DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE
Province of Prince Edward Island

TENDER FORM AND AGREEMENT
Revision 0

THIS AGREEMENT made by and between ....., herein called the Contractor, the Party of the First Part and The Government of Prince Edward Island as represented by the Minister of the Department of Transportation and Infrastructure, herein called the Minister, the Party of the Second Part.

WITNESS, AS FOLLOWS:

1. Definitions

The definition of terms used in this Tender Form and Agreement shall conform in all respects to the definition of terms contained in the document entitled "General Provisions and Contract Specifications for Highway Construction", published by the Department of Transportation and Infrastructure of the Province of Prince Edward Island as amended on the date of closing of Tenders pursuant to this Agreement.

2. General Covenant

The Contractor hereby covenants and agrees with the Minister as herein provided in connection with the following work, namely:

ST. TERESA BRIDGE - STRUCTURE REPLACEMENT **DISTRICT 2**

The scope of this work includes, but is not necessarily limited to the following: the supply of all labour, equipment, and materials necessary to completely replace the existing bridge structure with a new bridge structure. The work on this project shall consist of but not limited to: excavation; slope protection; environmental controls; cold plane and stockpile asphalt; demolition and removal of existing structure; installation of new pipe structure; supply, placement and compaction of backfill against structure; select borrow; base gravels; rip rap; road work complete with asphalt paving; and all other ancillaries required to completely install the structure to the satisfaction of the Owner.

TENDER SUBMISSION:
Thursday, 7 October 2021, 12:00 PM to 2:00 PM
355 Brackley Point Road, Queens County Highway Depot, Charlottetown, PEI

TENDER CLOSE:
Thursday, 7 October 2021, 2:00 PM
355 Brackley Point Road, Queens County Highway Depot, Charlottetown, PEI

3. No Implied Contract

It is hereby understood and agreed between the parties hereto that no implied contract of any kind whatsoever, by, or on behalf, of the Minister shall arise or be implied from anything contained in this Contract, or from any position or situation of the parties at any time, and that this Contract made by the Minister is, and shall be, the only Contract upon which any rights against the Minister are to be founded.

4. How Party of the First Part is Read

Whenever this Contract is entered into by more than one party or parties of the first part, the word "Contractor" shall be read "Contractors," and pronouns in the contract referring to the Contractors shall be read as plural and whenever a corporation is the Party of the First Part, the said pronouns shall be read accordingly.

5. Consideration of Clauses as Covenants

Wherever it is stipulated that anything shall be done or performed by either of the Parties hereto, it shall have the same effect and be constructed as if such Party had entered into a covenant with the other Party to do or perform the same, and as if such covenant had been expressly made on the part of the Contractor, not only on the Contractor's own behalf, but also on the behalf of the Contractor's legal representative, successors or assigns; and as if any such covenant on the part of the Minister has been made on behalf of the Minister, and the Minister's successors in office.

6. Contractors Submission Respecting the Agreement

The Contractor shall, as part of the Contractor's submission respecting this Contract, complete the attached Schedule B, Identification of Principles; Schedule C, Schedule of Tendered Unit Prices; Schedule D, Schedule of Equipment to be used on the work; and Schedule E, Schedule of Sub-Contractors.

The Contract including all appended schedules shall be completed in complete conformity with the instructions to bidders contained in the document entitled "General Provisions and Contract Specification for Highway Construction".

In presenting the Contractor’s submission for consideration by the Minister, the Contractor understands that until, and unless, the Contract is endorsed by the Minister, no Contract between the parties shall exist and the Minister shall not be bound to endorse any Contract.

7. Performance by Contractor

The Contractor, at the Contractor's own expense, shall, except as herein otherwise specifically provided, furnish and provide all and every kind of labour and superintendence, services, tools, implements, machinery, plant materials, articles and whatsoever is necessary for the due execution of the work. The Contractor shall fully construct and erect the work in the most thorough, professional and substantial manner, in every respect to the satisfaction and approval of the Engineer. The Contractor shall complete the work within the time specified herein and deliver it to the Minister in the manner and upon the terms and conditions of the Contract.

8. Bid and Performance Security

The Contractor hereby and herewith deposits with and delivers to the Minister, as security of the due fulfilment of the Contract, one of the following, which shall remain in effect for a minimum of 30 days after tender closing:

a) a Certified Cheque in the amount stipulated in Schedule A - Schedule of Special Provisions.

OR

b) a Bank Draft in the amount stipulated in Schedule A - Schedule of Special Provisions.

OR

c) a Bid Format irrevocable standby Letter of Credit on a Government approved form in the amount stipulated in Schedule A - Schedule of Special Provisions.

OR

d) a Bid Bond in the amount stipulated in Schedule A - Schedule of Special Provisions. The Bond shall be from a surety company authorized to carry on business in Canada guaranteeing to supply a Performance Bond equal to 50% of the contract value, excluding HST, and a Labour and Material Bond equal to 25% of the contract value, excluding HST.

Performance Security must be filed with the Department before work on the project commences. This security shall be held and retained by the Minister for the due and faithful performance, observance and fulfilment by the Contractor of all the covenants, provisos, agreements, conditions and reservations in this Contract contained on the part of the Contractors to be observed, performed and complied with shall be in the form of:

a) a Certified Cheque in the amount of ten percent (10%) of the Contract value, excluding HST, which shall be retained until the warranty period (one (1) year after substantial completion) has elapsed.

OR

b) a Bank Draft in the amount of ten percent (10%) of the Contract value, excluding HST, which shall be retained until the warranty period (one (1) year after substantial completion) has elapsed.

OR

c) a Performance Format irrevocable standby Letter of Credit on a Government approved form in the amount of ten percent (10%) of the Contract value, excluding HST, which shall be retained until the warranty period (one (1) year after substantial completion) has elapsed.

OR

d) a Performance Bond equal to 50% of the contract value, excluding HST, and a Labour and Materials Bond equal to 25% of the contract value, excluding HST, both of which shall be retained until the warranty period (one (1) year after substantial completion) has elapsed.

All performance security which has an expiry date which precedes the end of warranty date must be renewed prior to the time that the security would expire. The bidder will forfeit security to the Minister if the bidder fails to enter into or carry out the Contract when called upon to do so.

