CITY OF SUMMERSIDE

TENDER

“Ditch Cleaning and Culvert Supply and Installation”

2022

Ditch Cleaning and Culvert Supply and Installation

Sealed tenders clearly marked **"**Ditch Cleaning and Culvert Supply and Installation" will be received up until **1:00 pm** April 8, 2022 at City Hall, 275 Fitzroy Street, Summerside, PE, C1N 1H9.

Tender opening will be held at City Hall conference room, first floor financial office, at 1:05 immediately after tender closing. Tenders will not be accepted after 1:00 pm on above date. No exceptions.

1.0 Tender Instructions

1.1 Tender forms must be completed, signed and dated.

1.2 The City of Summerside reserves the right to accept or reject any or all bids.

1.3 Tenders must be clearly marked "Ditch Cleaning and Culvert Supply and Installation".

1.4 The lowest priced or any tender not necessarily accepted.

1.5 Late tenders will NOT BE ACCEPTED.

1.6 Faxed or emailed tenders will NOT BE ACCEPTED.

1.7 Tenders to be signed ONLY by authorized personnel.

2.0 Bidder's Responsibility

It shall be the responsibility of each Bidder:

2.1 to acquire, from online or other sources as specified, any document (including any applicable copyright seal) that is referenced or mentioned in this Tender Call which is not physically attached herein;

2.2 to examine all the components of this Tender Call, including all appendices, forms and addenda;

2.3 to become familiar and comply with all of the terms and conditions contained in this Tender Call and the policies and legislation set out on the City's website at: City of Summerside Website

The failure of any Bidder to acquire, receive or examine any document, form, addendum, or policy shall not relieve the Bidder of any obligation with respect to its Bid or any purchase order issued based on its Bid.

3.0 ACCEPTANCE OR REJECTION OF TENDER

3.1 The Owner does not bind itself to accept any tender, even the lowest.

3.2 Without limiting the general scope of paragraph 3.1, the Owner may accept or reject any tender based on an unfavorable assessment of any of the following factors:

- Adequacy of the tendered price to permit the work to be carried out and, in case of a tender providing unit prices or a combination of lump sums and unit prices, whether each such price reasonably reflects the cost of performing the part of the work to which that price applies;

- Tenderer's ability to provide the necessary management structure, skilled personnel, experience and equipment needed to perform competently the work under the Contract;

- Tenderer's performance under other contracts both for the Owner and others.

- Proximity of Tenderer's head office, or main operating location to the Construction site.

3.3 In assessing the Tenderer's performance under other contracts pursuant to paragraph 3.2, the Owner may, without being limited to, consider such matters as:

- Quality of workmanship in performing the work;

- Timeliness of completion of the work;

- The overall management of the Contractor's work and its effects on the level of effort demanded of the Owner and I or the Owner's representatives.

3.4 Without limiting the generality of paragraph 3.1 or 3.2, the Owner, at its discretion, may reject a tender in any of the following cases:

- The Tenderer is bankrupt or, for whatever reason, its activities are rendered inoperable for an extended period;

- Evidence, satisfactory to the Owner, of fraud, bribery, fraudulent misrepresentation or failure to comply with any law protecting individuals against any manner of discrimination has been received with respect to the Tenderer, any of its employees or any subcontractor included as part of its tender; or

- Evidence satisfactory to the Owner that, based on past conduct or

behavior, the Tenderer, a subcontractor or a person designated to perform the work is not suitable or has conducted itself improperly;

- The Owner determines that the Tenderer's performance under other contracts, including the efficiency and quality of the work performed, and the extent to which the Tenderer complies or has complied with contractual clauses and conditions in performing the work, is or was unsatisfactory.

3.5 The Tenderer acknowledges that it shall have no claim against, or entitlement to damages from, the Owner by reason of the owner's rejection of its tender based upon the above criteria, or a rejection of all tenders.

4.0 Bid Protest Procedure

4.1 Pre-award bid disputes.

Bidders should seek a resolution of any pre-award dispute by communicating directly with the City Contact as soon as possible from the time when the basis for the dispute became known to them. The City Contact may delay the outcome of the selection process, or any interim stage of this Tender process, pending the acknowledgement and resolution of any pre-award dispute. For more information, see the Pre-Award and Post-Award Bid Dispute Process.

4.2 Post-award bid disputes.

Any dispute to the outcome of this Tender process must be received in writing by the City Contact no later than 10 days after the date of the notification of the outcome of the selection process, or where a debriefing has been requested, no later than five days after such debriefing is received. Any dispute that is not timely received or in writing will not receive further consideration.

Any written dispute with a procurement value over $100,000 that cannot be resolved by the City Contact through consultations with the Bidder, shall be referred to the CFO or his designate(s) for an impartial review, based on the following information:

4.2.1 A specific description of each act or omission alleged to have materially breached the procurement process;

4.2.2 A specific identification of the prov1s1on in the solicitation or procurement procedure that is alleged to have been breached;

4.2.3 A precise statement of the relevant facts;

4.2.4 An identification of the issues to be resolved;

4.2.5 The Bidder's arguments, including any relevant supporting documentation; and

4.2.6 The Bidder's requested remedial action. The CFO or his/her designate(s), in consultation with the City Solicitor, may:

i. Dismiss the dispute;

ii. Accept the dispute and direct the City Contact to take appropriate remedial action, including, but not limited to, rescinding the award and any executed contract, and canceling the solicitation.

5.0 Failure or Default of Bidder

If the Bidder, for any reason, fails or defaults in respect of any matter or thing which is an obligation of the Bidder under the terms of the Tender Call, the City may at its sole discretion:

5.1 disqualify the Bidder from the Tender Call and/or from competing for future Tender Calls issued by the City for a period of one year; and

5.2 require the Bidder to pay the City the difference between its Bid and any other Bid which the City accepts, if the latter is for a greater amount and, in addition, to pay the City any cost which the City may incur by reason of the Bidder's failure or default.

The Bidder shall be ineligible to submit a new Bid for any Call that the City is required to reissue as a result of the Bidder's failure or default or where the City deems that the Bidder has abandoned the Agreement.

