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RETOURNER LES SOUMISSIONS À:
Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave. Jasper
5th floor/5e étage
Edmonton
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SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave Jasper
5th floor/5e étage
Edmonton
Alberta
T5J 1S6

Title - Sujet Wastewater Upgrades BNP	
Solicitation No. - N° de l'invitation E0209-170311/A	Amendment No. - N° modif. 001
Client Reference No. - N° de référence du client PCA E0209-170311	Date 2016-06-29
GETS Reference No. - N° de référence de SEAG PW-\$PWU-107-10791	
File No. - N° de dossier PWU-6-39062 (107)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2016-07-05	
Time Zone Fuseau horaire Mountain Daylight Saving Time MDT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Anthony, Mary	Buyer Id - Id de l'acheteur pwu107
Telephone No. - N° de téléphone (780) 237-7582 ()	FAX No. - N° de FAX (780) 497-3510
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

This amendment 001 has been raised to post Questions and Answers received from potential bidders regarding the specification and to post Addendum #1

Banff Wastewater Upgrades

R.077777.001

QUESTIONS AND ANSWERS

Question 1

What size and material is the existing forcemain?

Answer 1

It is the responsibility of the Contractor to uncover and review the existing forcemain. It is believed to be a 50 mm diameter pipe; the material is unknown.

Question 2

Is there a method in place to stop/divert the wastewater flow?

Answer 2

No plan is currently in place. The Contractor shall develop a diversion plan in conjunction with the Departmental Representative.

Question 3

What are the sizes of the existing tanks to be removed?

Answer 3

The sizes of the tanks are unknown. The fiberglass tank shall be removed. The concrete manhole shall be demolished in place.

Question 4

Are the locations of the test pits known?

Answer 4

Refer to the geotechnical report in Appendix A of the specifications.

Question 5

Where are the stumps to be disposed?

Answer 5

The stumps shall be disposed of outside of Banff National Park. Limbed and bucked timber can stay onsite, or be taken offsite by the Contractor.

Question 6

The drawings indicate both "in situ" and "suitable soil" under the septic field. Can you clarify if the in situ soil is suitable?

Answer 6

It should be assumed that the in situ soil is suitable.

Question 7

Please confirm that all permitting is the responsibility of Parks Canada.

Answer 7

Parks Canada will do all permitting. However, liaison between the Contractor and Parks Canada will be needed. The Contractor will be required to provide information required for the Restricted Activity Permit (RAP) (e.g. vehicle and equipment license plate numbers, etc.). The Contractor will also require a Business License.

Question 8

What signage will be required on the road?

Answer 8

The Contractor will be required to submit a Traffic Management Plan for review by Parks Canada and the Departmental Representative. Refer to Addendum 1.

Question 9

Where are the acceptable stockpile locations?

Answer 9

The Contractor will be required to submit a Site Use Plan for review by Parks Canada and the Departmental Representative. Refer to Addendum 1.

Question 10

If there is insufficient on-site topsoil acquired during the stripping process to provide a minimum 150 mm of cover as per specifications, will imported topsoil be required? If so how will it be paid for - per cubic meter measured in the truck box, or per cubic meter measured in place? What will the specifications be?

Answer 10

Backfill will be completed with soil removed and stockpiled on-site. If there is less topsoil available than required to provide a 150 mm depth, then the Contractor shall reduce the topsoil thickness to utilize all material to provide a uniform cover over the site.

Question 11

Will Country Style Manhole Cover be acceptable for Item 9 [concrete valve box]?

Answer 11

Alternate products that meet the design specifications will be approved.

Question 12

Is the 50mm lateral cleanout connected to the 25mm distribution line in each lateral?

Answer 12

Cleanout connection to be 25 mm. Refer to Addendum 1.

Question 13

Section 33 – Utilities is missing from the Specs document. Please advise.

Answer 13

Refer to Addendum 1.