It is understood and agreed that the Contractor assumes risk and must bear any loss in respect to the performance security as aforesaid, occasioned by the failure or insolvency of the banks on which any cheque was drawn or in which any deposit was made in connection with the security aforesaid. If at any time hereafter the said Contractor should make default under the said Contract, or if the Minister acting under the powers reserved in the said Contract shall determine that the said works, or any portion thereof remaining to be done, should be taken out of the hands of the Contractor and be completed in any manner or way whatsoever than by the Contractor, or if the Contractor refuses or neglects to pay for work done or materials supplied by any person in connection with the said work, the Minister may, in either case dispose of said security for the carrying out of the construction and completion of the work of the Contract or for paying any salaries or wages for work done, or any accounts for materials supplied for the said works that may be left unpaid by the said Contractor.

In the event of any breach, default or non-performance being made or suffered by the Contractor in or in respect of any of the terms and conditions, covenants, provisions, agreements, or restrictions herein contained, which on the part of the said Contractor should be observed, performed or complied with, the said security so delivered to or deposited with the Minister or by the Minister received in respect thereof, shall by the contractor, be forfeited absolutely to the Minister.

Upon the due and faithful performance, observance and fulfilment by the Contractor of all the terms, provisions, covenants, agreements, conditions, reservations, hereinbefore contained, on the part of the Contractor to be observed, performed and complied with, the Minister shall surrender the performance security.

9. Minister Covenants to Pay

In consideration of the faithful performance by the Contractor of all and singular covenants, agreements and provisions of the Contract, the Minister hereby covenants and agrees with the Contractor that, on the full completion by the Contractor of all the work as specified in the Contract, within the time specified and limited for the final completion thereof, and to the entire satisfaction of the Engineer to be evidenced by the certificate of the Engineer in writing, the said Minister will well and truly pay, or cause to be paid, to the said Contractor the amount of the Contract price, representing the actual quantities in the several items in the Schedule of Prices, identified as Schedule C to this Contract, at the unit prices or lump sum prices quoted by the Contractor. This amount paid to the Contractor as above, shall include all and every kind of work, labour, superintendence, services, tools, implements, machinery, plant materials, articles and things whatsoever necessary for the full execution and completion of the work to the entire satisfaction of the Engineer.

10. Final Payment

It is hereby agreed by the parties hereto that the payment of the final amount due under the Contract, and the adjustment and payment of any bills that may be rendered for work done, in accordance with any alteration in or addition to the same, shall release the Minister from any and all claims or liability on account of work performed under the said Contract or any alteration in or addition to the same.

11. No Waiver

It is hereby agreed that no condoning, excusing, or overlooking by the Minister, or any person acting on the Minister's behalf on previous occasions of breaches or defaults similar to that for which any action is taken or power is exercised, or forfeiture is claimed or enforced against the Contractor, shall be taken as a waiver of any provisions of the Contract, or as defeating, affecting or prejudicing in any way the right of the Minister under the Contract.

12. Components of the Contract

Any and all plans or drawings prepared by the Department, the document titled “General Provisions and Contract Specifications for Highway Construction”, the advertisement, the Tender Form and Agreement together with Schedule A, Schedule of Special Provisions; Schedule B, Identification of Principals; Schedule C, Schedule of Tendered Unit Prices; Schedule D, Schedule of Equipment; and Schedule E, Schedule of Sub-Contractors, as well as any addenda which may be issued by the Department pursuant to this Contract shall hereby be a part of this Contract as fully and to the same effect as if the same had been set forth at length in the body of the Contract.

13. Completion of Work

The Contractor agrees to complete the work on or before 3 December 2021.

14. FOIPP Clause

1. By submitting your bid, you agree to disclosure of the information supplied, subject to the provisions of the Freedom of Information and Protection of Privacy Act (FOIPP).

2. Anything submitted in your bid that you consider to be "confidential information" because of its proprietary nature should be marked as "confidential" and will be subject to appropriate consideration under the Freedom of Information and Protection of Privacy Act.

3. During the delivery and installation of goods and/or services, you may have access to confidential or personal information. Should this occur, you must ensure that such information is not released to any third party or unauthorized individual.

4. Any information provided on this contract may be subject to release under the Freedom of Information and Protection of Privacy Act. You will be consulted prior to the release of any information.

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

SIGNED, SEALED AND DELIVERED
by the Contractor on the day
of , 2021.

.....
CONTRACTOR

In the presence of:

.....

SIGNED, SEALED AND DELIVERED
by the Minister on the day
of , 2021.

.....
MINISTER

In the presence of:

.....

SCHEDULE 'A'
SCHEDULE OF SPECIAL PROVISIONS
Revision 0, September 22, 2021

ST. TERESA BRIDGE - STRUCTURE REPLACEMENT

1. GENERAL PROVISIONS AND CONTRACT SPECIFICATIONS for HIGHWAY CONSTRUCTION

This Document can be accessed online at:
https://www.princeedwardisland.ca/en/publication/general-provisions-and-contract-specifications-highway-construction

Note this document also includes Section 1300 'Highway Structures' which applies to this project. Note that the 1300 series section numbers do not align with the Schedule A nor Schedule C cost item section numbers.

2. TENDER SUBMISSION CONTENTS

Tender submission shall include all of and ONLY the following documents:

Tender Form and Agreement all six (6) pages, with page six (6) signed and dated by Bidder
Completed Schedule B – Identification of Principals
Completed Schedule C – Schedule of Tender Unit Prices
Completed Schedule D – Schedule of Equipment to be used on the Work
Completed Schedule E – Schedule of Subcontractors
Each addendum transmittal, signed and dated by Bidder
Bid Security

3. SECTION 102.07 - BID AND PERFORMANCE SECURITY

The stipulated Bid Security amount shall be thirty thousand dollars ($30,000).

Upon award, the successful Contractor shall replace the Bid Security by submitting to PEI Department of Transportation and Infrastructure (the Department) a Performance Security.

The Performance Security shall remain in place until the warranty period expires (one year after substantial completion).

4. SECTION 102.10 - COMPETENCY OF BIDDER

Bidders must be capable of performing the various items of work bid upon. Bidders shall, upon the request of the Department, provide a statement covering experience on similar work and a statement of their financial resources.

5. ALTERNATE BIDS

The Department will not be entertaining alternate bids on this project.

SCHEDULE 'A'
SCHEDULE OF SPECIAL PROVISIONS
Revision 0, September 22, 2021

ST. TERESA BRIDGE - STRUCTURE REPLACEMENT

6. DEPARTMENT CHARLOTTETOWN STORAGE YARD – ENTRY

Contractor entry into the Department's Charlottetown Storage Yard shall only be permitted via first contacting the Storage Yard Manager. The Department will provide the Contractor with the Manager's contact information upon Contract award.