6.0 Award of Tender

6.1 The Tender will be considered Awarded when the successful Bidder has been selected by the City of Summerside, and the decision in relation to the successful bidder has been communicated in writing to the Tenderer by the City.

For further information or clarification, please contact Assistant Operations Supervisor Brett St. John at 902-888-9234.

_____

Roger Ahern, Purchasing Agent
City of Summerside

CITY OF SUMMERSIDE

Tender Form and Agreement

THIS AGREEMENT by and between _____, herein called the Contractor, the Party of the First Part and the **City of Summerside**, herein called the City, the Party of the Second Part.

WITNESSETH, AS FOLLOWS:

1. **General Covenant**
   The Contractor hereby covenants and agrees with the City as herein provided in connection with the following work, namely:

   "To perform Ditch Cleaning and Culvert Supply and Installation operations in the contract area during the term of this contract"

2. **Contract Area**

   This contract area is the area located within the limits of the City of Summerside.

3. **Signing Date**

   The anticipated signing date for this contract shall be May 2, 2022.

4. **Term of Contract**

   This contract shall be in effect from May 2, 2022 to May 2, 2023.

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DITCH CLEANING AND CULVERT SUPPLY AND INSTALLATION CONTRACT

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APPENDICES

Appendix “A” - Contractor’s List of Equipment
Appendix “B” - Bid Sheet - Schedule of Unit Prices for up to 10 meters.
Appendix “C” - Bid Sheet - Schedule of Unit Prices for 10 meters or more.
Appendix “D” - Bid Sheet - Hourly Rates and Total Tender Price

ATTACHMENTS

Specification Section 01545 - Safety Requirements
Specification Section 01560 - Environmental Protection
Specification Section 02223 - Excavation Trenching and Backfill
Specification Section 02502 - Street Resurfacing and Repair
Specification Section 02516 - Pipe and Manholes
Specification Section 02650 - Top soiling, Seeding and Sodding

1 INSTRUCTIONS FOR FULFILLING CONTRACT

1.1 Definitions

City: shall mean the City of Summerside and includes anyone designated to administer this Contract.

Contract Area: The area that the City agrees to contract out to the contractor for ditch cleaning and culvert supply and installation.

Culvert Supply and Installation: Term used for the installation, replacement or extension of driveway culverts, repair of driveways required due to heaving of culverts and the installation of pipe and other material in order to allow the filling of ditches. **This is not intended for areas where entire street sections are to be filled, this will be covered under another contract.**

Ditch Cleaning: Term used for the removal of soil, rocks, vegetation etc. from ditches and the shaping of the ditches on a set grade to permit proper drainage. This does not include the clearing of ice and snow from the City's drainage network during the winter or any other work that is covered under another contract.

Engineer: as used in the attached specifications shall mean anyone designated to administer this Contract.

Extra Work: Work which is not included in the time frame and terms and the conditions as laid out in this contract. The City must authorize the extra work and payment will be made based on the price negotiated.

Signing Date: A date specified by the City on which the contractor will be required to attend a meeting for purposes of reviewing the contract items and submitting their signed contract along with all necessary documents required by the City outlined in Section 1.5.

1.2 Role of the Authorized Representative of the Contractor

The contractor must designate in writing, see Appendix "A", a representative who can be reached when work is required. This representative must be ready to direct operations according to this contract. The name and number of the city's contact representative, will be passed on to the contractor on the signing date.

1.3 Observance of Laws and Regulations

The contractor must conform to all applicable laws, regulations and by-laws in force, such as the Highway Traffic Act and the Construction Safety Act and Regulations under authority of the Workers Compensation Board and is responsible for obtaining any permits or licenses required to perform his obligations under this contract.

Note: Flashing amber lamps are to be used on all equipment.

1.4 **Inadequate Performance**

If in the opinion of the City, the contractor neglects or is not sufficiently diligent in his work, the City, after verbal warning confirmed later by letter, may have the necessary work done and deduct the cost from the payments due to the contractor. If the Contractor's performance continues to be unsatisfactory, the City may cancel the contract. In no case is the City responsible for compensating the Contractor for difficulties or damages resulting from these actions.

1.5 **Documents Required**

At the signing date of this contract, the Contractor will be required to attend a meeting for the purposes of submitting his signed contract along with a copy of the Contractor's liability insurance policy or a renewal certificate of the Contractor's policy.

1.6 **Responsibilities of the Contractor**

The Contractor, the Contractor's agents and all workmen and persons employed by or under the control of the Contractor, and all servants and agents of sub-contractors, if any, shall use due care that no person or property is injured and that no rights are infringed in the prosecution of the work, and the Contractor shall be solely responsible for all damages, by whomever climbable, in respect of any injury to persons or to property of whatever description, and in respect of an infringement of any right, privilege or easement whatsoever, occasioned in carrying on the works or any part thereof, or by any neglect, misfeasance or nonfeasance on the Contractor's part, or on the part of any of the Contractor's agents, workers or persons employed by or under control of the contractor or any sub-contractors, their servants or agents, and shall, at the contractor's own expense, make such temporary provisions as may be necessary to ensure the avoidance of any such damage, injury of infringement, and to prevent the interruption of or damage or performance to, the traffic on any public or private road, and to secure to all persons and corporations the interrupted enjoyment of all their rights, in and during the performance of any said works; and the Contractor shall indemnify and save harmless the City from and against all claims and demands, loss, cost, damages, actions, suits or other proceedings whomsoever made, brought or prosecuted, in any manner based upon, occasioned by or attributed to any such damage, injury of infringement.

1.7 **Liability Insurance Policy**

The Contractor shall furnish a copy of his comprehensive general liability insurance covering the legal liability of the Contractor for injuries to or death of persons and/or damage to property of others for limits of not less than three million ($3,000,000) dollars per occurrence for bodily injury and property damage with an insurer and in a form satisfactory to the City. Such insurance shall name the City of Summerside as named insured and shall contain cross liability coverage and preclude subrogation by the insured against the City of Summerside. The Policy shall contain an endorsement to provide the City with sixty (60) days' notice in

writing of any material changes or cancellations.
All the foregoing insurance shall be primary and not require the sharing of any loss by any insurer of the City and shall preclude subrogation by the insurer against the City of Summerside.

1.8 **Sub-Contracting**

No sub-contract may be made without the written consent of the City of Summerside.

