity testing as part of the commissioning sequence. The payment of this item shall be included in the contract unit price, paid by the linear meter.

All connections to pipes (existing and new) shall be as per the pipe manufacturer's recommendations. Especially the PVC-HDPE pipe connections, including joint restraints and anchoring system.

#### **ITEM No. 4.07 & 4.08 – WATER SERVICES**

Water main metallic components shall be installed with anodes for corrosion protection in accordance OPSS 442. Corrosion protection for new watermains shall be included in this item unit price, no separate payment shall be made for corrosion protection.

The contract will be required to provide all labour, materials, and equipment necessary for the installation of the water services, including sawcutting and removal of asphalt, installation of curb stop, connection to the existing water service at the property line.

At any location where replacement of water services requires removal of existing sidewalk and curbs, Contractor shall include the cost to excavate, remove and dispose the full bay of concrete sidewalk and reinstate the sidewalk and curb as per requirements in **item 3.08** in this item. No additional payment item for the reinstatement of the sidewalk and curb under this item.

The installation of water services shall be in accordance with OPSS 441 and with Granular B backfill.

Measurement of service connection pipe shall be by length in metres along the horizontal centreline of the pipe from the point of connection at the watermain to a point vertically above the end of the service connection.

Payment for this item shall be at the contract unit price including excavation, dewatering, bedding, compacting, tapping and connecting to the main, supply and installation of pipe and service connection appurtenance and disposal of excess trench material.

No separate payment shall be made for connection to existing water service and repair of concrete sidewalk.

No separate payment shall be made for service connection appurtenance.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.09 – UNSHRINKABLE FILL FOR BACKFILL UNDER CULVERT**

The contract will be required to provide all labour, materials, and equipment necessary for the unshrinkable fill for backfill under culvert.

The materials and placement shall be in accordance with OPSS 1359 and OPSS 578

Measurement of unshrinkable fill shall be by volume in cubic metres.

Payment for this item shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 4.10 – UNSHRINKABLE FILL FOR BACKFILL UNDER OTHER AREAS – CONTINGENCY ITEM**

This item shall be used only upon approval by the Engineer. Payment for this item shall be at the contract unit price including material and labour for placement of the U-Fill, as deemed required by the Engineer.

**ITEM No. 4.11 – INSULATION FOR WATER MAIN**

The contract will be required to provide all labour, materials, and equipment necessary for installation of insulation of the water main where cover on the water main is less than 1800 mm.

The insulation material shall be extruded polystyrene according to OPSS 1605 with a minimum compressive strength of 275 Kpa.

The insulation installation shall be in accordance with OPSD 1109.030 and shall have a minimum thickness of 50mm.

Measurement for insulation shall be per linear meter of water main insulated.

Payment for this item shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 4.12 & 4.13 – TRENCH RESTORATION**

The contract will be required to provide all labour, materials, and equipment necessary for the trench restoration of the water main with existing pavement areas. This work includes for the supply and installation of 50mm SM insulation along the trench within rock to allow for rock squeeze.

Granular road base materials shall be Granular A and Granular B, type II in accordance with OPSS 1010.

Hot mix asphalt base coat shall be HL8 and in accordance with OPSS 1150.

Placement and compaction of hot mix asphalt shall be in accordance with OPSS 310.

Trenching, backfilling, and compaction shall be in accordance with OPSS 401.

The trench restoration includes the backfilling and compaction of the trench as per typical trench restoration detail on drawing G107. For location where resurfacing is being completed, contractor shall include cost to supply and place HL 8 that match the existing base asphalt thickness. The contractor is responsible for maintaining the trench width to a minimum at all times.

For location where the road will be reconstructed, contractor shall include cost to backfill and compaction of the trench up to the bottom of the proposed road subbase **as per trench restoration detail on drawing G107**.

Measurement shall be per linear meter of trench restoration.

Payment for this item shall be at the contract unit price including supply, hauling, placing and compaction.

There shall **be no** separate payment for trench maintenance.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

For the trench restoration areas, ramp all adjacent vertical surfaces (e.g. lip) to suit existing asphalt or valve boxes/manhole covers etc. Perform maintenance of the ramps until the final restoration of the road. This scope of work is to be included in the unit price of the item.

#### **ITEM No. 4.14, 4.15, 4.16 – WATER MAIN BENDS (CONTINGENCY)**

Water main metallic components shall be installed with anodes for corrosion protection in accordance with OPSS 442. Corrosion protection for new watermains shall be included in this item unit price, no separate payment shall be made for corrosion protection.

This item shall only apply when authorized by the Engineer.

This item shall only apply for change in the water main alignment requiring extra horizontal and vertical bends.

The contract will be required to provide all labour, materials, and equipment necessary for water main bends.

The water main bends installation shall be in accordance with OPSS 441

Measurement shall be for the total number of bends installed of each size type and size.

Payment for this item shall be at the contract unit price including excavation, dewatering, supply and installation of fitting including supply and installation of thrust block and/or joint restraint systems, corrosion protection, bedding, testing, flushing and disinfection and removal of excess material.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.17, 4.18, 4.19, 4.20 & 4.21 – GATE VALVES AND VALVE BOXES**

Water main metallic components shall be installed with anodes for corrosion protection in accordance with OPSS 442. Corrosion protection for new watermains shall be included in this item unit price, no separate payment shall be made for corrosion protection.

The approved valve manufacturer is Clow, or approved equivalent.

The contract will be required to provide all labour, materials, and equipment necessary for the installation of gate valves and gate boxes.

The gate valves and gate boxes installation shall be in accordance with OPSS 441

Measurement shall be for the total number of gate valve and boxes installed of each size.

Payment for this item shall be at the contract unit price including supply and installation of the gate valve with complete valve box unit and corrosion protection, and bedding.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.22 – VALVE BOX REMOVAL**

Remove the valve boxes to below the road surface for the areas that have reconstruction/resurfacing of the asphalt road. The General Contractor is responsible for noting on the as-builts, complete with GPS coordinates the location and depth of the removed valve box and the location of the abandoned watermain.

The contract will be required to provide all labour, materials, and equipment necessary for the removal of valve box

The removal of valve box shall be in accordance with OPSS 510.

Measurement shall be for the total number valve box removed regardless of type, depth, and size.

Payment for this item shall be at the contract unit price including excavation, removal, backfilling, and disposal.

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

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.23 – TEST DIGS**

The contractor will be required to provide all labour, materials, and equipment necessary for the test dig locations as indicated on drawings or/and directed by Engineer.

The exact location of existing water main is unknown, the Contractor shall locate the water main with a test dig prior to construction.

The exact location and invert of catch basin leads and storm mains are unknown. The Contractor shall locate the catch basins leads inverts and location by measuring in the catch basins prior to construction. The Contractor shall locate the storm main with a test dig prior to construction. This is required to provide the minimum separation distance between the water main and the sewer in accordance with MECP's guidelines.

Any person who proposes to carry out any investigation of any property relative to the proposed works shall, before entering the said property, and any other property, and before commencing the said investigation, notify the MUNICIPALITY of the said property of the nature and extent of the proposed investigation, notify the MUNICIPALITY and occupant of such other property of the access required and obtain the agreement in writing thereto of all such investigation or for making use of any access as aforesaid shall reinstate investigation and shall be responsible for all damage and claims resulting therefrom in accordance with the said agreement of such owners and occupants.

There will be no measurement or payment for depth measurement in catch basins.

Measurement for this item shall be the number of test digs.