Project Title	Addendum No.:
Septic System Upgrades	1
Project Location:	Project Number:
Banff National Park, Alberta	R.077777.001
Consultant's Name:	Date:
AECOM Canada Ltd.	June 28, 2016
The following changes on the bid documents are effective immediately. This addendum will form part of the contract documents.	
Drawings	
1. Drawing C003, Detail 1. Replace "50 mm dia. PVC Sch 40 riser pipe" with "25 mm dia. PVC Sch 40 riser pipe"	
Specifications	
1. Division 32 – Exterior Improvements: Add the following specification sections to the Technical Specifications: Section 32 91 19.13 - SEEDING	
2. Division 33 – Utilities: Add the following specification sections to the Technical Specifications: Section 33 34 00 - SANITARY UTILITY SEWERAGE FORCE MAINS Section 33 36 00 - UTILITY SEPTIC TANKS Section 33 36 33 - UTILITY DRAINAGE FIELD	
3. Section 01 11 00 – Summary of Work: Add Article 1.7.4 and 1.7.5 as follows: “.4 Contractor shall submit a Traffic Accommodation Plan for approval by Parks Canada and the Departmental Representative.” “.5 Contractor shall submit a Site Use Plan for approval by Parks Canada and the Departmental Representative.”	

Attachments:

- Section 32 91 19.13 - SEEDING
- Section 33 34 00 - SANITARY UTILITY SEWERAGE FORCE MAINS
- Section 33 36 00 - UTILITY SEPTIC TANKS
- Section 33 36 33 - UTILITY DRAINAGE FIELD

END OF ADDENDUM 1

1. GENERAL

1.1 Definitions

- .1 Topsoil is the top layer of soil containing organic material capable of supporting good vegetative growth and suitable for use in top dressing, landscaping and seeding.
- .2 Weeds include, but not limited to, dandelions, jimsonweed, quackgrass, horsetail, morning glory, rush grass, mustard, lambsquarter, chickweed, crabgrass, Canadian thistle, tansy, ragwort, Bermuda grass bindweed, bent grass, perennial sorrel, brome grass, red root, pigweed, buckweed, scentless chamomile, toadflax, foxtail and perennial sow thistle.

1.2 Product Delivery, Storage and Handling

- .1 Seed mix will be supplied by Parks Canada. Contractor to coordinate with Parks Canada and provide required area of seeding.
- .2 Deliver seed to site only when required.

1.3 Measurement for Payment

- .1 Parks Canada will supply seed mix. Payment includes supply of all labour, materials and products to install seed, with the exception of supply of the seed mix.
- .2 Seeding will be measured in sq.m. for all areas where topsoil has been placed.
- .3 Payment for seeding shall be full compensation as per unit rate per sq.m. for everything required to place the seed in accordance with the requirements of the specifications and drawings.

2. PRODUCTS

2.1 Seed Mixture

- .1 Mix #1A Open Deciduous (supplied by Parks Canada):

13%	Foothills rough fescue
13%	Hairy wild rye
13%	Awned wheatgrass
12%	Tufted hair grass
10%	Northern wheatgrass
10%	Rocky Mtn fescue
9%	June grass
8%	Rough hair grass
7%	Alpine bluegrass
5%	Spike trisetum
- .2 The seed mix percentages are by weight.

2.2 Binder

- .1 Use Turfmaster Hydro Seal or equivalent compatible binder additive at the manufacturer's recommended rate, sufficient to mix a consistent slurry.

- .2 Binder shall be mixed and supplied by a recognized supplier and shall have tested rates or purity.

2.3 Mulch

- .1 Material shall be wood cellulose fibre containing no contaminants.
- .2 Fibre shall be supplied by a recognized supplier and shall have a certified weight and composition.
- .3 Minimum application rate is 16.0 kg of air dry fibre per 100 m².
- .4 Fibre shall be measured as it is fed into the seeder.

2.4 Water

- .1 Clean and free of any substance that may inhibit vigorous growth of grass.

2.5 Equipment

- .1 Cultivators: capable of scarifying, discing or harrowing.
- .2 Dry Seeders: of the "Brillion" type, capable of rolling and covering the seed with 3 mm to 6 mm of soil; or of the cyclone type, with flexible wire mat drag.
- .3 Hydro Seeders: capable of thoroughly mixing water, seed, and pulverized wood fibre and of uniformly spraying the mix at designated rate.
- .4 Rollers: of suitable size and mass.