7. SITE VISIT

The Department recommends that bidders visit the site during the tender period to become familiar with and take into account the existing bridge system and all relevant surrounding site conditions. The successful Contractor to have included in tender price all costs associated with performing all aspects of the work which are affected by existing conditions or related existing conditions which arise as a result of performing any aspect of the work. The Contractor shall investigate the possible presence of underground utilities/services which maybe encountered while performing the work, and take into account all associated precautions and/or altered work methods. No additional compensation will be provided for any work items affected by existing site conditions.

Bidders are responsible for their own safety during the site visit, and are not to negatively affect the safety of the travelling public.

8. SUBMISSIONS

Prior to submission to the Department, the Contractor shall be responsible to review the content of all documents for completeness, correctness, and meeting criteria of the Contract. The Contractor shall also be responsible to coordinate submission's timing such that the Department and/or its Consultant have a reasonable and sufficient amount of time to review submission and return comments so that such comments can be incorporated into the related work without negatively affecting project schedule. Incomplete submissions that do not meet project requirements and/or which may negatively affect the Contractor's construction schedule shall be the responsibility of the Contractor.

All submissions shall be Portable Document Format (PDF), except for as-built drawings which are to be AutoCAD Civil 3D file (Department has version 2019). All multi-page PDF file documents to be created as a file booklet as opposed to individual files, unless booklet byte size is too large for email transmission.

Note that should the Contractor decide to use any part of the Department's drawing(s) to facilitate the preparation of a submission, the Contractor shall first remove from the drawing(s) all references connected to the Department (provincial logo, title block text, engineer's seal, etc.).

Note that final claim payment shall not be considered for approval by the Department until all submissions are submitted with their content approved by the Department.

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ST. TERESA BRIDGE - STRUCTURE REPLACEMENT

9. SECTION 102.13 - SCHEDULING OF THE WORK

The number of working days stipulated for this Contract is twenty (20) working days. No claims for delays caused by whatever external agencies or factors shall be allowed. The Contractor shall work Saturdays (if he deems necessary to meet deadline) and/or maximize the hours per day on site.

Note that construction must start on site on 1 November 2021. The bridge/roadway (entire width) complete with asphalt seal and guardrails must be opened to traffic no later than 3 December 2021, with no interruption to traffic after this date. The overall project must be completed no later than 3 December 2021.

Please note the schedule above is contingent on the Department receiving an extension on the regulatory permit approval to conduct stream work after September 30th, 2021.

All bidders shall supply a Preliminary Construction Schedule with his Tender Documents for review by the Department. Note that the Department's evaluation of submitted bids shall include reviewing the Preliminary Schedule including but not limited to the benefit(s) of earlier completion, bridge/roadway open to traffic (entire width), and overall project completion date. Note that the tender deadline dates indicated for any Phase(s), bridge/roadway open to traffic (entire width), and/or overall project completion are the latest acceptable dates, with earlier dates acceptable.

Prior to Contract award, the selected Bidder shall submit a detailed Final Construction Schedule to the Department for review. The Final Construction Schedule shall identify all primary work activities (eg: excavation, demolition, rock placement, structure installation, earthwork, backfill, road work, asphalt paving, guardrails, etc.). The Final Schedule shall indicate applicable time lines and milestones for all work activities and Phases.

Throughout the project the Contractor shall notify the Department of any situations that may negatively affect the project's Final Construction Schedule.

The Contractor shall, upon the Department's request at any time throughout the project, update and submit to the Department an updated Construction Schedule as deems required to reflect any circumstances that may cause the need for an updated Schedule.

10. SECTION 103.03 - EXTRA WORK

The Cost of any extra work shall not include the costs of service vehicles or the wages of the supervisory personnel except under special circumstances authorized by the Engineer.

Extra work shall be defined as work activity, or service, on its own or part of a larger component of work to be performed, which is not already included as a cost item in the project's Schedule C.

Note that the Department's bridge construction representative (project manager, engineer) shall compare the as- tendered scope of work versus the concerned scope of work to determine whether the concerned work is indeed extra work.

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Any extra work which is to be conducted under a Time and Materials System shall be agreed to by both parties daily, and shall be complimented with the appropriate supplemental information, including, but not limited to:

a) Labour: Submit (for each worker) name, date(s), description of work performed, time of day work performed, manhours, and associated rates;
b) Material: Submit identification, quantity, backup invoices, and associated costs for each;
c) Service or rentals: Submit supporting documentation verifying costs for each item;
d) Equipment: Submit identification, date(s), description of work performed, time of day work performed, quantity of hours, as well as the equipment's year, make, and model. Equipment charges shall be paid based on the Province of PEI Machinery Rental Rates.

Failure to provide the above information, or any other documentation requested by the Engineer to assist verification of actual cost incurred, shall be cause for rejection of the Claim. All claims shall be submitted within thirty (30) days of the extra work being complete, or within the associated progress claim period. Failure to provide the requested documentation in a timely manner may result in a delay of payment for the extra claim, with no incremental extra compensation entertained.
Note that a Department bridge construction representative (data collector, project manager, engineer) must be notified prior to the Contractor performing any activities He deems to be extra work. A bridge representative also must be notified of any non-activity items the Contractors deems extra (eg. lost time and delays, meals, accommodations, services, etc.) prior to these costs being incurred by the Contractor. Failure to notify may result in non-consideration of payment.

Note that the Department reserves the right to consider a lump sum cost proposal (complete with a detailed breakdown of costs as per the Time and Materials breakdown above) from the Contractor. This consideration not does eliminate the Department's option to pay for extra work via Time and Materials.

Note that the Department also reserves the right to award any extra work to a third party other than the Contractor.

11. SECTION 103.04 - FINAL CLEANUP

Site cleanup to existing road, structure, and surrounding area within the contract limits will be considered incidental to the performance of the work and shall be part of this Contract's scope of work. Refer to section 103.04 for more information.

12. SECTION 104.08 - CONTRACTOR'S RESPONSIBILITY

The Contractor shall identify and place a competent and reliable representative with authority to act for the Contractor in charge of the work. The representative shall be responsible for all aspects of the work, including, but not limited to the Contractor's own forces, any and all sub-contractors, suppliers, etc., reviewing, verifying and approving any claims for additional work submitted by sub-contractors, and organizing each day's work plan in light of completing the work within the allotted time frame. No compensation shall be given for any extra work. See Clause 103.03 above.