2 OPERATIONAL PROCEDURE

2.1 **Call Out / Schedule of Work**

The following schedule must be followed by contractor:

Date	Event
May 2, 2022	Anticipated Contract Signing
May 16, 2022	City to provide contractor list of not more than 30 culverts which require only cut/patch asphalt work (no regrading or replacement)
June 10, 2022	Deadline for Contractor to have completed the full list of culverts provided by the City on May 16. If these culverts are NOT completed by the contractor at this date the city may, at its choice, decide to complete these culverts with their own staff with no payment to the contractor for work done by city or to hire any other firm to complete the work with no payment to the contractor.
Ongoing	City will provide other work to contractor only as budget and demand allow at the discretion of the City. Additional work after the June 10 date must be completed within 30 days of being instructed to perform work or City will have option to choose to complete work with own staff or another firm with no payment to contractor for work done.

2.2 **Damage of Private Property**

The Contractor is required to make every possible effort to avoid damaging of private property such as driveways, culverts, mailboxes, bushes, trees, grass, fences, etc. See Section 1.6, Responsibilities of the Contractor. The contractor shall be responsible to repair any damages.

2.3 **Establishing Grades**

The grade must be established by the contractor as directed by the City based on:

- maintaining a set depth below the edge of asphalt,
- maintaining a straight line between two culverts, or

- by following grades set by the City.

Ditch Cleaning

2.3.1 **If this work is to be done in conjunction with adjacent property improvements, this work may be excluded from this contract, as directed by the City.**

2.3.2 The contractor shall excavate the ditch to a line and grade directed by the City.

2.3.3 All material excavated shall be removed from the site as soon as possible by the Contractor and disposed of at a site within the city limits as directed by the City.

2.3.4 Prior to the start of each ditch cleaning job the equipment and work force, including workers and flaggers, must be approved by the City.

2.4 Culvert Supply and Installation

2.4.1 **General**

a) If this work is to be done in conjunction with adjacent property improvements. (Ie Larger scale civil contracts) This work may be excluded from the contract, as directed by the City's Technical Services Department.
b) The City reserves the right to exclude infilling jobs from this contract, no compensation will be allowed for these jobs.

2.4.2 Culvert installation

Cleaning of ditches within 2 meters of the end of a new culvert shall be included as part of the installation of the culvert. If ditching is required beyond this point it will be considered as ditch cleaning and be paid as such.

2.4.3 **Driveway Culvert Installation**

Driveway culverts of diameter and length as directed shall be supplied and installed by the Contractor at the location identified and at the line, depth and grade set by the City. The work shall include preparing ditch to the required grade, installing pipe, placing and compaction of sandstone. Work shall be performed in accordance with Specification Section 02516, Pipe and Manholes.

2.4.4 **Driveway Culvert Repair**

A) As directed, driveway culverts will be repaired in accordance with

Specification Section 02516, Pipe and Manholes.
B) Culvert end cutting as per section 02516, Pipes and Manholes and paid as unit pricing.

2.4.5 **Driveway Culvert Replacement**

Driveway Culverts shall be removed and replaced with a new culvert of size and length as directed by the City. The culvert shall be installed at the line, depth and grade established by the contractor and approved by the City to provide adequate drainage. Work shall include saw cutting asphalt, excavating and removing existing pipe, installing new pipe, placing and compacting sandstone and patching asphalt. Work shall be performed in accordance with Specification Section 02516, Pipe and Manholes and Section 02502 Street Resurfacing and Repair.

2.4.6 **Driveway Repair**

When directed by the City, the Contractor shall repair a heaved driveway by saw-cutting the driveway asphalt, re-grading the driveway over the culvert as required and patching the asphalt. Work shall include saw cutting asphalt, replacing any unsuitable material with sandstone and patching asphalt. Work shall be performed in accordance with Specification Section 02502 Street Resurfacing and Repair.

2.4.7 **Driveway Culvert Extension**

When directed by the City, the Contractor shall extend a driveway culvert to widen a driveway or to fill a portion or all of the ditch in front of a property. The extension of the culvert shall involve preparing the ditch to the required grade, installing the culvert, placing of appropriate fill and the landscaping of the site in accordance with the City of Summerside Ditch and Culvert Policy and Specification Section 02516, Pipe and Manholes.

2.4.7.1 **Culvert Backfilling**

Culverts under driveways shall be backfilled using sandstone in accordance with the attached specification. Areas that are not subject to vehicle traffic shall be backfilled with clean fill according to the attached specification.

2.4.7.2 **If the City receives a request from the property owner, a portion of this work may be excluded from this contract. The contract will include placement of fill to a point 0.3 meters above the top of the pipe, while the remaining work may be completed by others, as directed by the City.**

2.5.8 **Culvert Installation Landscaping**

All grassed areas shall be covered with a minimum of 100 mm of topsoil

and landscaped with grass seed or sod as directed and in accordance with Specification Section 02650, Top soiling, Seeding and Sodding.

2.5.9 **Culvert Installation Erosion Control**

A) Erosion protection mats, or other methods approved by the City, shall be used at sloped areas at the end of fill areas to prevent erosion. Mats shall be installed in accordance with DOT Specification 807.allow for use of jute matting in unit pricing.

B) The city may require the contractor at the engineer's discretion to place erosion control devices at culvert ends to protect culvert from washing out. Placing Rip-rap at the culvert ends for approx. 1.5m2 at the upstream end of the culvert. With Filter fabric placed under the rock to prevent the soil from moving. Include all labour and materials needed in unit pricing.

3 COMMUNICATIONS

3.1 **City Communications with Contractor**

It will be necessary for the City to be able to contact the Contractor or the Contractor's representative when work is required. The Contractor shall supply phone numbers where the Contractor of Contractor's representative can be contacted during normal working hours, in the evenings and on weekends.

4 EQUIPMENT

4.1 **Necessary Equipment**

The Contractor must provide proof prior to contract award they have at their disposal, a backhoe with an extendable boom which is capable of handling a ditching bucket of a minimum width of 4 feet and a dump truck suitable for hauling wet material without spilling this material onto the streets.