3. EXECUTION

3.1 Planting Season

- .1 Grass Seeding: recommended season May 1 to September 15.

3.2 Preparation

- .1 Remove weeds and debris from topsoil already in place.
- .2 Examine the site, verify the grades and check that the topsoil has been placed as specified.
- .3 The work shall be done in calm weather, during the normal planting season for the type of seed mixture supplied.
- .4 Notify Departmental Representative prior to the start of the seeding operations.
- .5 Cultivate existing topsoil and apply additional topsoil as required to obtain minimum required depths of topsoil. Additional topsoil shall be spread evenly and lightly compacted.
- .6 Float and level out the finished topsoil surface.

3.3 Mechanical Seeding

- .1 Do not seed when prepared topsoil is covered with frost, snow or standing water. Proceed with seeding operations only during favourable weather conditions in accordance with sound horticultural practices.
- .2 Slopes flatter than 3 horizontal to 1 vertical: apply seed by mechanical dry spread (Brillion or Cyclone type) at a rate of 24 kg/1,000 m². Apply in two passes, each pass at a rate of 12 kg/1,000 m² at 90 degrees to each other. Lightly roll seeded area.
- .3 Hand broadcast seeding is unacceptable under any conditions except for site specific repair work and pre-approved work in naturalization areas.
- .4 Thoroughly harrow the site after seed application on ground flatter than 3 horizontal to 1 vertical.
- .5 Sow the seed at a rate specified for the seed type, in two directions, 50% in one direction and remaining 50% of seed at right angles to first seeding pattern.

3.4 Hydro Seeding

- .1 Use a hydro seeder to seed slopes 3 horizontal to 1 vertical or steeper.
- .2 Mix seed with water, and mulch in the following suggested quantities to cover 4,000 m²:
 - .1 Grass Seed: 80 kgs
 - .2 Water: 6,400 litres
 - .3 Mulch: 640 kgs
- .3 Hydro seeding should not be carried out in wind velocities which cause seed mix to be blown.
- .4 Measure quantities of materials to be fed into the seeder, either by weight or by using another approved system.
- .5 Application rates:
 - .1 Grass seeds 2.0 kg per 100 m² or as specified for the seed type.
 - .2 Water 106 L/100 m².
 - .3 Mulch 16 kg/100 m² or sufficient to apply the specified amount of seed per 100 m².
- .6 Thoroughly mix seed, mulch, binder (if specified) and water in a slurry and uniformly apply in one operation. Apply seed mixture then cover with an approved mulch.

3.5 Seed Germination, Dry Seed and Hydro Seed Applications

- .1 If seed fails to germinate within four growing months, re-cultivate and re-seed until germination takes place.

3.6 Warranty

- .1 All grass shall have a one year warranty period from issuance of the Construction Completion Certificate.

- .2 Areas showing deterioration, bare spots or thin areas shall be re-seeded at the Contractor's expense.

3.7 Maintenance

- .1 Maintenance shall include all measures necessary to establish and maintain seeded areas in an acceptable, vigorous and healthy growing condition for a period of one year from the issuance of a Construction Completion Certificate and until the issuance of the Final Acceptance Certificate. Maintenance shall include:
 - .1 Mowing at regular intervals to maintain a minimum height of 60 mm and a maximum height of 75 mm. Do not cut more than 1/3 blade height at any one mowing. Remove heavy clippings immediately.
 - .2 Replacing areas that show root growth failure, deterioration, bare or thin spots or which have been damaged by any means.
 - .3 Top dressing and rolling to repair ruts or erosion.
- .2 Departmental Representative may review the use of herbicides for weed control. They shall be applied in accordance with the manufacturer's recommendations by a licensed applicator. Damage resulting from the Contractor's improper use of herbicides shall be remedied at the Contractor's own expense.

3.8 Final Inspection

- .1 Final inspection of seeded areas will be made prior to the end of the warranty period.
- .2 At the time of inspection all the areas shall be alive and in a healthy satisfactory growing condition, free from weeds.

3.9 Clean-Up

- .1 Clean roadway, walkway and surrounding areas of soil, seed and other debris resulting from work done under this section at the end of each working day or as reviewed by Departmental Representative.