Payment for this item shall be at the contract unit price including the locating of existing watermain and storm sewer, excavation and backfilling.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 4.24 – CAMERA INSPECTION**

All new main sewers, regardless of size, shall be inspected by a closed-circuit television camera (CCTV) unit in accordance with OPSS 409 and as specified herein. The CCTV inspection shall be carried out after the maintenance holes are raised to grade and prior to base asphalt being placed. In the case of watermains installed via rock boring the CCTV is to be completed prior to connection to other watermain sections. Where a conflict exists between this Section and OPSS 409, the requirements of this Section shall take precedence. CCTV operators shall be certified by the former North America Association of Pipeline Inspectors (NAAPI).

Measurement for a CCTV inspection of pipeline shall be measured in metres on the ground surface along the centreline of the pipe from the centre of one drainage structure to the centre of another drainage structure or outlet end of the pipe. Measurement for pipe culverts shall be from one end of the pipe culvert to the other end of the pipe.

Payment at the Contract price for the above tender item shall be full compensation for all labour, Equipment, and Material to do the work.

**ITEM No. 4.25 – ABANDONMENT OF WATER MAIN FILLED WITH GROUT**

The contractor shall have abandoned the existing water main as shown on the drawings and/or as directed by the Engineer.

Refer to attached Section 03521 – Low Density Cellular Concrete (LDCC).

Measurement shall be by cubic metre calculated based on the diameter of the pipe and the length of the pipe filled with LDCC.

Payment for abandonment of water main shall be at the contract unit price including excavation, backfilling, cuts, end caps.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

## **Section 03521 – Low Density Cellular Concrete (LDCC)**

### **GENERAL**

#### **Reference:**

This Section of the Specifications shall be read in conjunction with the Ontario Provincial Standards for Road and Public Works, which shall apply to and govern the work of this Section.

#### **Work Included:**

Design, supply, place and cure low density cellular concrete (LDCC) work as needed and other work related thereto.

#### **Quality Assurance:**

Pre-construction Meeting:

3. Arrange a pre-construction meeting with representatives of those involved with the concrete work and obtain consensus between the parties to achieve the best suited quality and workmanship for the various conditions of cellular concrete placement.

Qualifications of LDCC Contractor:

4. The approved Subcontractor producing and placing cellular concrete shall have a record of experience and quality of work that is satisfactory to the Consultant, and shall be capable of developing a mix design, batching, mixing, handling, and placing cellular concrete. The Subcontractor shall be certified by the manufacturer of the foaming agent and regularly engaged in the production and placement of cellular concrete. The Subcontractor shall have an adequate number of fully qualified workers who are thoroughly trained and experienced in the production and placement of cellular concrete.

Codes and Standards:

5. Comply with ACI 523.1R-06, Guide for Cast-in-Place Low Density Cellular Concrete.
6. CAN/CSA A3001, Cementitious Materials for Use in Concrete
7. ASTM C869, Standard Specification for Foaming Agents Usied in Making Preformed Foam for Cellular Concrete.
8. ASTM C796, Standard Test Method for Foaming Agents for Use in Producing Cellular Concrete Using Preformed Foam.
9. ASTM C495-99a, Standard Test Method for Compressive Strength of Lightweight Insulating Concrete
10. Where provisions of pertinent codes and standards conflict with these Specifications or each other, comply with more stringent provisions.

Source Quality Control:

11. Qualifications of Concrete Supplier:
  - a) LDCC foaming agent supplier must be experienced in production of foam for LDCC.

12. Concrete Quality:

- a) Mix design shall be prepared to the satisfaction of the LDCC foam supplier and the Consultant.

Field Quality Control:

13. Density:

- a) Wet cast LDCC shall have a density of 475 kg/m<sup>3</sup> (+/-10%).
- b) The fresh cellular concrete density shall be measured and recorded once per production run, or once for every 50 cubic metres, or once per 30 minutes, whichever is more frequent. The density shall be maintained within +/- 10 % of the design density.
- c) Cellular concrete samples must be captured, cured, and tested to verify the compressive strength requirement is satisfied. One sample is comprised of one set of six cellular concrete cylinders. One sample should be taken for each placement, or every 100 cubic metres, whichever is more frequent. Cylinders are cast in 76 mm diameter by 152 mm long cylindrical plastic molds. The sample mold must be lined with "freezer paper" with the plastic side against the cellular concrete. Cellular concrete cylinders shall be cured and tested as per ASTM C495-99a.

14. Voids:

- a) Void spaces that are filled with LDCC will be inspected to ensure that the void space is completely filled with no air pockets between the LDCC and the boundaries of the cavity.

**Submittals:**

Mix Design:

15. Submit to the Consultant for review, mix designs for the LDCC that will be used.
16. Identify the type and source of raw materials used in the production of the LDCC.

Certificates:

17. Submit in writing approval from the LDCC foam supplier of the mix design, as well as approval of the approved subcontractor.

**Field Quality Control:**

Concrete Quality Control:

18. The Contractor is responsible for ensuring and demonstrating the placed concrete meets the performance requirements specified.
19. Density of concrete will be measured on site to ensure it meets the requirements of this specification.
20. When material properties do not meet the requirements of this specification, remedial measures will be taken including the right to order the replacement of substandard LDCC in order to meet specification criteria. Cost associated with failure to meet specifications will be at the Contractor's expense.



**Delivery, Storage and Handling:**

Deliver, store, and handle materials in a manner which prevents contamination from foreign matter and damage.

Deliver material in accordance with the requirements of ACI 523.1R-06.

**Job Conditions:**

Refer to ACI 523.1R-06 for cold weather and hot weather requirements.

**PRODUCTS**

**Materials:**

Liquid Foam Concentrate

- Mearlcrete supplied by Cellular Concrete Solutions, Allentown, PA, or approved equal.

Slag Cement - CSA A3001.

Water: - Potable water free of deleterious substances.

Admixtures: - Air Entraining admixtures, Chemical admixtures, High Range Water Reducing admixtures and Mid Range Water Reducing admixtures, complying with requirements of CSA Standard A266.1 and manufactured by:

- a) BASF or,
- b) Grace Construction Products or,
- c) The Euclid Chemical Company

**Mixes:**

The Contractor is responsible for designing and adjusting the concrete mix to suit placement procedures. Concrete mixes must still achieve the performance requirements outlined herein regardless of the method of placement being utilized.

**EXECUTION**

**Examination:**

Inspection:

- 21. Prior to the work of this Section, carefully inspect the installed work of other trades and verify that such work is complete to the point where concrete work may properly commence.
- 22. Verify that concrete will be placed in strict accordance with design, pertinent codes and regulations, and the reviewed shop drawings.

Discrepancies:

23. In the event of discrepancies, immediately notify the Consultant.
24. Do not proceed with installation in areas of discrepancy until such discrepancies have been resolved.

**Preparation:**

Do not start placing concrete until the areas receiving the LDCC have been prepared and the Consultant has inspected forms.

All debris is to be removed; surfaces pressure washed clean and dried prior to pouring LPCC into void areas.

**Construction:**

Placing:

Refer to Section 7.2 of CSA A23.1-09, and as follows:

25. Any items to be fully or partially encased in the cellular concrete shall be properly set and stable prior to the installation of the cellular concrete.
26. Where required, formwork should be designed and installed to withhold cellular concrete, and may require lining with poly sheeting or similar impermeable membrane to prevent leakage.
27. Cellular concrete may be placed during freezing conditions, provided measures are taken to prevent damage to the cellular concrete until sufficient strength has been attained. Care should be taken to avoid freezing before initial set. Cellular concrete must not be placed during heavy or prolonged precipitation.
28. Once mixed, the cellular concrete shall be conveyed promptly to the location of placement without excessive handling.
29. The Constructor shall determine the maximum lift thickness based on density and any other considerations that may impact placement. Cellular concrete shall be cast in a formed area within 1 to 2 hours, to permit an undisturbed setting.
30. Placement of cellular concrete within void spaces or cavities shall be done using methods to eliminate trapped air from the cavity.
31. Loading of, or traffic on the cellular concrete shall be prevented until the material has attained sufficient strength to withstand the loads with no damage. Backfill can commence with cellular concrete supports foot traffic without leaving an indentation.
32. Do not place concrete under water except where specified or permitted in writing by the Consultant.
33. Refer to Subsection 6.4.6 & Table 15 of CSA A23.1-09, and comply with the following:

END OF SECTION 03521.