4.2 **List of Equipment**

The Contractor must list all the equipment that he will use to execute this contract in Appendix "A". The list must comply with the requirements in Section 4.1 and be available for use during the term of this contract.

4.3 **Cancellation of Contract**

The City reserves the right to cancel this contract if the above equipment requirements, Section 4.1, are not met or if the Contractor's equipment is not in good working order.

4.4 **Inspection of Equipment**

A representative from the City will inspect the Contractor's equipment to ensure it meets the requirements of Section 4.1.

5 PRICE STRUCTURE

5.1 **New Conditions**

New conditions may be initiated by the City, requiring the Contractor to take on added responsibilities other than in this contract. If these new conditions materialize, then new terms and conditions for the balance of the contract will be negotiated. If they do not materialize, then the contract will continue as per the terms and conditions of this contract.

5.2 **Method of Payment**

Payment will be made monthly and invoices shall be submitted by the 15th of the month for the previous month's work.

5.2.1 **Ditch Cleaning - Hourly Rate**

Payment for ditch cleaning will be made at the rates listed in Appendix "C" for each hour of manpower and equipment used. A breakdown of the equipment used, date used, number of hours used and the location of the work must be included with each invoice before the invoice will be processed for payment.

5.2.2 **Culvert Supply and Installation - Unit Prices**

Payment for the supply and installation of culverts, replacement of culverts, repair of driveways and extension of culverts shall be paid based on the Schedule of Unit Prices in Appendix "B". A breakdown according to the schedule of unit prices for each location where work was performed must be submitted with each invoice before the invoice will be processed for payment.

5.3 **Determination of Total Tender Price for Award**

The estimated quantities and hours listed in Appendix "B" and "C" are included only to evaluate the tenders. The quantities will change from these numbers as the work to be performed is dependent on the number of requests for work, the City's priorities and the budget allocated for this work. No adjustment of prices will be considered due to lesser or greater quantities or hours. Appendix "B" has been developed to cover most possible scenarios and as a result the quantities are higher than we expect will be required.

6. CONTRACT AGREEMENT

The Contractor agrees to perform ditch cleaning and culvert supply and installation operations in the contract area as per the terms and conditions outlined above in Section 1 through to Section 6 for the term of this contract. This contract is not transferable.

IN WITNESS THEREOF the Parties hereto have hereby caused these presents to be signed and sealed on the dates stated.

CONTRACTOR

SIGNED, SEALED AND DELIVERED
by the Contractor on the
_____ Day of _____2022.

_____
Signature

_____
Name and title

_____
Witness signature

OWNER

SIGNED, SEALED AND DELIVERED
by the City of Summerside on the
_____ Day of _____, 2022.

_____
Mayor signature

_____
CAO Signature

_____
Witness signature

APPENDIX "A"

Price for Supply, Place, and Compact Asphalt
Including Saw Cutting and Removal of Existing for an $_____
Estimated quantity of 160 m^2 (No HST)

2022 Contractor's List of Equipment

Type of Equipment	Make / Model	Year	Boom Reach	2 or 4 Wheel Drive	Truck Capacity	Horsepower
Backhoe					n/a	
Dump Truck			n/a	n/a		n/a

Contractor's Representative

Name:_____

Work #:_____

Home #:_____

Cellular #:_____

APPENDIX "B"
2022
Bid Sheet

Culvert Supply and Installation

Please note there are no confirmed actual quantities – these will depend on demand as determined by the city. There is no payment to the contractor for any items for which there is no demand according to the city.

Unit Prices

	Item	Unit	Unit Price (NO HST)
1	Supply and Install Steel Culvert	m	
	- 300mm diameter		_____
	- 400mm diameter		_____
	- 450mm diameter		_____
	- 500mm diameter		_____
	- 600mm diameter		_____
	- 800mm diameter		_____
2	Supply and Install Steel Coupling	each	
	- 300mm diameter		_____
	- 400mm diameter		_____
	- 450mm diameter		_____
	- 500mm diameter		_____
	- 600mm diameter		_____
	- 800mm diameter		_____
3	Supply, Place and Compact Sandstone	cu.m.	_____
4	Supply, Place and Compact Fill	cu.m.	_____
5	Supply, Place and Compact Asphalt including Saw Cutting and Removal of Existing	sq.m.	_____
6	Supply and Install Erosion Control Mats	sq.m.	_____

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7	Supply and place 2 inch thick HI - 40 insulation	sq.m.	_____
8	Supply and Place Topsoil	cu.m.	_____
9	Supply and Place Grass Seed	sq.m.	_____
10	Supply and Place Sod	sq.m.	_____
11	Supply and Place Hydro Seed	sq.m	_____
12	Cutting Culvert for Repair	each	_____
13	Culvert end Rip-Rap	each	_____
14	Supply and Install Dual Wall Polyethylene Culvert (ie.Solflo)	m	_____
	- 300 mm diameter		_____
	- 375 mm diameter		_____
	- 400 mm diameter		_____
	- 450 mm diameter		_____
	- 600 mm diameter		_____
	- 750 mm diameter		_____
	- 900 mm diameter		
15	Supply and Install Polyethylene Coupling	each	
	- 300 mm diameter		_____
	- 375 mm diameter		_____
	- 400 mm diameter		_____
	- 450 mm diameter		_____
	- 600 mm diameter		_____
	- 750 mm diameter		_____
	- 900 mm diameter		_____

APPENDIX "C"

Bid Sheet

2022

Ditch Cleaning and Total Tender Price

Hourly Rates

Please note actual quantity of hourly rate work will be determined by the city based on demand and there will be no payment for any hourly work unless approved by the city.

Item	**Est. Hours**	**Hourly Rate (No HST)**	**Price**
Backhoe	10	$ _____ / hr	$ _____
Truck	10	$ _____ / hr	$ _____
Labour	10	$ _____ / hr	$ _____
Flagger	10	$ _____ / hr	$ _____
Appendix "C"	**Subtotal**	**(NO HST)**	_____

Contractor	
Address	
Phone Number	
Contact Person	
Signature	

SAFETY REQUIREMENTS

1.1 Construction Safety Measures

.1 The work performed by any Contractor or Sub-Contractor must comply with the Occupational Health and Safety Act and its regulations. This Act and the regulations are available from:

Island Information Service
P. O. Box 2000
Charlottetown, P. E. I.
C1A 7N8

Telephone: 892-3428

.2 The City reserves the right to order changes in construction methods or stoppages of work if work does not comply with the Act. Any cost due to these changes or stoppages shall be the responsibility of the Contractor.