END OF SECTION

1. GENERAL

1.1 Action and Informational Submittals

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for for pipes and backfill and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Certification to be marked on pipe.

1.2 Delivery, Storage and Handling

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
 - .1 Store materials in accordance with manufacturer's recommendations.
 - .2 Store and protect pipes from damage.
 - .3 Replace defective or damaged materials with new.

1.3 Measurement of Payment

- .1 Payment shall be inclusive of the full supply and installation of forcemains including septic field headers all other appurtenances:
 - .1 Excavation, trenching, bedding, backfilling and compaction
 - .2 Supply and installation of all fittings
- .2 Payment shall be per linear meter of pipe installed.
- .3 Clearing, grubbing, and restoration shall be paid separately.

2. PRODUCTS

2.1 Materials

- .1 Polyvinyl chloride (PVC) pipe: to CSA B137
 - .1 Schedule 40
 - .2 Gasket bell end.
 - .3 Pipe joints: bell and spigot with rubber gaskets solvent welded joints or mechanical joints to ANSI/AWWA C111/A21.11, with transition gaskets to pipe manufacturers specifications.
 - .4 Rubber gaskets: to ANSI/AWWA C111/A21.11. Gaskets for mechanical joints to be duck-tipped transition gaskets for PVC.

- .2 High density polyethylene pressure pipes: to CSA B137
 - .1 DR: 9
 - .2 Pressure rating: 1379 kPa (200 psi)
 - .3 Joints: to ANSI/AWWA C207, thermal butt fusion.
 - .4 Polyethylene fittings: to CSA B137.
 - .5 PE 3408 resin.

2.2 Couplings

- .1 All couplings shall be shop applied epoxy coated and suitable for buried installations and wastewater applications.
- .2 Contractor shall confirm materials and sizes of existing forcemain and select suitable coupling for application.
- .3 Submit shop drawings for review and approval by the Departmental Representative. Clearly indicate size and material of connecting pipes and proposed coupling location.
- .4 Flexible, restrained couplings shall be used for connections to forcemains, pressurized pipes or on HDPE pipe.

2.3 Pipe Bedding and Backfill Materials

- .1 Granular material to Section 31 05 16 - Aggregate Materials and as indicated on drawings.

3. EXECUTION

3.1 Preparation

- .1 Clean pipes and fittings of debris and water before installation, and remove defective materials from site.
- .2 Pipes and fittings to be clean and dry.
- .3 Prior to installation, obtain Departmental Representative's approval of pipes and fittings.

3.2 Trenching

- .1 Do trenching Work, in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .2 Trench alignment and depth require approval from Departmental Representative prior to placing bedding material or pipe.
- .3 Protect trench from contents of forcemain or forcemain connection.

3.3 Granular Bedding

- .1 Place granular bedding in unfrozen condition.

- .2 Place granular bedding material in uniform layers not exceeding 150 mm compacted thickness to depth as indicated.
- .3 Shape bed true to grade and to provide continuous, uniform bearing surface for pipe.
- .4 Shape transverse depressions as required to suit joints.
- .5 Compact each layer full width of bed as indicated.
- .6 Fill excavation below design elevation of bottom of specified bedding with compacted bedding material.

3.4 Installation

- .1 Lay and join pipes in accordance with manufacturer's recommendations.
- .2 Avoid damage to machined ends of pipes in handling and moving pipe.
- .3 Maintain grade and alignment of pipes.
- .4 Align pipes carefully before jointing.
- .5 Joint deflection permitted within limits in accordance with pipe manufacturer's written recommendations.
- .6 Support pipe firmly over entire length, except for clearance necessary at couplings.
 - .1 Do not use blocks to support pipe.
- .7 Keep pipe and pipe joints free from foreign material.
- .8 Avoid bumping gasket and knocking it out of position, or contaminating with dirt or other foreign material. Remove disturbed gaskets clean, lubricate and replace before jointing is attempted.
- .9 Support pipes using hand slings or crane as required to minimize lateral pressure on gasket and maintain concentricity until gasket is properly positioned.
- .10 Apply sufficient pressure in making joint to ensure that joint is complete to manufacturer's recommendations.
- .11 Apply restraint to pipe to ensure that joints when completed are held in place, by tamping fill material under and alongside pipe, or otherwise as approved by Departmental Representative.
- .12 When stoppage of Work occurs, block pipe to prevent creep during downtime.