**ITEM No. 4.26 – UTILITY ADJUSTMENT**

The Contractor will be required to provide all labor, material, and equipment necessary for the adjustment of utilities including manhole covers to grade, catch basin frames and grates to finished asphalt grade, valve boxes, valve chambers in accordance with OPSD 704.010.

**ITEM No. 4.27 – COMBINATION AIR VALVE WITH CHAMBER AND DRAIN**

The contract will be required to provide all labour, materials, and equipment necessary for the installation of combination air valve with chamber and sizes on Contract Drawings.

The combination valve and chamber shall be in accordance with OPSS 441

The drain installation shall be in accordance with OPSS 410

Measurement shall be for the total number of air release valve with chamber, regardless of size **drain installed**.

Payment for this item shall be at the contract unit price including drain pipe, supply and installation of chamber, excavation, dewatering, backfilling, insulation, testing, ladder and all other items shown in details drawings for the Combination valve with chamber.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. 4.28 – HYDRANT SETS**

The hydrant sets installation shall be in accordance with OPSD 1105.010 . Refer to Appendix E for “Hydrant Installation with Tracer Wire and Shock Collar Locate Station” detail.

Water main metallic components shall be installed with anodes for corrosion protection in accordance OPSS 442. Corrosion protection for new watermains shall be included in this item unit price, no separate payment shall be made for corrosion protection.

Hydrant shall be Canada Valve ‘Century’ or approved County equivalent. Hydrant shall have two 60mm Outlets with 5 threads per 25mm, nominal 1.8m bury, open left with tyton joint to base. Hydrant shall have two 60mm and one 100mm outlet.

Hydrants shall be self-draining with anchor tee. Drain hole to have geotextile covering.

The hydrant flanges shall be higher than the crown of the adjacent road or the top of the adjacent curb whichever is higher. Flanges shall be placed such that connecting bolts can be easily removed, 100mm above finished grade.

All hydrants shall be protected with 7.7kg magnesium anodes. Hydrants shall have 150mm PVC DR18 leads c/w tracer wire, a 150mm Gate Valve and box, and all joints completely restrained. Also, to be included is the DI anchor tee for connection to the mainline water main.

Tracer wire shall be connected to "Finklet CP Test Station" c/w stainless steel connection ports and bonding strap, yellow in color.

Hydrants shall be painted Chrome Yellow.

Due to the possible presence of petroleum based products (now or in the future) nitrile gaskets are to be used for the water distribution network.

All hydrants to be equipped with Wachs Canada Ltd. "pretzel" hydrant marker (WC-HYD-MK).

Hydrants shall be located 1.0m off property line and to be located at projection of abutting lot lines, unless shown on plans.

Each hydrant shall be flow rated by the contractor in accordance with Installation, Field Testing, and Maintenance of Fire Hydrants AWWAM17 and by the County's Standards in Appendix D, and Special Provisions – General Item 54 - Commissioning. The rating notes shall be provided to the contract administrator prior to issue of Certificate or Letter of Substantial Completion of Underground Infrastructure. The hydrant flow test cost shall be included in this unit price item, where 10% of the cost, will be held until the test has passed, afterwhich it will be paid out

Measurement shall be for the total number of hydrant sets installed.

Payment for this item shall be at the contract unit price including excavation, fittings, tee, pipes, bedding, gate valve, valve box, supply and installation of thrust blocks, anchors, mechanical restraints, bedding, backfilling, corrosive protection and testing.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.29 – HYDRANT EXTENSION IN 150MM LENGTHS – CONTINGENCY ITEM**

This item shall be used only upon approval by the Engineer, and only for the cases where the elevations and grading showed/implied/interpolated in the Contract Documents are different from the site elevations and conditions.

Payment for this item shall be at the contract unit price including material and labour for installing the hydrant extension (in 150mm lengths), as deemed required by the Engineer.

#### **ITEM No. 4.30 – SELF DRAINING SAMPE HYDRANT**

The Contractor shall supply and install a self draining sample hydrant meeting the County's standards at the corner of Pitt and Old Church.

The hydrant shall be heavy duty type with stainless steel stand pipe and with an inlet of 19mm as supplied by Boshart Industries or an approved equivalent.

Measurement for this item shall be by the number of self-draining sample hydrant installed.

Payment for this item shall be at the contract unit price including excavation, dewatering, tapping and connecting to the main, supply and installation of pipe and connection appurtenance and disposal of excess trench material.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.31– CLAY SEALS**

The contract will be required to provide all labour, materials, and equipment necessary for the installation of clay seals in trench as shown on the drawings.

Material for clay seals shall be in accordance with OPSS 1205

Clays seals shall be installed in accordance with OPSD 802.095

Measurement shall be for the total number of clay seals installed regardless of the type and size.

Payment for this item shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.32 – PIPE CASING INSTALLED BY JACKING AND BORING**

The Contractor will be required to provide all labor, material and equipment necessary including steel casing pipe, casing spacers and casing end caps for the installation of the water main by Jacking and Boring in accordance with OPSS 416.

Casing spacers shall be Metallic Casing Spacer Coated in the centered/restrained position with a 203 mm wide steel band by Power Plant Supply Company Ltd.

Casing end caps shall be water tight Model S Casing End Seal by Power Plant Supply Company Ltd.

Metallic components shall be installed with anodes for corrosion protection in accordance with OPSS 442.

Measurement for the casing installation shall be in meters along the centerline of the casing between the connection points or work completed. No additional payment shall be made for end pieces to achieve the design length.

Payment for the casing pipe shall be at the contract lump sum.

Payment for the water main shall be at the contract unit price under item 4.04. For this item, the watermain is to be restrained inside the casing.

Corrosion protection for new watermains shall be included in this item unit price, no separate payment shall be made for corrosion protection.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.33 – JACKING BORING ENTRANCE SHAFT**

The Contractor will be required to provide all labor, material and equipment necessary for the installation and removal of a watertight interlocking steel sheet pile shaft for the Jacking and Boring operation in accordance with OPSS 416. This includes for backfilling with U-Fill to the underside of road subgrade, and installation of granular road base. The contractor is responsible for sizing the shaft but also allow for emergency and Operations access.

Payment for this item shall be at the lump sum price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.34 – JACKING BORING EXIT SHAFT**

The Contractor will be required to provide all labor, material and equipment necessary for the installation and removal of a watertight interlocking steel sheet pile shaft for the Jacking and Boring operation in accordance with OPSS 416. This includes for backfilling with U-Fill to the underside of road subgrade, and installation of granular road base. The contractor is responsible for sizing the shaft but also allow for emergency and Operations access.

Payment for this item shall be lump sum price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

This item is to include the backfilling of the shaft with County approved material. Do test pits for the shaft shop drawings and provide Ontario P.Eng. stamped shop drawings for the Owner and Engineer for review.

#### **ITEM No. 4.35 – DRAIN VALVE CHAMBER**

The Contractor will be required to provide all labor, material and equipment necessary for the installation of the Drain Valve Chamber in accordance with OPSS 407. This item is to include for associated appurtenances, including drain line and red valve tide flex.

Metallic components shall be installed with anodes for corrosion protection in accordance with OPSS 442. Corrosion protection for new watermains shall be included in this item unit price, no separate payment shall be made for corrosion protection.

Measurement shall be for the total number of Drain Valve Chambers installed.