1.2 Traffic Warning Requirements

.1 Traffic warning and control devices shall be utilized in compliance with the Occupational Health and Safety Act and to meet requirements as set out by the DOT Traffic Control Manual for PEI. A Copy can be Obtained from the Provincial Department of Transportation and Public Works.
City of Summerside Police Department. Contractors are instructed to contact the Police Chief to notify the Police Department of the areas affected by their daily Activities

ENVIRONMENTAL PROTECTION

1.1 **Fires**	.1	Fires and burning of rubbish on site will not be permitted.
1.2 **Disposal of Waste**	.1	Do not bury rubbish and waste materials on site.
	.2	Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
1.3 **Drainage**	.1	Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
	.2	Do not pump water containing suspended materials into waterways, sewer or drainage systems.
	.3	Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
1.4 **Pollution Control**	.1	Cover and wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
2.1 **Legislation**	.1	All work shall be done in accordance with all Provincial Acts and Regulations concerning impact on the environment. The Contractor shall ensure methods of controlling runoff during construction are satisfactory to the Provincial Department of the Environment.

STREET RESURFACING & REPAIR

PART 1 - GENERAL

1.1 Description

.1 **Resurfacing** shall include placing tack coat and asphaltic concrete pavement and may include placing a levelling course of asphaltic concrete pavement prior to the final resurfacing.

.2 **Excavate Asphalt** for driveway repair shall include excavation of a portion of the existing driveway or street and subgrade and if necessary placing Sandstone base course and asphaltic concrete pavement.

.3 **Patching** NIC (Not in Contract)

1.2 Asphaltic Cement (Liquid)

.1 Liquid asphalt for asphaltic concrete is to be included by the contractor. The cost of the liquid shall be included in the asphaltic concrete prices.

EXCAVATION, TRENCHING AND BACKFILLING

PART 1.0 - GENERAL

1.1 Definitions

.1 **Rock Excavation:** excavation of material from solid masses of igneous, sedimentary or metamorphic rock which, prior to its removal, was integral with its parent mass, and boulders or rock fragments having individual volume in excess of 1 cubic meter.

.2 **Common Excavation:** excavation of materials of whatever nature, which are not included under definitions of rock excavation including asphalt, dense tills, hardpan, frozen materials and partially cemented materials which can be ripped and excavated with heavy construction equipment.

.3 For the purpose of any measurement, theoretical trench width is considered to be one (1) meter wide for all excavation descriptions.

1.2 Protection of Existing Features

.1 Existing buried utilities and structures:

.1 Size, depth and location of existing utilities and structures as indicated are for guidance only. Completeness and accuracy are not guaranteed.

.2 Prior to commencing any excavation work, notify applicable owner or authorities, establish location and state of use of buried utilities and structures. Clearly mark such locations to prevent disturbance during work.

.3 Confirm locations of buried utilities by careful test excavations.

.4 Maintain and protect from damage, water, sewer, gas, electric, telephone and other utilities and structures encountered as indicated. Obtain direction of the Engineer before moving or otherwise disturbing utilities or structures.

.5 Advise utility company to reroute existing lines in area of excavation. Pay costs for such work and incorporate any cost in the unit prices. No extra will be allowed.

1.3 Measurement for Payment

.1 Common excavation will be considered incidental to work performed in Sections 02713, 02702, 02516 and 02601.

.2 Rock excavation will be measured in cubic meters using the average end area method between changes in rock cross section. Dimensions used to calculate end areas shall be theoretical trench width and depth from surface of rock as exposed on sides of trench after excavation to bottom of specified bedding for each pipe trench.

.3 Boulders larger than one cubic meter, any portion of which is within theoretical trench will be classified as rock and measured following removal from trench.

.4 Cubic meter measurement will be full compensation for excavation, disposal, backfill, labour and material.

PART 2.0 - PRODUCTS

2.1 Materials

.1 **Type 1 Fill:** Hand selected, hand placed, excavated material approved by the Engineer, free from shale, clay, friable materials, organic matter and other deleterious substances.

.2 **Type 2 Fill:** Selected material from excavation or other sources, approved by the Engineer for use intended, unfrozen and free from rocks larger than 75 mm, cinders, ashes, sods, refuse or other deleterious materials.

PART 3.0 - EXECUTION

3.1 Site Preparation

.1 Remove obstructions, ice and snow, from surfaces to be excavated within limits indicated.

.2 Strip topsoil from within limits of excavation and stockpile as directed by the Engineer for re-spreading after backfilling.

3.2 Stockpiling

.1 Stockpile fill materials in areas designated by the Engineer. Stockpile granular materials in manner to prevent segregation.

.2 Protect fill materials from contamination.

3.3 Cofferdams, Shoring, Bracing

.1 Construct temporary works to depths, heights and locations as directed by the Engineer.

.2 During backfill operation:

.1 Unless otherwise indicated or directed by the Engineer, remove sheeting and shoring from excavations.

.2 Do not remove bracing until backfilling has reached respective levels of such bracing.

.3 Pull sheeting in increments that will ensure compacted backfill is maintained at an elevation at least 450 mm above toe of sheeting.

.3 When sheeting is required to remain in place, cut off tops at elevations indicated or directed by the Engineer.

.4 Upon completion of substructure construction:

.1 Remove cofferdams, shoring and bracing.

.2 Remove excess materials from site and restore water courses to conditions indicated or as directed by the Engineer.

3.4 Dewatering

.1 Keep excavations free of water while work is in progress.

.2 Protect open excavations against flooding and damage due to surface run-off.

.3 Dispose of water in a manner not detrimental to public and private property, or any portion of work completed or under construction.

.4 Submit for the Engineer's review details of proposed dewatering methods.

3.5 Excavation

.1 Advise the Engineer in advance of excavation operations to enable original cross sections to be taken.

.2 Excavate to lines, grade, elevations and dimensions indicated.