SCHEDULE 'A'
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Revision 0, September 22, 2021

ST. TERESA BRIDGE - STRUCTURE REPLACEMENT

13. SECTION 104.10 - DAMAGE BY VEHICLES OR OTHER EQUIPMENT

Any damage to any structure elements, or adjacent property, during any activity due to vehicles, heavy equipment, or any other equipment controlled by the Contractor shall be repaired or replaced as determined by the Department and at the Contractor's expense. Do not park heavy equipment on roadway. Refer to section 104.10 for more information.

Reinstatement of existing asphalt, shoulders, ditches, adjacent property, or any other existing feature which is outside the project limits, yet which is damaged by the Contractor, shall be at the Contractor's expense with no additional cost to the Contract. Determination and extent of damage shall be at the discretion of the Department. Reinstatement shall be reasonably to that condition prior to project start.

14. SECTION 104.17 - ENVIRONMENTAL PROTECTION

Dispose of demolished materials at an approved disposal site in accordance with applicable Provincial Environmental Guidelines.

The Contractor shall be responsible to apply, obtain, and pay for all environmental permits such as but not limited to waste disposal, creosote disposal, pit material, etc. The Contractor shall provide copies of applicable permits to the Department upon request.

Any related permits applied for in advance by the Department on behalf of the successful Contractor are made solely in the interest of the project schedule. Any permits issued to the Department shall automatically become the entire responsibility of the Contractor with respect to performing all work activities in compliance with the concerned permits.

The Contractor shall be responsible to apply for, pay for, and submit a copy to the Department of both a Hazardous Waste Permit and a Pit Permit.

The primary criteria to determine the required type and extent of environmental control shall be:

a) all work to be performed in isolation of the watercourse, and/or separated from the watercourse and the toe of slopes via installation of environmental control(s): and
b) the release of sediment into the watercourse shall be prevented.

All environmental controls shall be in place prior to and during related project activities. Refer to specific bid items for related description and measurement of payment for some environmental controls. Controls without a bid item (such as but not limited to Emergency Response Kit) shall be considered incidental to the project with no additional compensation provided.

The type, location, and extent of all environmental controls as a minimum shall be as indicated on the Environmental Control Drawing E1 included in this tender.

The Contractor shall be responsible to monitor (on a daily basis, including non-work days such as weekends or Holidays) all environmental controls. All environmental controls shall be maintained and/or replaced by the Contractor (at no additional cost to the Department) throughout the entire

duration of the project such that controls are effectively performing their function.

The Contractor shall provide all labour, materials, and equipment required for the installation, secure attachment, handling, and disposal of a collection system for all timber material waste generated as a result of drilling, cutting, and installing hardware, etc. into any timber members. No timber material waste shall be permitted to enter the watercourse (neither directly nor indirectly). This item also includes the loading, transport from site, and disposal off site of all collected waste. This item shall have no cost line item and shall be considered incidental to the project.

No additional compensation will be provided for this item.

15. SECTION 106 - PROSECUTION AND PROGRESS, OCCUPATIONAL HEALTH AND SAFETY (OH&S) ACT AND REGULATIONS

No additional compensation shall be provided for this item. All work shall be performed in accordance with the PEI Occupational Health and Safety (OH&S) Act and Regulations.
The Contractor shall submit to the Department a copy of all OH&S reports (independent of report content) related to this construction site. The Contractor shall also submit to the Department written documentation of corrective/remedial measures taken to address any issued identified as requiring such in an OH&S report.

The Contractor shall submit to the Department a copy of a clearance letter issued to the Contractor by the PEI Workers Compensation Board indicating that the Contractor is in good standing. The Contractor shall submit to the Department additional copies verifying renewal of good standing status throughout the duration of the project.

The Contractor shall fully complete and submit to the Department (prior to mobilizing on site) the attached Hazard Assessment Form and the attached Pre-Construction Contractor Site Safety Check List. Alternatively, the Contractor may elect to use his/her own forms provided they meet or exceed (at the Department's discretion) those provided.

The Contractor shall develop and submit to the Department (prior to mobilizing on site) a COVID-19 Safety Plan. The Plan shall include measures/procedures to meet the PEI Chief Public Health Office COVID-19 restrictions as they relate to all pertinent activities, such as but not limited to: employees travelling to/from the site, all work activities on site, worker breaks, portable toilets, wash stations, equipment/tools sanitation, and the Contractor's monitoring system to ensure compliance. Refer to attached Construction Association of PEI document 'Pandemic Planning for the Construction Industry – a Guide'. Note that all costs the Contractor incurs as part of complying with COVID-9 restrictions shall be incorporated into any and/or all bid cost items. No additional compensation shall be provided by the Department for the Contractor to comply with COVID-19 restrictions.

The Contractor shall fully complete and submit to the Department (prior to mobilizing on site) the attached Contractor's Safety Statement.

The Contractor shall submit to the Department Safety Inspection Certificates of any cranes (track, mobile, and/or truck mounted) to be used on site and/or in the Department's Storage Yard. All crane

certificates shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI.

The Contractor is responsible to ensure that the work is performed in a safe manner and that all personal protective equipment, equipment, etc., are in good working order and safe working condition. The Contractor is also responsible to ensure that his labourers, traffic control personnel, and skilled trades people have been adequately trained in their respective roles and duties, as well as their rights and responsibilities under the PEI Occupational Health and Safety Act and Regulations.

The Contractor is responsible to ensure that all equipment can safely enter, maneuver within, and exit the site. The Contractor shall take measures to ensure trucks can safely enter, maneuver within, queue, load, off-load, and exit the site. This includes measures to provide adequate and safe turning areas as required. The Contractor shall be required to arrange and pay for any off-site areas required to facilitate truck/equipment utilization.

The Contractor shall submit to the Department upon request any documentation (example: tool box meeting minutes, incident reports, accident reports, training certificates, etc.) related to safety for this project.

Delivery of earth material shall be by tandem truck only. Delivery via trailers shall not be permitted, except for riprap material. Any other circumstances must be approved by the Department.

In accordance with Chapter 0-1, Part 2, of the Occupational health and Safety regulations, the Contractor shall provide portable toilet during construction.

The Contractor, including its employees and sub-contractors, shall abide by the PEI Public Service Commission's (PEI PSC) Drug, Alcohol, and Medication Policy as a condition of performing work activities on the project site. The PEI PSC Policy can be viewed at https://psc.gpei.ca/human-resource-policy-and-procedures-manual, Section 9.08. Should the Contractor have their own Policy regarding Drug, Alcohol, and Medication, the most stringent policy shall apply.