Payment for this item shall be at the contract unit price.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 4.36 – ABOVE GROUND AIR BLOW OFF WITH ISOLATION VALVE**

The contract will be required to provide all labour, materials, and equipment necessary for the installation of an above ground air blow off, complete with isolation valve in accordance with OPSD 1104.030. The termination of the air blows off is to be at least 1200mm above grade, off of the road and within the road right of way, with a visible sign notifying of air blow off. The valve is to be secured and locked out for Operation staff access only.

Measurement shall be for the total number of “above ground air blow off with isolation valve” installed.

Payment for this item shall be at the contract unit price including piping, equipment, supply and installation, excavation, dewatering, backfilling, insulation, testing and signage.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being part of and included with the work for which prices are given in the contract.

The above ground air blow offs are to replace the air release valve chambers shown on drawing G102, G105 (air release valve chamber to the south of the jack and bore section) and G110. The remaining air release valve chamber to the north of the jack and bore section is a provisional item and is to be undertaken only if directed by the Owner.

**ITEM No. 4.37 –CONNECTION TO EXISTING WATERMANS (ALL SIZES)**

Reference: OPSS 441, 491, 492, 510

The scope of Work:

- Coordination with the County and affected property owners to shut-down existing watermains.
- Excavate to grade and dispose of surplus materials off-site
- Measure for the manufacture of pipe materials to complete the closure section.
- Backfill with Select Native Material and compact. Existing watermains to be turned on.
- Provide shop drawings including welding details to the Contract Administrator two weeks before construction.
- Upon delivery of the closure piece, re-excavate to grade (including coordination to shut-down existing watermains).
- Supply all concrete pressure pipe materials including steel closure sleeves.
- Remove and dispose of existing watermain pipe, bulkheads, hydrants, fittings and concrete thrust blocks, including draining water from excavation as required to connect to the existing watermain.
- Install pipe sections, complete the welded connection and supply and install cement grout diaphragm to encase the closure section.
- Welding services by a certified welder by CSA W47.1. Welded joints shall not be backfilled without first being inspected by the County. The County may retain a separate firm which specializes in visual and electronic weld testing.
- Tracer wire and cathodic protection in accordance with OPSS.
- Bedding and cover as specified on the Contract Drawings.
- It is carefully shaping the bedding to receive the bottom of the pipe.
- Supply and installation of 14.5kg magnesium anode on the existing tracer wire.
- Supply and place compacted SSM backfill under existing and proposed pavement areas to proposed road subgrade.
- Supply and place compacted Granular 'B' backfill adjacent to maintenance holes, catch basins, utility crossings and other areas where it is difficult to compact native materials.
- Connections to existing mains shall be made only after the affected section of the waterworks has been isolated, and the new main has been completed, including swabbing (watermains smaller than 400mm dia.), chlorination, testing and flushing. Extreme care shall be taken to prevent contamination of the existing water main and new connection.

Note:

- Closure connections to be completed using split sleeve welded joint complete with cement mortar encasement according to C.P.P. manufacturer's recommendations.



- Concrete thrust blocks are not permitted on new PVC pipe.

Measurement shall be by the location of the closure piece indicated in the Schedule of Items, Unit Prices and Summary. No additional payment will be made should the Contractor requires additional closure pieces.

The basis of Payment at the Contract price for the above Tender item shall be full compensation for all labour, Equipment and Material to do the work.

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### WORK SPECIFICATION DETAILS

#### SECTION 5 – LANDSCAPING & SOIL MANAGEMENT

##### ITEM Nos. 5.01– SUPPLY AND GRADE TOPSOIL (150mm DEPTH)

Reference: OPSS 570

This item is for areas where slope protection and erosion control measures are required at the time of filling areas or where a new grass boulevard has been added, or to reinstate the grassed landscape (i.e. by the Picton Heights Reservoir), or as shown on the drawings.

Work under this item shall be completed in accordance with OPSS 570 and OPSS 571 and for the unit price bid shall include the following:

- Imported topsoil shall be screened topsoil. Topsoil delivered in an unscreened condition will not be accepted under any circumstances.
- The specified topsoil thickness for this Contract shall be a minimum of 150 mm. Topsoil thickness will be checked to confirm the minimum specified depth(s) has been provided. Where the minimum depth has not been achieved, no measurement for payment will be made.
- Areas damaged by the Contractor beyond the project limits shall be restored with topsoil where necessary prior to carrying out sod or seed repairs. No measurement or payment will be made for this work.
- Remove of stones / debris greater than 25 mm in size before sodding.

Areas where the ground cover has been damaged by the Contractor beyond the project limits shall be restored at the Contractor's expense and shall not be included in the area measured for payment. If the nature of the proposed Contract work does not permit completion of activities without damage beyond the Contract grading limits illustrated on the plans, then the Contractor shall review all anticipated areas where it is felt unavoidable damage will occur and shall allow for the necessary restorative measures and their related costs to complete the respective items of work.

Due to the steep slopes of the new fill embankment, contractor shall surface roughening (scarification) to minimize erosion and sediment when the embankment slopes is left temporarily exposed.

Payment shall be made at the Contract price for the areas receiving topsoil by the square metre. Payment at the Contract unit price shall be full compensation for supply and placing topsoil, surface roughening and for all other items of work necessary to complete topsoiling the surfaces in accordance with the Contract requirements.

#### **ITEM No. 5.02 - SOD**

The contract will be required to provide all labour, materials, and equipment necessary for sodding, including but not limited, to the reinstatement of the grassed area in front of the Picton Heights Reservoir for the watermain connection and the grass boulevard between County Road 22 and the new sidewalk.

Use 150 mm for topsoil thickness as per Item 5.01 and reference OPSS 802.

Use Kentucky Bluegrass/Fine Fescue for the type of SOD as per reference OPSS 803

Measurement for sod shall be by area in square metres following the contours of the ground.

Watering of sod at a rate of not less than 22.5 litres per square metre (unless otherwise directed by the Engineer) as often as required to assure growth until maintenance period elapses.

Payment at the Contract price for sod shall be full compensation for all labour, Equipment, and Material to do the work

Areas where the ground cover has been damaged by the Contractor beyond the project limits shall be restored at the Contractor's expense and shall not be included in the area measured for payment. All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 5.03 - HYDROSEED**

The contract will be required to provide all labour, materials, and equipment necessary for hydroseeding and sodding.

Use Salt Tolerant Mix – Canada #1 Ground Cover Mixture for hydroseed mix and supply erosion control blankets for sloped areas, as per reference OPSS 804.

Use 150 mm for topsoil thickness as per Item 5.01 and reference OPSS 802.

Hydroseed measurement shall be in square metres following the contours of the ground without any allowance for overlap.

Payment at the Contract price for hydroseed shall be full compensation for all labour, Equipment, and Material to do the work

Payment at the Contract price for sod shall be full compensation for all labour, Equipment, and Material to do the work

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

#### **ITEM No. 5.04 - SOIL MANAGEMENT      OPSS 180**

The Municipality is committed to proper soil management practices through this contract, including the disposal of excess materials offsite, in accordance with the Part XV.1 of the Environmental Protection Act.

A detailed environmental soil investigation was not conducted on this project. However, the soil can be expected to have elevated Sodium Absorption Ratio and Electrical Conductivity due to typical winter de-icing operations (road salt). The impacted soil is acceptable for reuse as backfill in the roadway.

**In this regard, the Contractor shall be required to facilitate the requisite laboratory testing of all soils prior to removal offsite, including the storage of same on site during construction.** The Municipality will also be collecting soil samples and conducting their own laboratory testing. The testing protocol will be based on procedures outlined in "*Proposed Policy For Management of Excess Soil, Rock and Like Materials*" and "*Soil, Groundwater and Sediment Standards For Use Under Part XV.1 of the Environmental Protection Act*".