.3 Remove concrete masonry paving walks, demolished foundations, and rubber and other obstructions encountered during excavation.

.4 Excavation must not interfere with normal 45 degree splay of bearing from bottom of any footing.

.5 For trench excavation, unless otherwise authorized by the Engineer in writing, do not excavate more than 30 m of trench in advance of installation operations and do not leave open at end of day's operation.

.6 Dispose of surplus and unsuitable excavated material off site.

.7 Do not obstruct flow of surface drainage or natural watercourses.

.8 Earth bottoms of excavations to be undisturbed soil, level, free from loose, soft or organic matter.

.9 Notify the Engineer when soil at bottom of excavation appears unsuitable and proceed as directed by engineer.

.10 Obtain the Engineer's approval of completed excavation.

.11 Remove unsuitable material from trench bottom to extent and depth directed by the Engineer.

.12 Where required due to unauthorized over excavation, correct as follows:

- .1 Fill under bearing surfaces and footings with gravel.
- .2 Fill under other areas with Type 1 fill compacted to minimum of 100% maximum dry density to ASTM D698-78.

.13 Hand trim, make firm and remove loose material and debris from excavations. Where material at bottom of excavation is disturbed, compact foundation soil to density at least equal to undisturbed soil.

3.6 Fill Types and Compaction

.1 Use fill of types as indicated or specified below. Unless otherwise specified, compact to following densities:

.1 Type 1: 100% maximum dry density
.2 Type 2: 100% maximum dry density

.2 Contractor must meet the compaction requirements for the type of fill used. Should settlement occur in the trench during the maintenance period, Contractor will be required to repair settled area and give an additional year of maintenance for that area.

3.7 Backfilling

.1 Do not proceed with backfilling operations until engineer has inspected and approved installations and approved all material to be used in backfilling operations.

.2 Areas to be backfilled to be free from debris, snow, ice, water or frozen ground.

.3 Do not use backfill material which is frozen or contains ice, snow or debris.

.4 Backfilling around installations:

.1 Place bedding and surround materials as specified elsewhere.
.2 Do not backfill around or over cast-in-place concrete within 24 hours after placing.
.3 Place layers simultaneously on both sides of installed work to equalize loading.
.4 Place material by hand under, around and over installations until 750 mm of cover is provided. Dumping material directly on installations will not be permitted.

.5 Place backfill material in uniform layers not exceeding 150 mm compacted thickness up to grades indicated. Compact each layer before placing succeeding layer.

.6 All pipe to be imbedded in a minimum of 300 mm of Type 1 material above the top of pipe and the remainder of the material to be Type 2.

3.8 Restoration

.1 Upon completion of work, remove surplus materials and debris, trim slopes, and correct defects noted by the Engineer.

.2 Reinstate pavement and sidewalks to condition and elevation which existed before excavation.

.3 Clean and reinstate areas affected by work as directed by the Engineer.

.4 All roadways and asphalt mixed to meet Prince Edward Island Department of Transportation and Public Works specifications.

PIPES AND MANHOLES

6 GENERAL

6.1 Work Included

6.1.1 This section specifies requirements for the installation of corrugated steel pipe, polyethylene pipe, fittings and manholes. Work includes the supply and installation of pipe, fittings and manholes including necessary excavation, backfilling and site restoration.

6.2 Handling and Storage

6.2.1 Handle and store pipe and fittings in such manner as to avoid shock and damage. Do not use chains or cables passed through pipe bore.

7 PRODUCTS

7.1 Pipe

7.1.1 Pipe shall be Galvanized, corrugated steel with corrugations having a pitch of 68 mm and a depth of 13 mm. **Either Spiral or Rivetted Steel pipe IS acceptable.** Unless specifically directed otherwise by the City, the contractor is to use all metal pipe. At the City's discretion the contractor may be instructed to use plastic pipe rather than steel pipe in some specific cases. In cases where the City request the use of plastic pipe the pipe shall be spiral Polyethylene pipe. The Poly pipe shall be Soleno Solflo Max R320 Gasket Bell End pipe, no substitutes will be accepted.

7.1.2 Dimensions given in this specification are conversions from imperial units to metric units. The actual dimensions of bolts, rivets, holes, spacings, etc. are intended to be the closest standard size in metric or imperial. The exception is that pipe diameter will normally be specified in metric units and shall be supplied that way, but for special applications imperial units may be requested and must be supplied.

7.1.3 The gauge thickness for steel pipe shall be as listed below:

Gauge Thickness for Corrugated Steel Pipe

Diameter (mm)	Thickness (mm)	Gauge
300	1.6	16
400	1.6	16
500	1.6	16
600	2.0	14
800	2.0	14
900	2.8	12

7.1.4 The sheet steel shall be hot dipped galvanized prior to corrugating and forming into pipe. The weight of the coating shall be commercial, 300 grams of zinc per square meter of sheet on each side, galvanized by the hot dip process. For riveted pipe the seams are to be riveted with 8 mm cold driven rivets for 16 and 14 gauge and 9.5 mm rivets for 12 gauge. Longitudinal seams are riveted with one rivet in each corrugation and circumferential rivets for joining the sections are spaced on 150 mm centers.

7.2 Couplings

7.2.1 The couplings for round galvanized corrugated steel culvert pipe shall be fabricated from the same type of pipe. The couplings shall match the corrugations on the pipe. When necessary due to the use of spiral steel culvert a dimple type coupling may be used instead. The couplings for round polyethylene pipe shall be of the same brand name as the plastic pipe. The couplings shall match the corrugations on the pipe. Where possible when plastic pipe is used bell and spigot joints with sealed gaskets will be used.

7.2.2 Coupling for steel pipe shall be a one piece connecting band 610 mm in length in all sizes of diameter and shall be the specified gauge for that diameter of culvert pipe. Provision shall be made for drawing the coupling together by steel angle lugs not less than 51 mm shorter that the coupling. Angle lugs are to be 57 mm x 51 mm

x 3.2 mm thick and riveted to the top of each successive corrugation on the coupling with 8 mm cold driven rivets for 16 and 14 gauge material and 9.5 mm cold driven rivets for 12 gauge. There are to be five 16 mm and 22 mm oblong holes evenly spaced in the upright leg of each angle lug. Coupling for polyethylene pipe shall be a two piece connecting band in all sizes of diameter and shall be the specified gauge for that diameter of culvert pipe.