The Contractor agrees to accept sole responsibility to comply with all federal, provincial and municipal legislation which may have application to the Work and agrees to comply with all provincial and federal legislation affecting conditions of work and wage rates including the Employment Standards Act R.S.P.E.I. 1988, Cap. E-6.2, the Workers Compensation Act R.S.P.E.I. 1988, Cap. W-7.1, or any other laws that impose obligations in the nature of employers' obligations. The Contractor agrees to follow the Public Service Commission Human Resource Policies 9.05 Violence in the Workplace Policy; 9.08 Drug, Alcohol, and Medication Policy, and 11.01 Policy for the Prevention and Resolution of Harassment in the Workplace while working on Government sites, in Government vehicles or alongside Government staff.

https://psc.gpei.ca/sites/psc.gpei.ca/files/HRPolicy/HRManual_9.05.pdf
https://psc.gpei.ca/sites/psc.gpei.ca/files/9.08%20DrugAlcoholAndMedicationPolicy.pdf
https://psc.gpei.ca/files/PDF%20Files/hrp-manual/hrppm_11.01.pdf

The Contractor agrees to accept the full cost of doing those things required under this paragraph

and will not charge or seek reimbursement from the *Owner* in any way, such costs having been taken into consideration and included in the rates of payment stipulated in this Agreement.

16. SECTION 107.04 – PAYMENT OF WORKERS

The Contractor shall be responsible for employing enough traffic control personnel to cover off the minimum requirements of PEI OH&S or as indicated by a representative of PEI OH&S. The Department shall provide a list of trained candidates for the Contractor to select from if he so chooses.

No additional compensation shall be provided, for any reason, beyond the hourly rate compensation as indicated in tender document Schedule C, for hours served performing traffic control.

17. SECTION 201.01 - CLEARING

The unit price bid for this item shall be full compensation for the provision of all labour, materials, and equipment required to remove trees and associated stumps, within the project area as required to facilitate construction work. Note that prior to any tree clearing the Contractor shall confirm with the Department the extent of such.

Work shall include but not be limited to the cutting of trees, delimbing, cutting into lengths as required for transport, loading, transport off site, and disposal. All fallen tree components shall be deemed the property of the Contractor and shall be disposed of in an environmentally acceptable manner in accordance with the PEI Waste Management Regulations at no additional charge to the Contract. Location and extent of area of tree removal shall first be confirmed with the Department prior to cutting any trees.

18. SECTION 202.01 - GRUBBING

Grubbing shall also include the stripping, removal, and disposal of all topsoil as required within the project limits.

19. SECTION 907 - VEHICLE CONFIGURATIONS AND RESTRICTIONS

The bridge site shall remain open with one (1) lane of alternating traffic directions 24/7 at all times during construction. Construction shall therefore be done in Phases. The Contractor shall be responsible for organizing his work crews and traffic control personnel accordingly and shall be responsible for all aspects of traffic control as per General Conditions 105.06 and 105.07 of the General Provisions and Contract Specifications.

The Department will install and maintain 'stop and go' (green and red) traffic lights at both approaches to the site to control the alternating direction and que length of traffic 24/7 at all times

during the construction period.

The AADT (average annual daily traffic) on this project shall be understood to be approximately 856 vehicles per day.

20. BID ITEM # 20306 - EXCAVATION: EARTH SURPLUS/SUITABLE

The unit price bid for this item shall include the handling of surplus material to a separate site designated by the Contractor to be later used as common borrow material for embankment or roadbed construction for this project's site. The Department will determine on site the identification and extent of material deemed surplus suitable. The unit rate bid for this item shall include the excavation, loading, transportation off site (or store on site if the Contractor determines there is sufficient space), stockpiling, any environmental controls required, reloading, transportation back to this site, placement, grading, and compaction of the material. Contractor to determine in conjunction with the Department representative the extent of excavation so to place any equipment and/or manouevre trucks or equipment within the site. The Contractor is responsible for providing a separate site to temporarily store the material and ensure that it is secured for use by the Department. No additional compensation shall be entertained for any part thereof required to conduct the work as intended.

Contractor to determine in conjunction with the Department representative the extent of excavation so to place any equipment and/or manouevre trucks or equipment within the site.

For the purpose of determining the volume of material excavated, the Contractor shall be responsible for all costs to perform a site survey (both prior to and after excavation) of the excavated area and submit to the Department a digital file (AutoCAD Civil 3D file, Dept has version 2019) indicating digital sketches of applicable cross sections used to determine the volume of material. The sketches shall also indicate the associated volume of material in units of cubic metres. The survey results are to be referenced to the Department's site survey benchmark. The Department will provide to the Contractor an Autocad file indicating the results (coordinates and ground elevations) of the Department's site topographical survey of the existing conditions. This data shall be used by the Contractor to aid in determining the volume of material excavated.

Note that the Department shall determine on site, during excavation, the vertical extent of excavation within the existing roadbed from the mass excavation of the new structure area back to the project limits.

The Contractor shall take due care during all ground disturbing activities on the site relative to possibly unearthing items of cultural significance. If any such items are unearthed all ground disturbing activities shall halt until applicable authorities are notified and proper care and attention has been undertaken.

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21. BID ITEM #20307 – EXCAVATION: EARTH WASTE

The unit rate bid for this item shall include the excavation, loading, transportation, any environmental controls required, and disposal of earth waste material off site. The Department will determine on site the identification and extent of material deemed waste. Contractor to determine in conjunction with the Department representative the extent of excavation so to place any equipment and/or manouevre trucks or equipment within the site. No additional compensation shall be entertained for any part thereof required to conduct the work as intended.

This cost item also includes all excavation required to create the new watercourse alignment locally upstream and downstream of the new structure.

For the purpose of determining the volume of material excavated, the Contractor shall be responsible for all costs to perform a site survey of the excavated area (both prior to and after excavation) and submit to the Department a digital file (Autocad Civil 3D file, Dept has version 2019) indicating digital sketches of applicable cross sections used to determine the volume of material. The sketches shall also indicate the associated volume of material in units of cubic metres. The survey results are to be referenced to the Department's site survey benchmark. The Department will provide to the Contractor an Autocad file indicating the results (coordinates and ground elevations) of the Department's site topographical survey of the existing conditions. This data shall be used by the Contractor to aid in determining the volume of material excavated.

Note that the Department shall determine on site, during excavation, the vertical extent of excavation within the existing roadbed from the mass excavation back to the project limits.