**The Contractor shall be responsible for all costs related to moving, storing, handling and locating soils within the construction site to affect the necessary soils testing. Following receipt of sufficient test results, the Contractor shall be responsible for all costs related to loading, reloading and disposing of soils on and off-site as may be required.** It shall be assumed that laboratory tests can take upwards of seven (7) business days to complete, and that an additional three (3) days are required for professional analysis and determination on course of action.

**In addition, the Contractor shall be required to find and secure appropriate off-site disposal sites in advance of any excavation which requires disposal off-site. The Contractor shall be required to remit a list of proposed disposal sites to the Municipality for review and consideration.** The sufficiency of each site will be determined by the Municipality, in accordance with MOE Regulation 153 and MOE *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act*.

**The Contractor shall be required to secure written waivers from landowners as per OPS 180.** The Contractor is advised that the Municipality, as owners of the soils, maintains its sole right and privileges with respect to how the soils are managed, where the soils are disposed of and the manner in which the soils are disposed of. The Contractor is advised that soils are not permitted to be moved off-site without the express written consent of the Municipality throughout the duration of this contract.

All asphalt and granular material that has to be removed in order to complete the works is classified as Recycled Road Building Product and as such can be transported to a municipal stockpile or licensed gravel pit for reuse (Note: the Municipality does not have a municipal stockpile or licensed gravel pit available for storage of asphalt and granular material at this time). It is expected that any soil that is excavated in order to complete the works will be suitable for reuse as backfill within the roadway. However, there will be excess soil that must be disposed offsite at approved industrial, commercial and/or community sites in accordance with Tables 2 and 3 of the MOE Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. (Note: Offsite disposal of any excess soil shall not be permitted to residential, parkland and/or institutional sites). The volume of excess soil will be approximately equal to the volume of the proposed water mains, sewers and appurtenances (including imported granular bedding) as well as the volume of any imported granular for the road base and any unsuitable material.

Payment for all work outlined in this specification shall be included in the lump sum price tendered for "Soil Management". Payment shall be made on each payment certificate based on the value of work completed to date as a percentage of the total contract amount. The total value of this item shall not exceed 100% of the Contract lump sum price.

#### **ITEM No. 5.05 – DISPOSAL OF EXCESS SOIL TO A LICENSED LANDFILL OPSS 180**

This item shall only apply where authorized by the Engineer.

Disposal of excess soil at a landfill licensed by the Ministry of Environment, including loading, trucking, unloading and tipping fees.

Pay quantity shall be based on the weight of excess soil disposed of at a licensed landfill based on receipts provided by the landfill operator.

#### **ITEM No. 5.06 – RIP RAP R25**

The contract will be required to provide all labour, materials, and equipment necessary for the supply and installation of rip rap R25.

The material for rip rap R25 shall be in accordance with OPSS 1004.

The material for geotextile shall be in accordance with OPSS 1860.

The installation or rip rap shall be in accordance with OPSS 511.

Measurement of rip-rap shall be by area in square metres following the contour of the ground.

Payment for this item shall be at the contract unit price including excavation, hauling, placement, disposal of excess material and geotextile.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

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**STREET LIGHTING ELECTRICAL**

**ITEM NO. E1 – PERMITS AND HYDRO CONNECTIONS**

Reference: The requirement OPSS 106 shall apply to this work.

The Contractor shall obtain any necessary inspections and permits as required by Hydro One Connections and/or the Electrical Safety Authority (ESA). The Contractor shall obtain permits for all work and shall file applications for inspection with Hydro One Connections and/or Electrical Safety Authority as required and arrange for Hydro One Connections and/or Electrical Safety Authority inspectors to review work at the appropriate stages, arrange for de-energizing and re-energizing of the streetlight cable and provide acceptance/inspection certificates upon completion of work. The Contractor shall pay all fees related to permits, applications and inspections for the necessary completion of the Contract as outlined.

Invoices/receipts must be submitted for payment. **The Contractor will be reimbursed for the actual cost only (no mark-up invoices will be allowed).** Any additional amount of cash allowance remaining after disbursement of invoices/receipts will revert to the County.

For connection with EH21, the Contractor will be provided with an allowance of \$5,000 for connection and \$1,200 for inspection, remitted once invoices are provided by the Contractor and the hydro company. The Contractor will be reimbursed for the actual cost only (no mark-up invoices will be allowed).

**ITEM NO. E2 – SUPPLY AND INSTALL DUCT, BY OPENCUT, DIRECT BORE**

Reference: The requirement OPSS 603 shall apply to this work.

Standard Drawings: OPSD-2101.01, 2103.02, 2103.05

Duct supplied shall be as follows:

- |     |       |                                |
|-----|-------|--------------------------------|
| (a) | Size: | 1-50mm DIA. Open Cut           |
|     | Type: | Rigid PVC, CSA C22.2 No. 211.2 |
| (b) | Size: | 1-100mm DIA. Direct Bore       |
|     | Type: | HDPE                           |

Subsection 603.07.01 is amended by the addition of the following:

The Contractor shall supply and install duct as specified on the Contract Drawings.

The conduits shall be located to a depth of 760mm min. below grade or at rock depth. Duct joints shall be made with the use of sleeves which permit a smooth joint between ducts. All joints shall be made waterproof by means of couplers and sealants. Any unused ducts shall be plugged with plastic plugs for future use.

Ducts shall have standard "bell" ends connection to all electrical chambers.

For duct crossing at roadway, driveway or sidewalk, the Contractor shall supply and install High Density Polyethylene conduit meeting CSA Standard C22.2 No. 211.2 by directional bore method. Minimum conduit depth shall be 1.2 m below final grade. The price to include cost of road crossing, boulevard and sidewalk repairs where applicable.

Subsection 603.07.14 is amended by the addition of the following:

The Contractor shall install electrical caution tape at least 300mm above installed ducts.

Subsection 603.07.16 is amended by the addition of the following:

The Contractor shall reinstate all areas disturbed during this installation back to its original state or better.

Subsection 603.07.18 is amended by the addition of the following:

The Contractor shall supply and place through each duct sufficient #10 annealed fish wire or equivalent. Fish wire shall be an strength polyline for purposes of pulling in the necessary cable for street lighting. The Contractor shall leave extra fish wire in duct for future cable pulling.



Subsection 603.10.01 is amended by the addition of the following:

The unit price for the above tender items shall include all labour, equipment, and materials required to complete the work as specified including excavation, pavement removal, backfilling, all fittings, breaking into existing electrical concrete chambers, parging where required, and under existing sidewalks.

**ITEM NO. E3 – SUPPLY AND INSTALL STREET LIGHTING CABLE, IN DUCT**

Work for this item shall be completed in compliance with OPSS 602 and the following SP. The Contractor shall supply and install concrete handholes and covers in the locations as indicated on the Contract Drawings and in accordance with MTO Standards.

Electrical chambers supplied / constructed shall be as follows:

- (a) Size: 460mm DIA.
- Type: Precast Concrete
- Manufacturer: N/A
- Std's: OPSD 2112.02
- Notes: N/A

**Basis of Payment**

Payment shall be made at the Contract unit price for each handwell installed / constructed and shall be full compensation for all labour, materials and equipment required to complete the Work as specified in the Contract Documents.

**ITEM NO. E4 – SUPPLY AND INSTALL STREET LIGHTING CABLE, AERIAL**

**ITEM NO. E5 – SUPPLY AND INSTALL STREET LIGHTING CABLE, RISER IN POLES**

Reference: The requirement OPSS 604 shall apply to this work.

Subsection 604.07.01 is amended by the addition of the following:

The Contractor shall supply and install cables in ducts in the locations as indicated on the Contract

Drawings and as per Hydro One Connections Standards.