7.2.3 Five 16 mm diameter x 200 mm in length square headed bolts and square nuts provided with each steel coupling. All nuts and bolts are to be hot dipped galvanized and supplied with standard thread. Plastic ties from the supplier are to be used for the polyethylene couplings.

7.3 Manholes and Fittings

7.3.1 Corrugated steel manholes and fittings shall be fabricated from corrugated steel pipe in accordance with CAN3-G401 galvanized. All manholes shall be pre-fabricated with stubs installed to connect to pipe using proper couplings. The insertion of pipes into a manhole will not be permitted unless special permission is granted by the engineer for a specific application. Polyethylene Catch basins shall have a minimum sump of 0.3 m and shall have a metal frame and cover.

8 **EXECUTION**

8.1 Preparation

8.1.1 Carefully inspect products for defects and remove defective products from site.

8.2 Trenching, Bedding and Backfilling

8.2.1 Do trenching, bedding and backfilling to Section 02223.

8.3 General

8.3.1 Lay and joint pipe and fittings as specified herein and according to manufacturer's published instructions.

8.3.2 The Contractor shall begin work at the downstream end of the section to be installed. Pipe shall be installed in such a manner so that the inside circumferential laps point downstream

8.3.3 Backfill material and methods must be approved by the Engineer. The bottom half of the pipe shall be backfilled by hand in layers not exceeding 150 mm. The remainder of the trench may be backfilled by machine in layers not exceeding 200 mm provided proper care is taken to avoid shifting of the pipe or damage to the pipe. Stones larger than 100 mm shall not be placed within 300 mm of the pipe.

8.3.4 Pipes which are not true in alignment or which show improper installation shall be taken out and relayed at the Contractor's expense.

8.3.5 Couplings shall be placed so that the joint of the couplings are near horizontal. The connection on the coupling should be overlapped from the top, and should be located on the lower half of the culvert (ie. between '3 and 9 o'clock').

8.3.6 Match corrugations of couplings with pipe sections before tightening. Tap coupling firmly while tightening to take up slack and ensure a snug fit. Ensure all bolts **and ties** are inserted and tightened.

8.4 Driveway Culvert Installation

8.4.1 The ditch shall be excavated to the line and grade specified by the City or to sufficient additional depth to reach suitable material. If additional excavation is required, the Contractor shall place and compact to 95% Standard Proctor Density suitable material to bring the bottom to proper grade.

8.4.2 The top of the driveway shall be constructed to a width of not more than **2.0 meters** less than the length of the pipe. The asphalt surface shall be constructed to a width of not more than **3.0 meters** less than the length of the pipe (i.e.: For a 6 meter culvert the max asphalt width is 3.0 meters). Where deeper than normal ditches are present, the City may direct that the top will be narrower.

8.5 Driveway Culvert Repair

8.5.1 The contractor shall excavate the existing material from around the end of the culvert and if suitable, reserve it for re-use. Damage to the ends of the culvert, if present, shall be cut off with a method approved by the City. The result shall be a smooth distortion-free,

straight edge perpendicular to the line and grade of flow.

8.5.2 The specified length of pipe will be joined using a proper coupling and the total exposed pipe shall be backfilled and shaped as necessary to restore the original drainage course. This may result in a culvert slightly longer than the original.

8.5.3 The culvert to be joined onto, must be cleaned of soil and debris to ensure the culvert functions properly and to enable an effective coupling with the extension pipe.

8.5.4 The new section of pipe shall be placed on a similar line and grade as the original pipe unless otherwise specified by the Engineer. The Contractor will ensure that this alignment is maintained throughout the work.

8.6 Driveway Culvert Extension

8.6.1 Connection to the existing pipe shall be in accordance with Section 3.5 above.

8.6.2 For locations where the extension is to be used to widen a driveway the pipe shall be backfilled with sandstone to the level of the driveway surface and compacted.

8.6.3 For areas not to be used for driveway widening the finish grade of the lawn at the ditch centerline shall be a minimum of 200 mm below the edge of asphalt and sloped to permit water to run off the street and lawn then along the ditch line to the manhole or to the ditch at the end of the piped section as directed.

8.7 Manhole Installation

8.7.1 The contractor shall place 3 level concrete bricks 100 mm in height around the circumference of the corrugated steel manhole. The top of the corrugated steel manhole when place shall be at the specific grade and shall be oriented to ensure proper inlet and outlet connections. Cast-in-place concrete shall be placed to the top of the form inside and outside the corrugated steel manhole and shall be given sufficient time to cure prior to backfilling.

8.7.2 Each manhole shall be installed with a minimum 450 mm sump below the invert of the

lowest pipe.

TOPSOILING, SEEDING AND SODDING

PART 1.0 - GENERAL

1.1 Work Included

.1 This section specifies requirements for topsoiling, seeding and sodding. Work includes finish grading, supply and placing of topsoil, lime, fertilizer, seed, sod and accessories.

1.2 Reference Standards

.1 Canadian Nursery Trades Association; Canadian Standards for Nursery Stock.

1.3 Delivery and Storage

.1 Schedule deliveries to minimize storage at job site without causing delays.

.2 Deliver and store grass seed in original containers showing:

- .1 Analysis of seed mixture by percentage of mass for each ingredient.
- .2 Net mass of the package.
- .3 Grade name of mixture.
- .4 Name and address of the distributor.

.3 Deliver, unload and store sod on pallets.

.4 Schedule sod delivery to coincide with topsoil operations.

PART 2.0 - PRODUCTS

2.1 Topsoil

.1 Friable loam containing minimum of 4% organic matter for clay loams and 2% for sandy loams to maximum of 20% by volume, and having a pH of 5.5 to 7.5. Topsoil containing subsoil, roots and stones larger than 50mm, weeds, couch grass, crabgrass, foreign objects or toxic materials is not acceptable.

2.2 Fertilizer

.1 Complete commercial, specially blended for promoting root development of newly seeded or sodded areas.

.1 Formulation ratio: 1:2:2 spring seeding
1:4:4 fall seeding

2.3 Lime

.1 Agricultural grade ground limestone containing total 85% carbonates.