The Contractor shall take due care during all ground disturbing activities on the site relative to possibly unearthing items of cultural significance. If any such items are unearthed all ground disturbing activities shall halt until applicable authorities are notified and proper care and attention has been undertaken.

22. BID ITEM # 20316 – EXCAVATION: PAVEMENT

The existing asphalt pavement shall be excavated to full depth off the existing road and bridge. The RAP (reclaimed asphalt pavement) shall be transported and stockpiled by the Contractor at the Department's Charlottetown Storage Yard. The unit bid price for the above listed shall be full compensation for the work. No additional compensation shall be provided.

Note that the Contractor shall confirm with the Department, prior to starting any asphalt excavation activities, the extent of excavation required.

23. SECTION 20701 - GRANULAR BASE: CLASS A

The unit bid price for this item shall include the supply, placement, and compaction of Class 'A' granular base for the roadway as well as granular shoulders. This item also includes the cost of use

of a shoulder machine. Contractor shall determine and verify quantity of material required prior to ordering and site delivery. Use and extent of material may also be determined on site by Department representative. There shall be no additional measurement nor payment for fine grading, placement, and compaction of shoulder material.

24. SECTION 20709 - CLASS D GRAVEL

This item includes the supply, placement, and compaction of Class 'D' granular material within the foundation areas as deemed required by the Department. Contractor shall determine and verify quantity of material required prior to ordering and site delivery. Use and extent of material may also be determined on site by Department representative.

25. SECTION 21301 - RANDOM RIP-RAP R5

The unit bid price for this item shall include the supply and placement of random R5 rip rap as indicated on the drawings, or as directed on site by the Department. Use and extent of material may also be determined on site by Department representative. The Contractor shall co-ordinate delivery of material on site such that it is dumped off a truck only once on site prior to its final placement. Contractor shall determine and verify quantity of material required prior to ordering and site delivery.

Note that all rip rap material shall be granite and meet the Department's Technical Specification Clause 213.02 for Class 1 material.

Note that R5 will be required along the bottom of new watercourse surfaces, as well as part of local treatment along inlet and outlet embankments.

26. SECTION 21303 - RANDOM RIP-RAP R50

The unit bid price for this item shall include the supply and placement of random R50 rip rap as indicated on the drawings, or as directed on site by the Department. Use and extent of material may also be determined on site by Department representative. The Contractor shall co-ordinate delivery of material on site such that it is dumped off a truck only once on site prior to its final placement. Contractor shall determine and verify quantity of material required prior to ordering and site delivery.

Note that all rip rap material shall be granite and meet the Department's Technical Specification Clause 213.02 for Class 1 material.

Note that the Department's specification for the percent finer by mass for the 330mm size shall read 0%, not 0-20%.

Note that R50 will be required as part of local treatment along inlet and outlet embankments.

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27. SECTION 21304 – RANDOM RIP-RAP R100

The unit bid price for this item shall include the supply and placement of random R100 rip rap as indicated on the drawings, or as directed on site by the Department. Use and extent of material may also be determined on site by Department representative. The Contractor shall co-ordinate delivery of material on site such that it is dumped off a truck only once on site prior to its final placement. Contractor shall determine and verify quantity of material required prior to ordering and site delivery.

Note that all rip rap material shall be granite and meet the Department's Technical Specification Clause 213.02 for Class 1 material.

Note that the Department's specification for the percent finer by mass for the 420mm size shall read 0%, not 40-55%.

28. SECTION 21801 – FILTER FABRIC

The unit bid price for this item shall include the supply and placement of filter fabric as indicated on the drawings or as required for other purposes such as but not limited to environmental controls. Note that the cost associated with filter fabric which is included as part of other cost items shall not be included as part of this cost item. Filter fabric shall be type N3 at all locations.

29. BID ITEM # 50101 – ASPHALT CEMENT

For bidding purposes, an artificial rack price of nine hundred dollars ($900.00) per tonne, without anti- stripping, shall replace the Department's posted Average Asphalt Binder Rack Price table for this Contract. This artificial price shall be used as the price index when calculating the liquid asphalt cement price adjustment.

30. BID ITEM # 60370 – RAP: LOAD, TRANSPORT, AND PLACE

The unit bid price bid for the above listed item shall be full compensation for the provision of all labour, materials, and equipment required to load RAP (reclaimed asphalt pavement) at the Department's Charlottetown Storage Yard, transport to site, offload, place, and compact RAP for the temporary bypass roads to serve as the wearing surface. No additional compensation shall be provided.

The unit bid price for this item shall also include all costs (such as but not limited to labour, equipment, vehicle, trucking, loading, unloading, etc) related to maintaining the RAP throughout the duration of its use on the temporary bypass roads. Maintenance activities shall include, but not limited to, filling potholes, regrading, etc as required to provide a reasonable wearing surface given the material and volume of traffic. Any additional RAP required shall be supplied by the Department's in a stockpile at the Department's Charlottetown's Storage Yard. Maintenance activities shall also be commenced at any time upon the request of the Department.

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31. BID ITEM # 70405 - COLD PLANE & STOCKPILE: RAP

The existing asphalt pavement along both approach roads and over the existing bridge structure, as well as the recently placed asphalt millings on the temporary bypass roads shall be cold planed to full depth, except 50mm depth at each end of project limits as indicated on the drawings. The RAP (reclaimed asphalt pavement) shall be transported and stockpiled by the Contractor at the Department's Bridgetown Storage Yard. The unit bid price for the above listed shall be full compensation for the work. No additional compensation shall be provided.

Note this item does not include existing asphalt to be excavated as per Item # 20316.

Note that the Contractor shall confirm with the Department, prior to starting any cold planing activities, the extent of cold planing required.

32. BID ITEM # 80302 - HYDROSEEDING

The unit bid price for the above listed item shall include seeding of all topsoiled areas once the concerned areas are topsoiled. This shall include all disturbed embankments, ditches, new roadway embankments, etc within the project limits, as well as the transport offsite disposal area. Acceptable products shall be Flexterra, Firbramulch, or equivalent approved by the Department.

Refer to Section 82100 - Environmental Controls - for Spring 2022 hydroseeding.

33. BID ITEM # 82100 - ENVIRONMENTAL CONTROLS

This lump sum cost item shall include all costs associated with the supply, overall fabrication, installation, relocation as required, maintenance/repair, replacement of damaged areas, daily inspection, positive fastening or anchorage measures required to keep in location, adjustments, decommissioning, and removal from site of silt boom(s) as required on site to meet the primary environmental protection criteria. The unit price shall be specific for this project only. Loss of future use (for any reason) of the silt boom on separate projects shall not be compensated.