Street light cable in duct shall be supplied as follows:

- (a) Size: 1-1/C, #6 AWG
- Type: RWU90 (-40°C), XLPE, Insulated (Black, Red & White) stranded copper (Cu), 600V
- 90°C, CSA C22.2 No. 38

Manufacturer: Nexans (or Approved Equal)

Cat. No.: N/A

Notes: 1. Cables must be rated and marked for outdoor usage.

The Contractor shall supply and install cable risers as per the pole manufacturer standards and Hydro One Connections Standards.

Street light riser cables shall be supplied as follows:

(a) Size: 1-1/C, #12 AWG

Type: RW90 (-40°C), XLPE, Insulated (Black & White) stranded copper (Cu),  
600V 90°C, CSA C22.2 No. 38

Manufacturer: Nexans (or Approved Equal)

Cat. No.: N/A

Notes: 1. Cables must be rated and marked for outdoor usage.

The Contractor shall supply and install low voltage power cables as indicated in the Contract drawings and as per Hydro One Connections Standards

Subsection 604.07.15.01 is amended by the addition of the following:

The Contractor shall prove that the lighting system operates effectively by energizing each circuit from a portable 120 VAC generator if needed for a sufficient period of time to bring each luminaire connected to that circuit to full brilliance.

The Contractor will be responsible to coordinate with Hydro One to connect the street lighting circuit.

Subsection 604.09.01.01 is amended by the addition of the following:

Measurement for payment shall be based on the actual amount of cables installed, in metres.

Subsection 604.10.01 is amended by the addition of the following:

The unit price for the above tender items shall include all single conductor AWG type RWU90 cables, all labour, equipment and materials required to complete the work specified regardless of size and type of duct that the cable is to be installed in, and shall also include all cable connections, cable testing, coiled cables, slack cables, waste cables and all vertical runs of cable from pedestals to pole handholes. In addition, the unit price shall include any coordination with Hydro One.

**ITEM NO. E6 – LOW VOLTAGE POWER CABLE IN DUCTS: #2 AWG**

Reference: OPSS 604 and Contract Drawings

The Contractor shall supply and install cables in ducts in the locations as indicated on the Contract Drawings.

The Contractor shall provide #2 AWG stranded copper (Cu) RWU90 unjacketed XLPE 600 volt cables of sufficient length to reach from the supply disconnect to the Hydro demarcation point. The Contractor shall leave a cable coiled at the 'service entrance fitting' for the final connection by Hydro Authority to the existing secondary bus / transformer.

Low voltage power cable supplied shall be as follows:

- a) Size: 1/C, #2 AWG  
Type: RWU90 (-40°C), XLPE, Insulated (Black, Red & White) stranded copper (Cu), 1000V 90°C, CSA C22.2 No. 38-05  
Manufacturer: Nexans (or Approved Equal)  
Cat. No.: N/A  
Notes: 1. Cables must be rated and marked for outdoor usage.

#### Basis of Payment

The unit price shall include all single conductor AWG type RWU90 cables, all labour, equipment and materials required to complete the work specified, and shall also include coiled cables, slack cables, waste cables and all vertical runs. In addition, the unit price shall include any coordination with Hydro Authority.

**ITEM NO. E7 – SUPPLY AND INSTALL GROUND CABLE, IN DUCT**  
**ITEM NO. E8 – SUPPLY AND INSTALL GROUND CABLE, RISER IN POLES**  
**ITEM NO. E9 – SUPPLY AND INSTALL GROUND ELECTRODES**

Reference: The requirement OPSS 609 shall apply to this work.

Subsection 609.05.01 is amended by the addition of the following:

Ground electrode(s) shall be supplied as follows:

- (a) Size: ¾" (19mm) DIA. x 10' (3000mm) Length  
Type: Rod (Copper Clad)  
Manufacturer: ERICO 'ERITECH' (or Approved Equal)  
Cat. No.: 613412  
Details: N/A  
Notes: 1. Thermit weld connections to be provided

Subsection 609.05.04 is amended by the addition of the following

Ground cable shall be supplied as follows:

- (a) Size: 1-1/C, #6 AWG  
Type: RWU90 (-40°C), XLPE, Insulated (Green) stranded copper (Cu),  
600V 90°C, CSA C22.2 No. 38  
Manufacturer: Nexans (or Approved Equal)  
Cat. No.: N/A  
Notes: 1. Cables must be rated and marked for outdoor usage.

Ground riser cable shall be supplied as follows:

- (a) Size: 1-1/C, #12 AWG  
Type: RW90 (-40°C), XLPE, Insulated (Green) stranded copper (Cu),  
600V 90°C, CSA C22.2 No. 38  
Manufacturer: Nexans (or Approved Equal)  
Cat. No.: N/A  
Notes: 1. Cables must be rated and marked for outdoor usage.

Subsection 609.07.01 is amended by the addition of the following:

The Contractor shall supply and install ground cables and ground rods in the locations as indicated on the Contact Drawings, including work all earth excavation, backfill, installation of ground wire in ducts or trenches regardless of the type and size of ground wire, all connections, and testing required.

Poles with ground rods are to be connected to the grounding system by a #6 AWG, Bare, Copper (Cu) ground cable (Green).

The Contractor shall supply and install ground riser cables in the poles as indicated on the Contact Drawings. Ground wire shall be installed from the fixture to the ground lug in each pole. Ground wire shall be secured to ground rods by means of a thermite weld connection

#### **ITEM NO. E10 – SUPPLY AND INSTALL IN POLE BREAKER**

Reference: The requirement OPSS 614 shall apply to this work.

Subsection 614.05.02 is amended by the addition of the following:

The Contractor to supply and install in-pole breaker in accordance with the contract drawings and City of Brantford Specifications.

The Contractor shall leave sufficient wire (#2 AWG Red, Black, and White) coiled at the padmount

transformer for the connection to the secondary buss by Hydro One.

The ground wire and ground rods for the power supply will be installed and paid under other items.

In-pole breaker to be supplied as follows:

- a)     Size:            50A, 120V, 1PH, 2W  
          Type:           In-Pole  
          Manufacturer: Eaton  
          Cat. No.:     2SL500PCO  
          Notes:        N/A

Subsection 614.07.01 is amended by the addition of the following:

The Contractor shall supply and install pole mounted power supply disconnects in the locations indicated on the Contact Drawings and as per Hydro One Connections Standards.

The Contractor shall make prior arrangements with Hydro One Connections, AT LEAST TWO (2) WEEK prior to installing any services on existing Hydro One Connections poles.

It shall be the Contractor's responsibility to arrange with Hydro One Connections for the connection of the street lighting to the source of supply. The Contractor shall contact Hydro One Connections for coordination of all work to be done on hydro poles.

The ground wire and ground rods for the power supply shall be installed and paid for under other Contract items.

It shall also be the Contractor's responsibility to obtain an "Inspection Clearance" from the Electrical Safety Authority. The "Inspection Clearance" must be obtained well in advance of the power turn on to ensure Hydro One Connections will receive it prior to turn on.

The installation of the power supply equipment and the power connection must be completed very early in the Contract to ensure there is no delay to the illumination turn on. Therefore, the Contractor must have early communication with the Hydro One Connections to ensure that their requirements (i.e., permits and inspections) have been satisfied. The Contractor shall be required to notify Hydro One Connections and arrange for the earliest possible power connection.

This item shall include all conduit, fittings, couplings, pipe straps, mounting hardware and accessories required to install the power supply disconnect on the Hydro poles in accordance with applicable Hydro One Connections standards and as per the details on the Contract Drawings.

Final connection to secondary supply is to be completed by Hydro One Connections.

Subsection 614.10.01 is amended by the addition of the following:

Payment for the above tender item shall be made at the Contract unit price per power supply assemblies installed. Payment shall include the disconnect, wiring, all ESA inspection fees, all labour, materials, hardware, all other equipment required to complete the installation. The Contractor is responsible to arrange and pay for ESA inspection and to rectify any and all deficiencies to ultimately produce a permit from ESA permitting circuit energization by Hydro One Connections.