2.4 Seed

.1 Canada #1 lawngrass mixture to Government of Canada Seeds Regulations where applicable having minimum germination of 80% and minimum purity of 85%. Seed mixture: 40% Kentucky Blue Grass; 40% Creeping Red Fescue; 20% Perennial Rye Grass.

2.5 Mulch

.1 Wood or wood cellulose fibre, free of germination or growth-inhibiting ingredients and forming blotter-like ground cover allowing absorption and percolation of water.

2.6 Water

.1 Clean, fresh, and free from impurities that inhibit plant growth.

2.7 Sod

.1 Cultivated turf grass containing not less than 40% Kentucky Bluegrass, free of weeds, and with no surface soil visible when mowed to height of 50 mm; soil portion of uniform thickness, not more than 15 mm and to Section 17 of the Canadian Standards for Nursery Stock.

2.8 Accessories

.1 Pegs: wood, 25 mm x 25 mm x 200 mm nominal size.

.2 Mesh: 37 mm chicken wire or plastic.

PART 3.0 - EXECUTION

3.1 Field Conditions

.1 Do not perform work under adverse field conditions, such as frozen ground or ground covered with snow, ice or standing water, without prior approval.

.2 For hydraulic seeding take reasonable care to prevent

spraying items such as structures, signs, guide rails, fences, plant materials and utilities. Do not perform hydraulic seeding in wind speeds over 20 km/hr.

3.2 Preparation

.1 Grade subgrade to eliminate uneven areas and rough spots, and to ensure positive drainage. Remove all debris, roots, branches, stones in excess of 50 mm diameter, and other deleterious materials. Remove any subsoil that has been contaminated with toxic materials. Dispose of contaminated material off site.

.2 Cultivate area to depth of 100 mm prior to placing topsoil.

.3 Cultivate area to depth of 25 mm when topsoil not required.

.4 Repeat cultivation in those areas where equipment used for hauling and spreading has compacted soil.

3.3 Placing Topsoil

.1 Do not spread topsoil until subgrade has been inspected by Engineer.

.2 Spread topsoil in uniform layer over dry subgrade where seeding or sodding is indicated. Do not place topsoil on frozen subgrade.

.3 Keep topsoil 15 mm below finished grade for sodded areas. For seeded areas bring topsoil to finished grade.

.4 Apply topsoil to depth of 100 mm unless otherwise indicated.

.5 Fine grade topsoil to lines and elevations indicated, leaving surface smooth and uniform with a fine loose texture. Obtain approval of topsoil grade and depth before proceeding with seeding or sodding.

3.4 Application of Lime and Fertilizer

.1 Apply lime at a rate of 50 kg per 100 square meters or at a rate determined by soil analysis. Mix lime thoroughly into full depth of topsoil prior to application of fertilizer.

.2 For dry seeding and sodding apply fertilizer with mechanical spreaders over entire area of topsoil at nitrogen rate of 500 g/100m^2 or at a rate determined by soil analysis.

3.5 Dry Seeding

.1 Seed during local growing season when natural moisture is available to ensure germination and growth.

.2 Apply seed with mechanical spreader at a rate of 2 kg/100m^2 or as recommended by seed manufacturer. Cover and roll with a roller having a mass of 50 kg/m of width

3.6 Sodding

.1 Lay sod as soon as possible after lifting to ensure proper establishment.

.2 Place sod in rows perpendicular to slopes, smooth and even with adjoining areas, and with joints staggered. Butt sections closely without overlapping or leaving gaps between sections. Cut out irregular or thin sections.

.3 Roll sod with a roller having a mass of 50 kg/m of width. Repeated rolling to correct irregularities in grade is not permitted.

.4 Water within four hours of placing to obtain moisture penetration through sod into top 100 mm of topsoil.

.5 For slopes steeper than 1:2, place mesh over topsoil. Secure mesh in place with pegs and cover mesh lightly with topsoil. Lay sod and secure with pegs. Place pegs 100 mm below top edges using 3 pegs per meter. Drive pegs flush with surface of root mat.

3.7 Hydraulic Seeding

.1 Seed during local growing season when natural moisture is available to ensure germination and growth.

.2 Measure all quantities of material by weight or by weight-calibrated volume measurement.

.3 Charge seeder with water, and while agitating, slowly add mulch, seed, fertilizer and lime until all components are thoroughly mixed.

.4 When required add erosion control agent to seeder and mix thoroughly to complete seeding slurry.

.5 Slurry application per 100 m^2:
- .1 Seed - 2.0 kg or as recommended by seed manufacturer.
- .2 Fertilizer - 500 g of nitrogen.
- .3 Mulch - 10 kg.

.4 Erosion Control Agent - as recommended by manufacturer.
.5 Water - minimum 100 liters.
.6 Lime - as determined by soil analysis.

.6 Apply slurry uniformly, blending into grassed areas.

.7 Remove slurry from items and areas not designated to be sprayed.

3.8 Maintenance

.1 Water adequately (daily for 21 days) to assure continued growth. Control water to prevent washouts.

.2 Mow grass to height of 60 mm when it first reaches a height of 80 mm. Maintain at height of 50 -70 mm for two more mowing's. Remove clippings which could smother grass.

.3 Fertilize grassed areas after first mowing.

3.9 Acceptance

.1 Grassed areas will be accepted upon completion of third mowing provided that:
.1 Growth is properly established.
.2 Area is free of bare and dead spots and without weeds.
.3 No surface soil is visible when grass has been cut to a height of 60 mm.

.2 Area sodded or seeded in the fall will be accepted the following spring one month after start of growing season providing that acceptance conditions are fulfilled.

.3 Continue maintenance and mowing until acceptance.

.4 Areas of uneven surface or unsightly appearance must be repaired to the satisfaction of the Engineer.

PART 4.0

4.1 Measurement for Payment

.1 Sodding will be measured in square meters. The square meter measurement will be full compensation for all labour, materials and equipment required for the supply and placement of all sod and topsoil.

.2 Topsoil and Seed will be measured in square meters. The square meter measurement will be full compensation for all

labour, materials and equipment required for the supply and placement of all seed and topsoil.

Ditch Cleaning and Culvert Supply and Installation