The boom(s) shall be installed for a maximum of eight (8) hours during a day to permit fish passage. The bid price shall allow for removal and reinstallation of boom(s) as required to satisfy this requirement.

This item shall also include all costs associated with the supply, overall fabrication, installation, maintenance/repair, replacement of damaged areas, daily inspection, positive fastening or anchorage measures required to keep in location, adjustments, decommissioning, and removal from site of type 1 silt fence, type 2 silt fence, filter fabric, and straw blanket as required on site to meet the primary environmental protection criteria. Note that straw blanket to remain on site.

The type, location, and extent of environmental controls as a minimum shall be in place, prior to starting construction activities, as indicated on the Environmental Control Drawing E1 included in this tender.

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Note that in preparation for winter 2022 stabilization, any exposed earth areas after 1 October 2021 shall be covered in hay mulch their entire area. The Contractor shall then return to the site in Spring 2022, remove from site the remnant mulch, till the surface, and then apply hydroseed.

This item shall also include all costs associated with the supply, placement, and daily inspection of hay mulch and hay bales as required on site to meet the primary environmental protection criteria.

No additional compensation shall be provided for this item.

34. BID ITEM # 90201 - FLEXBEAM GUARDRAIL: REMOVAL

The unit price bid for the above listed item shall include the removal of all the existing guardrail complete with timber posts, any timber spacer blocks, and all associated hardware along both sides of the existing bridge and approach road up to their respective terminations within or beyond the project limits. All flexbeam elements to be delivered to the Department's Charlottetown Storage Yard. Loading, transport, and off-loading to be by and at Contractor's expense. Contractor to co-ordinate delivery to the storage yard with contact provided by the Department. Existing posts, spacer blocks, and hardware to be disposed of off site in an environmentally acceptable manner in accordance with the PEI Waste Management Regulations. No additional compensation shall be provided for this item.

Note: Flexbeam lengths are to be taken apart at the bolted joints.

Note: Do not torch the flexbeam section at any location. Nuts are to be removed via a torque wrench or grinder. Do not torch larger holes at bolt locations.

35. BID ITEM # 90301 - FLEXBEAM GUARDRAIL: ERECT

The unit price bid for the above listed item shall include the supply of all new flexbeam guardrail, timber posts, timber spacer blocks, and all associated hardware; transport all to site; unloading, and installation of all elements on site. Note that posts are to be located as per Department Specification. End terminations shall be buried at all four (4) locations. No additional compensation shall be provided for this item.

Note that guardrail installation shall not occur until after the final shoulder work is complete.

36. BID ITEM # 90803 – TRAFFIC CONTROL DEVICES

The Contractor shall be responsible for the supply, fabrication, secure placement on site, replacement, periodic maintenance / repositioning / keeping upright, handling, repositioning prior to and after any vehicle entry/exit to/from the site, repositioning between Phases, and final removal from site of all temporary traffic control condition devices such as but not limited to delineators, warning, guidance, protection, etc. Concrete barriers are not included in this item. No additional compensation shall be provided for this item.

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37. BID ITEM # 130002 - STREAM DIVERSION

Note that this item pertains to stream containment, even though the title is Stream Diversion. The existing watercourse alignment will be altered, other than local containment measures.

This item pertains to constructing and maintaining stream containment required to perform all new construction activities in a dry condition. Dry condition means no ponded water.

The work activity shall include but not be limited to: supply, placement, maintenance, and eventual removal from site of all material, as determined by the Contractor, to create a fully contained watercourse such as but not limited to gabion baskets, sand bags, sheathing, concrete jersey barriers, steel sheet piling, steel plates, timber framing, shoring and bracing, plastic liners, HDPE liners, concrete or plastic pipes, stakes, rip rap, weight/anchorage material, pumps, etc; monitoring and maintenance of area receiving pumped water away from the construction area; provision of all required labour, security personnel, and all other ancillaries required to completely divert the watercourse away from the associated work area. Any shoring and bracing required shall be designed by a professional engineer registered with Engineers PEI.

This item shall include all work activities associated with the supply, installation, and eventual removal of watercourse barriers (full water depth and width of the watercourse) upstream and downstream of the work area, and pumping the watercourse water from the upstream area to the downstream area (including all associated environmental controls) of the site as required to perform related work in a dry condition. Dry condition means no ponded water.

This item shall also include all work activities associated with the development and submission by the Contractor to the Department a Stream Containment Plan indicating items such as but not limited to: type of materials to divert/contain/direct the water monitoring and maintenance systems, and any associated environmental controls. The Stream Containment Plan shall be submitted at least two (2) weeks prior to commencing any activity related to the diversion.

This item shall also include all work activities associated with performing a fish rescue prior to pumping excess water remaining after watercourse is realigned.

This item shall not be paid, and shall be incidental to the project cost.

38. BID ITEM # 130503 – INSTALL CONCRETE PIPE CULVERT

NOTE TO BIDDERS: ONLY PRICE ONE (1) OF THE FOLLOWING BID ITEMS IN SCHEDULE C: OF ONE DOLLAR ($1.00) FOR BID ITEM NOT PURSUING.

130503 - Install Concrete Pipe Culvert
130510 - Install HDPE Pipe Culvert

This cost item pertains to the all costs associated with the design, supply, and installation of precast concrete pipe structure complete with pre-cast cut-off wall and precast inlet control element as

indicated on Department drawing. Note that the material for both the inlet control element and the cut-off wall shall be concrete.

Note that the Department has performed the hydraulic design for the site, and has determined the cross section required for the structure. The structure's inside surface, as well as the inlet control element's exposed surfaces, shall have a Mannings Roughness Coefficient no more than 0.013.

The Department requires the structure to be placed in its field position utilizing maximum lay lengths.

The use of Duraforms or equivalent product shall not be used on any portion of the work.

The use of snap-off form ties is not permitted on any portion of the work.

This item shall also include all costs associated with the supply, installation, fitting, and removal of form liner material on the entire surface area of the 'water side' vertical face of the sidewalls of the inlet control element.

PRECAST UNITS:

The lump sum price for the above listed item shall be full compensation for:

A) The engineered structure design as per CAN/CSA -S6-S19 Canadian Highway Bridge Design Code. The structure design shall also include the design of: granular bedding, inlet control element, inlet cut-off wall, and the engineered granular backfill envelope. Both the granular bedding and granular backfill shall be with material identified, and with associated properties, indicated in the Department's document 'General Provisions and Contract Specifications for Highway Construction'.