**ITEM NO. E11 – SUPPLY AND INSTALL CONCRETE POLES**

Reference: The requirement OPSS 615 shall apply to this work.

Standard drawings: OPSD-2200.020, 2220.01, 2255.020, and 2225.010.

The Contractor shall supply and install new 9.8m concrete poles at locations indicated on the contract drawings. Hampton Class B – USI Part # HA-325-B-1-PG-10-X or approved equal. Work includes all required earth excavation, backfill and removal and disposal of surplus or unsuitable material.

The unit price for the above tender item shall include all labour, equipment and materials required to install each steel pole, including all hardware, and adjustments required. The unit price shall be fixed regardless of installation methods and/or site conditions. Any additional cost for installation in shale, utility conflicts, locates delay or errors will not be considered.

**ITEM NO. E12 – SUPPLY AND INSTALL LUMINAIRE ARM BRACKETS, ON POLES**

**ITEM NO. E13 – SUPPLY AND INSTALL LUMINAIRES, ON ARM BRACKETS**

Reference: The requirement OPSS 617 shall apply to this work.

Subsection 617.05.01.01 is amended by the addition of the following:

The Contractor shall supply and luminaires in the locations indicated on the Contract Drawings and as per Durham region standards.

Luminaires supplied shall be as follows:

- (a) Size: 82W Luminaire
- Type: LED, Cobra Head P1
- Colour / Finish: Grey
- Manufacturer: LEOTEK ELECTRONICS
- Cat. No.: GCM2-30H-MV-NW-2R-GY-850 (or Approved Equal)

- |     |                  |  |
|-----|------------------|--|
|     | Note:            | Luminaires to include photocell              |
| (b) | Size:            | 82W Luminaire                                |
|     | Type:            | LED, Cobra Head P2                           |
|     | Colour / Finish: | Grey   |
|     | Manufacturer:    | LEOTEK ELECTRONICS                           |
|     | Cat. No.:        | GCM2-30H-MV-NW-4-GY-850 (or Approved Equal)  |
|     | Note:            | Luminaires to include photocell              |
| (c) | Size:            | 60W Luminaire                                |
|     | Type:            | LED, Cobra Head P3                           |
|     | Colour / Finish: | Grey   |
|     | Manufacturer:    | LEOTEK ELECTRONICS                           |
|     | Cat. No.:        | GCJ2-20H-MV-NW-2R-GY-850 (or Approved Equal) |
|     | Note:            | Luminaires to include photocell              |

Subsection 617.05.06 is amended by the addition of the following:

The Contractor shall supply and install new elliptical brackets and relocate existing elliptical brackets, at locations indicated on the Contract Drawings and as per County of Prince Edward Standards.

Luminaire arm brackets supplied shall be as follows:

- |     |                  |                  |
|-----|------------------|------------------|
| (a) | Size:            | 2.4 m (12ft) Arm |
|     | Type:            | Aluminum         |
|     | Colour / Finish: | Standard         |

Subsection 617.07.01 is amended by the addition of the following:

It is the Contractor's responsibility to meet the qualifications outlined by EUSA/ ESA should there be any work done on or near Hydro One Connections equipment.

Subsection 617.07.05.01 is amended by the addition of the following:

All street lighting luminaires shall comply with all applicable requirements of CSA Standard C22.2 No.9 "Electrical Lighting Fixtures".

Subsection 617.10.01 is amended by the addition of the following:

The unit price for each luminaire shall include, photocell, fuse, wattage sticker, riser wires from the pole handhole to the luminaire, and all labour and equipment pertaining to the installation,

mounting, wiring, testing and adjustments of the street lighting equipment to achieve operational status. For the testing and commissioning, refer to Special Provisions – General, Item 54 – Commissioning for details. The Contractor should note that the existing illumination must be maintained at all times. Any additional cost for coordination time/conflicts, delays and errors will not be considered.

The unit price for each arm bracket shall include all labour, equipment and materials required to complete the work specified regardless of site conditions. In addition, the unit price shall include any coordination with Hydro One.

**ITEM NO. E14 – SUPPLY AND INSTALL PEDESTRIAN-ACTUATED WARNING SYSTEM FOR UNCONTROLLED MARKED CROSSWALKS**

Reference: OTM BOOK 15, Contract Drawings and Carmanah SC315 Specifications  
The Contractor shall supply and install pedestrian-actuated warning system for uncontrolled marked crosswalks in locations indicated on the contract drawings including all pavement markings and signage.

Rectangular rapid-flashing beacon shall be supplied and installed as follows:

- a) Size: 17" 0" (48" Sign)
- Type: Solar Powered
- Manufacturer: Carmanah
- Cat. No.: SC315
- Notes:

Contractor must follow Carmanah installation process as specified.

**Basis of Payment**

The unit price shall include all labour, equipment and materials required to supply and install each pole, including all hardware, testing and adjustments as required. Refer to Special Provisions – General, Item 54 – Commissioning for details. The unit price shall be fixed regardless of installation methods and/or site conditions. Price to include excavation, removal and disposal of surplus or unsuitable material.



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**ITEM P-01A – CONNECTION TO EXISTING MAINTENANCE HOLE (PROVISIONAL)**

Connection to proposed/existing maintenance holes and sanitary sewer with 30 MPa concrete.

The contract will be required to provide all labour, materials, and equipment necessary for the breaking into maintenance hole

This item is provisional and shall only apply when authorize by the Engineer.

Core drill into maintenance hole shall be in accordance with OPSS 410

This item shall include non-shrink grout to make the connection water fhigh.

Measurement shall be for the **total number of openings** made in maintenance hole.

Payment for this item shall be at the contract unit price including connection and non-shrink grout.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. P-01B– 200mm PVC SANITARY SEWER (PROVISIONAL)**

The contract will be required to provide all labour, materials, and equipment necessary for the installation of the sanitary sewer, including excavation in rock and/or soil, pipe bedding, backfilling and compaction.

This item is provisional and shall only apply when authorize by the Engineer.

The installation of sanitary sewer shall be in accordance with OPSS 410.

Measurement of pipe sewers shall be by length in **metres** along the horizontal centreline length of the pipe from the centre of one drainage structure to the centre of another drainage structure or outlet end of the pipe sewer.

Payment for this item shall be at the contract unit price including excavation, the supply and installation and joining of the pipe, bedding, backfilling, dewatering, compaction, testing, and the removal and disposal of excess materials.

No separate payment shall be made for sewer leakage testing. 10% of the cost based on the unit price, will be held until the sewage leakage test has passed, after which it will be paid out. Refer to Special Provisions – General, Item 54 – Commissioning for details.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. P-01C – 1200 DIA. SANITARY MAINTENANCE HOLE WITH BENCHING (PROVISIONAL)**

The contract will be required to provide all labour, materials, and equipment necessary for the installation of the 1200 dia. sanitary manhole with benching.

This item is provisional and shall only apply when authorized by the Engineer.

The excavation for the sewer maintenance hole shall be in accordance with OPSS 402

The installation of the sewer maintenance hole shall be in accordance with OPSS 407 and OPSD 701.010

The inside concrete bottom shall be benched and channelled to accommodate the pipe. Channeling shall be smooth and flush with adjacent pipe inverts.

Measurement for this item shall be the **number** of maintenance holes installed and adjusted of the appropriate size.

Payment for this item shall be at the contract unit price including benching, ladders, frames and covers and adjustment work, any required drop sections, excavation, dewatering, backfilling and compaction and leakage test.

No separate payment shall be made for maintenance holes leakage testing.