3.5 Pipe Surround

- .1 Place surround material in unfrozen condition.
- .2 Upon completion of pipe laying, and after Departmental Representative has inspected pipe joints, surround and cover pipes as indicated. Leave joints and fittings exposed until field testing is completed.

- .3 Hand place surround material in uniform layers simultaneously on each side of pipe not exceeding 150 mm compacted thickness as indicated.
- .4 Compact each layer as indicated.
- .5 When field test results are acceptable to Departmental Representative, place surround material at pipe joints.

3.6 Backfill

- .1 Place backfill material in unfrozen condition.
- .2 Place backfill material, above pipe surround in uniform layers not exceeding 150 mm compacted thickness up to grades as indicated.
- .3 Under paving and walks, compact backfill to at least 95% corrected maximum dry density at +/- 2% of optimum moisture content.

3.7 Field Testing Of Forcemain

- .1 Testing of force main to be carried out in presence of Departmental Representative.
- .2 Strut and brace caps, bends and tees, to prevent movement when test pressure is applied.
- .3 Expel air from force main, by slowly filling main with water.
- .4 Apply hydrostatic test pressure of 1.5 times the design working pressure of the pipe based on elevation of lowest point in line and corrected to elevation of test gauge for hydrostatic test, and equivalent to the design working pressure of the pipe for leakage test. Departmental Representative to provide required test pressures during construction.
- .5 Apply pressure for 1 hour for pressure test and 2 hours for leakage test.
- .6 Examine exposed pipe, joints and fittings while system is under pressure.
- .7 Remove defective joints, pipe and fittings and replace with new sound material.
- .8 Define leakage as amount of water supplied from water storage tank in order to maintain test pressure for 2 hours.
- .9 Do not exceed allowable leakage as defined in ANSI/AWWA C605.
- .10 Locate and repair defects if leakage is greater than amount specified.
- .11 Repeat test until leakage is within specified allowance for full length of force main.
- .12 Complete backfill.
- .13 Repeat test after completing backfill. Locate and repair defects and backfill. Repeat tests, repairs and backfills as needed until leakage is less than amount specified.

3.8 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

END OF SECTION

1. GENERAL

1.1 Tank Requirements

- .1 Precast concrete septic tanks in accordance with CAN/CSA-B66.
- .2 Tank minimum total working capacity as indicated on the drawings.

1.2 Action and Informational Submittals

- .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures and in accordance with CAN/CSA-A23.4/A251.
- .2 Shop drawings to indicate:
 - .1 Finishes
 - .2 Methods of handling and erection.
 - .3 Openings, sleeves, inserts and related reinforcement.
- .3 Each drawing submission shall bear stamp and signature of qualified professional engineer registered or licensed in Province of Alberta, Canada.

1.3 Qualifications

- .1 Manufacturers of precast concrete elements shall be certified by CSA as meeting requirements of CAN/CSA-A23.4/A251.

1.4 Waste Management and Disposal

- .1 Remove from site and dispose of packaging materials at appropriate recycling facilities.

1.5 Measurement of Payment

- .1 Payment shall be inclusive of the full septic tank supply and install including the following items and all other appurtenances:
 - .1 Excavation, bedding, backfill and cover
 - .2 Frost protection
 - .3 Connection of inlet sanitary sewer or forcemain
 - .4 Risers, access lids and safety screens

2. PRODUCTS

2.1 Concrete Mixes and Materials

- .1 Concrete mixes and materials: to CAN/CSA-B66 and CAN/CSA-A23.1/A23.2.

2.2 Manufacture

- .1 Manufacture units in accordance with CAN/CSA-A23.4/A251, except where specified otherwise.

2.3 Finishes

- .1 Finish tanks to commercial grade to CAN/CSA-A23.4/A251.

2.4 Access

- .1 Provide access holes as shown on Drawings.

2.5 Tank Bedding and Backfill Material

- .1 As shown on Drawings.

3. EXECUTION

3.1 Installation

- .1 Place bedding and surround material in unfrozen condition.
- .2 Do excavation and backfilling in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .3 Place tank bedding material in accordance with details as indicated.
- .4 Make inlet and outlet joints of septic tank watertight.
- .5 Conduct leakage test on septic tank in presence of Departmental Representative, before backfilling. Fill tank to level of effluent pipe, and allow to stand for 24 hours. After 24 hours, top up tank to level of effluent pipe and allow to stand for an additional 24 hours. Allowable leakage in second 24 hours is zero.

END OF SECTION

1. GENERAL

1.1 Quality Assurance

- .1 Use certified installers who comply with local authority having jurisdiction.

1.2 Measurement of Payment

- .1 Payment shall be per linear meter of laterals installed, and shall be inclusive of the full supply and installation of the septic fields including the following items and all other appurtenances, except as noted in Clause 1.2.2 below:
 - .1 Excavation and trenching
 - .2 PVC Schedule 40 laterals
 - .3 Distribution chambers
 - .4 Monitoring, clean-out and inspection ports
 - .5 Backfilling and compaction
 - .6 Commissioning
- .2 The following items will be paid separately:
 - .1 Clearing (if required) and Grubbing
 - .2 Header pipe
 - .3 Concrete valve boxes
 - .4 Restoration (topsoil placement and seeding)

2. PRODUCTS

2.1 Granular Materials

- .1 Granular material to Section 31 05 16 - Aggregate Materials and as shown on the drawings.

2.2 Pipe for Disposal Fields

- .1 Straight PVC Schedule 40 pipe and fittings to CAN/CSA-B182.2. Perforated as indicated.
- .2 Perforations to be made perpendicular to the lateral pipe using proper drill size and a sharp bit.
- .3 Orifice size and spacing as indicated on Drawings.

2.3 Concrete Valve Boxes

- .1 Concrete valve box with open bottom and cast iron lid.
 - .1 Kon Kast Brooks Style Box or approved equivalent.
 - .2 Dimensions shall be suitable to meet the design requirements.

2.4 Source Quality Control

- .1 If requested, provide Departmental Representative with certified copies of factory tests of pipe material.
- .2 Provide Departmental Representative with copies of material testing results for proposed imported material. Departmental Representative to provide written approval of proposed material prior to ordering.

3. EXECUTION

3.1 Trench Type Disposal Field Installation

- .1 Excavate to lines and depths as indicated on the Drawings and in accordance with Section 31 23 33.01 - Excavating, Trenching and Backfilling.
- .2 Install header between septic tank and absorption trenches. Installation to be water-tight.
- .3 Obtain Departmental Representative's approval to operate construction equipment across disposal field.
- .4 Header and laterals: set to min and max levels below grade as indicated on Drawings.
- .5 Connect lengths and place distribution pipe on material as indicated and cover as indicated.
- .6 Connect each distribution pipe individually to header.
- .7 Install clean-outs and inspection ports as shown on the Drawings.
- .8 Maintain pipe elevations within 5 mm of common pipe bottom invert.
- .9 Do not backfill trenches until pipe grade and alignment have been approved by Departmental Representative.
- .10 Backfill trenching as indicated on drawings.

3.2 Commissioning of Pressure Distribution Fields

- .1 Conduct squirt test in the presence of Parks Canada or the Departmental Representative after system installation and before placement of chambers and backfilling.
 - .1 Measure height of discharge at each end of the first and last distribution lateral.
 - .2 Height between orifice discharge point to be within 10% of average height of four locations.
 - .3 Collect discharge from the orifice nearest to pump discharge and the orifice furthest from pump discharge. Collected volume must not vary by more than 15%.
 - .4 Contractor to complete squirt tests and required modifications to ensure requirements are met, before requesting the presence of the Departmental Representative. If squirt test requirements are not met, the Contractor shall pay for the costs incurred by the Departmental representative for witnessing subsequent testing.
- .2 Submit squirt test results to Parks Canada and the Departmental Representative for approval.

- .3 Should heights vary more than permitted in this Section, and the Departmental Representative establishes variation is due to Contractor installation, Contractor to modify distribution piping until meeting the prescribed variation in height. Contractor to pay for all additional Engineering costs, work and testing.

END OF SECTION