When the Owner raises or lowers the depth of a maintenance hole by up to and including 300 mm, it shall not constitute a Change in the Work and adjustment shall not be made to the payment. Where the depth of a maintenance hole is raised or lowered by more than 300 mm, this shall then constitute a Change in the Work for the full extent of the change from the original grade.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be

considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. P-01D – 100mm DIA. SEWER SERVICE (PROVISIONAL)**

The contract will be required to provide all labour, materials, and equipment necessary for the installation of sewer service.

This item is provisional and shall only apply when authorize by the Engineer.

The installation of sewer services shall be in accordance with OPSS 410 and OPSD 1006.10

Measurement for this item shall be by **length in metres** along its horizontal centreline from the centreline of the main pipe sewer to the end of the service connection.

Payment for this item shall be at the contract unit price including excavation, the supply and installation and joining of the pipe, fabricated tees, bedding, backfilling, dewatering, compaction, testing and the removal and disposal of excess materials.

No separate payment shall be made for leakage testing. 10% of the cost, based on the unit price, will be held until the leakage test has passed, afterwhich it will be paid out. Refer to Special Provisions – General, Item 54 – Commissioning for details.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM NO. P-02 - CORPORATION STOP AND 3m OF TUBING AND CORE OF CHAMBER WALL (PROVISIONAL)**

The Contractor will be required to provide all labour, materials and equipment necessary for the installation of the corporation stop and tubing and core of chamber wall

This item shall only apply where authorized by the Engineer.

The installation of the corporation stop shall be in accordance with OPSS 410.

Measurement for this item shall be by lump sum

Payment shall be at the contract unit price including tubing and core of chamber wall.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.

**ITEM No. P-04 – MOTORIZED ACTUATORS FOR 450MM GATE VALVES (PROVISIONAL ITEM)**

Provide two (2) exterior, pedestal mounted motorized actuators for two (2) existing 450mm gate valves in the connection chambers at the Picton Heights Reservoir, as indicated on the drawings, complete with electrical and control wiring from the Macaulay Booster Station Lighting Panel and PLC to the actuators. Install electrical wiring and commission the unit and prove to the Engineer that it has power, can actuate on local command to fully open and fully closed positions. Terminate the control wiring at the PLC with enough spare length to allow the Owner to connect anywhere in the PLC.

The actuator to be sized based on information provided by the valve supplier to guarantee valve closure at the specified flow velocity and differential pressure and include a 50% margin of safety. Design the actuator to provide rated torque with supply voltage variations of plus or minus 10% of the nominal supply value.

The actuators are to have enclosure ratings of EEMAC 3(X) for outdoor applications, watertight with external fasteners on the actuator made of stainless steel and vandal proof covers. The actuator to have an integral, separately sealed wire termination compartment and utilize “O” ring seals at removable cover joints. The actuator to maintain its non-hazardous enclosure ratings even with the wiring compartment access cover removed.

The actuator is to be designed for “open/close service” to cycle the gate from fully open to the fully closed position or the reverse in approximately 60 seconds (or operator adjustable). Furnish the actuator with the following integral motor controls and features:

- a) reversing starters,
- b) control transformer,
- c) phase discriminator,
- d) monitor relay (to signal fault conditions),
- e) “open–stop-close” pushbuttons,
- f) “local-off-remote” selector switch c/w dry contact for remote indication,
- g) local LED/LCD position display.

Furnish following additional controls and features:

- h) Hand held programmer, if available (1 per actuator).
- i) Emergency shutdown (ESD) feature.
- j) Programmable alarm relays (2).
- k) External remote (wall mounted) Local/Remote and OPEN/CLOSED/STOP control station c/w cable length to suit from the actuators to the Macaulay Booster Pumping Station control room

In addition to the requirements of the ANSI/AWWA C540, supply the following:

1. Gearing:
  - a) The actuator gear train to be of all metal construction and totally enclosed in a grease or oil filled gearcase suitable for operation at any angle.
  - b) Gears to be able to operate from fully opened to fully closed or vice-versa at 2-4 mm/s
2. Manual Override:
  - a) Provide manual operation by a handwheel via power gearing to minimize required rimpull and facilitate easy changeover from motor to manual operation when actuator is under load. Return from manual to electric mode of operation to be automatic upon motor operation. A seized or inoperable motor not to interfere with manual operation.
3. Motors:
  - a) Electrical and mechanical disconnection of the actuator motor to be possible without the need to drain the lubricant from the actuator gearcase.
  - b) The motor to be specifically designed for actuator service and be of totally enclosed, non-ventilated type.
  - c) Rating for open/close actuators at no more than 15 min. continuous run in one (1) hour, max. 60 starts/hour but no more than 10 starts/minute;
4. Overload Protection:
  - a) The motor to be de-energized in the event of a stall condition while attempting to unseat a jammed valve or if an obstruction is encountered during travel.
  - b) The motor to be de-energized in the event of overheating.
  - c) When supplied by a three-phase power supply system the motor to be de-energized upon the loss of any one of three phases.
5. Service:
  - a) Open/close, throttling or modulating service to be in accordance with Drawings, valve lists or specifications.
6. Torque Control:
  - a) The actuator to measure and control output torque electronically.
  - b) Output torque to be field adjustable from 40% of rated torque to 100% of rated torque in 1% increments.
  - c) During valve unseating or starting of high inertia loads in mid-travel the torque control system to momentarily inhibit torque tripping.
7. Electrical Controls:
  - a) Provide padlock lockable local controls.
  - b) The Open/Close remote control to be selectable to provide either maintained or push-to-run control (no seal in circuit).
8. Terminal Blocks:

- a) Terminate remote control, interlocking and remote indicating devices on terminal blocks.
9. Approval Identification:
- a) Provide plainly visible stamp or tag on equipment indicating CSA certification.
10. Communication System Integration and Connectivity:
- a) Provide a communication card/module integral to each actuator for connectivity to the communication system at the facility.
  - b) Card to allow full control and monitoring over the communication system.
  - c) Card to be compatible with 4-20 mA for communication protocols:
  - d) Provide all required hardware, including control wiring to allow for future programming/SCADA integration and connectivity into the system (Programming and SCADA to be completed by others).
11. Acceptable Manufacturers:
- a) Rotork (IQ3, IQT)
  - b) Auma (SQ, SQR, SA, SAR)

Provide equipment identification tags for the two new actuators. Tags to be 30 mm high and 1.5 mm thick polished aluminum, with embossed blade alpha-numeric identification numbers 20 mm high and 3 mm thick. Black Lamacoid plates with engraved white lettering are also acceptable. Coordinate the type and naming convention with the Owner, prior to submitting shop drawings. Conform to the County's latest – Tagging and Wire Numbering Standard.

Fasten tags to each item of equipment using 2 self-tapping screws into flanges, or in some other convenient location with block heavy-duty ties.

Develop a list of characters for review by the Engineer prior to fabrication. Allow up to 24 characters per tag.

**ITEM No. P-05 – COMBINATION AIR VALVE WITH CHAMBER AND DRAIN (SEE G105 – SOUTH RETRIEVAL SHAFT OF JACK AND BORE SECTION)**

The contract will be required to provide all labour, materials, and equipment necessary for the installation of a combination air valve and drain line with chamber for the south retrieval shaft of the Jack and Bore operation, shown on G105, with detail on G107.

The combination valve and chamber shall be in accordance with OPSS 441

The drain installation shall be in accordance with OPSS 410

Payment for this item shall be at the contract unit price including valves, fittings, drain pipe, supply and installation of chamber, excavation, dewatering, backfilling, insulation, testing, ladder and all other items shown in details drawings for the Combination air valve with chamber.

All work to be done by the Contractor for which specific unit prices are not named in the contract or not specifically mentioned but obviously necessary for the proper completion of the work, shall be considered as incidental and as being a part of and included with the work for which prices are given in the contract.