B) The development of structure design drawings for all of the above components listed in (A) indicating all material criteria, material grades, dimensions, invert elevations (as provided by the Department), component-to-component joint connection detail (to be structurally intregal and water-tight), bedding material limits (minimum 450mm thick), backfill envelope limits, backfill procedures, inlet control element connection details to the structure, inlet cut-off wall connection details to the structure, each component length field location and resulting cutoff location, compaction criteria, calculated maximum soil bearing pressure below structure, any construction methodologies and/or restrictions, and other any design related information. Design drawings to be submitted to the Department for general review. All design drawings shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI.

C) The development of structure lift design drawings indicating structure's total mass associated with component length installed, location of lift points relative to structure's length, lift equipment location and required lift capacity, any spreader beam details (size, location, length), cable and/or strap sizes, and connections. Lift design drawings to be submitted to the Department for general review. All lift design drawings shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI.

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D) The development of structure storage design drawings indicating any blocking and/or supports. Storage design drawing to indicate requirements for both transport trailer condition and a ground surface condition. Storage design drawings to be submitted to the Department for general review. All storage design drawings shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI.

E) Supply, transport to site, off-loading, on-site storage (if required), lift reinforcement and/or spreader beams, and installation and alignment of the entire structure to the satisfaction of the Engineer, manufacturer, and structure Supplier's technical representative. The Contractor shall adhere to the strict instructions or recommendations of the structure Supplier's installation and/or his on-site technical representative.

F) Design and installation of the pipe structure(s) and surrounding granular material in accordance the American Concrete Pipe Association's Standard Installation Type 1.

The bid price for this item shall also be full compensation for: all design engineering, drafting, labour, equipment and materials required to completely design, fabricate, and supply precast concrete units, concrete testing, temperature protection, concrete repair, all complete with: the provision of design drawings, the provisions of rebar placement drawings, the provision of concrete mix proportion, the provision of reinforcement mill certificates, the provision of crane safety certificates, the provision of insurance and safety related documents, the provision of inspection and test report documents, any falsework, reinforcing steel, cast-in lift hardware, concrete supply and placement, curing, handling of units within the Supplier's production facility, rigging design, storage design, all costs associated with storing all units at the Supplier's yard, all costs associated with loading and handling all units at the Supplier's yard; all costs (including any permits) associated with transporting all units to the bridge site; all costs associated with unloading and installing all units at the bridge site; supply and installation of joint flexible material for all unit-unit joints upon site installation, and all other incidentals required to complete the work.

<u>DESIGN COMPANY & INSURANCE:</u>

Note that the structural design of: the structure structure, inlet control element, cut-off wall, lift design system, granular bedding, and the engineered granular backfill envelope shall be performed by a company registered to practice engineering in PEI. The Contractor shall submit to the Department a copy of the design company's Certificate of Authorization (COA) as granted by Engineers PEI.

The company performing the structural design shall also carry at least two million dollars ($2,000,000) coverage (per occurrence) of Professional Liability (Errors and Omissions) Insurance. The Supplier shall submit to the Department a copy of the design company's Certificate of Insurance verifying such coverage.

<u>CONCRETE MIX PROPORTION:</u>

The precast concrete concrete design parameters shall include Silica Fume Blended Cement and a Corrosion Inhibitor. NOTE: ALL CONCRETE MIX PROPORTION SHALL BE

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The mix proportions for concrete (indicating mix contents and associated proportions) shall be submitted to the Department for general review. The mix proportion shall be noted as specific for this project. The mix design and certification shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI. Certification shall state that the mix design will meet or exceed project requirements.

DESIGN CRITERIA:

Design criteria shall conform to the following:

A) Loading shall be in strict accordance with CSA S6-19 Canadian Highway Bridge Design Code, with CL-625 live loading, and any other relevant codes (ie CSA A23.1, CSA A23.2, G40.21, etc);
B) Depth of Bury: as per Department drawings;
C) Unit W eight of Backfill: γ = 22 kN/m^3;
D) Internal Angle of Friction: ϕ = 31°;
E) Use of snap-off form ties shall NOT be permitted on any portion of the precast units;
F) Clear Diameter: as per Department drawings;
G) Joint detail around the entire perimeter of both ends of all units shall incorporate a 'bell and spigot' concept whereby the units can be installed in the field similar to field installation of storm or water pipe (ie water flows into the bell end).

DESIGN DRAWINGS:

The Supplier shall provide final design drawings indicating the following but not limited to: design dead and live loads, all dimensions, lay length, concrete and reinforcing steel material criteria, rigging diagram for lifting the units, minimum concrete compressive strength required for lifting, total unit mass, backfill material criteria and placement extent, all steel reinforcement size and spacing, local reinforcement details, lift insert type and associated local reinforcement detail, and any other pertinent information related to the design, fabrication, handling, and eventual field installation of the units. All final design drawings shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI.

Note that the following, as well all other pertinent design related information, as a minimum, shall be noted on the design drawings:

A) 28 day compressive design strength, minimum 45 MPa;
B) Minimum compressive strength required for lifting the unit;
C) Load combinations per the latest edition of CSA S6-19;
D) Load combinations related to depth of bury;
E) Soil backfill properties;
F) Reactions (ULS and SLS) for foundation design, based on each load combination;
G) Mass of a unit;
H) Storage diagram indicating plan view locations of timber block supports;

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REINFORCEMENT MILL CERTIFICATIONS:

This item also includes all costs associated with submitting to the Department mill certificates for the reinforcing steel incorporated into all of the precast units.

CRANE SAFETY CERTIFICATION:

The Supplier shall submit to the Department crane safety certificates for all cranes used in the Supplier's fabrication shop and within its storage yard, and for all cranes to be used for unloading units at the bridge site.

All certifications shall bear a P Eng stamp signed and dated by a professional engineer registered with the Association of Professional Engineers of the province where the crane is to be used.

The company performing the crane inspection shall also submit to the Department a copy of the company's Certificate of Authorization (COA) as granted by the Association of Professional Engineers of the province where the crane is to be used.

PRE-PLACEMENT INSPECTION:

This item also includes all costs associated with performing a pre-placement inspection and completing a Pre-Placement Inspection Form for each unit cast, as well as for each concrete placement related to the inlet control element. Items on the Pre-Placement Inspection Form shall include but not limited to: date, inspector's name (printed), ambient temperature, form dimensions, form space cleaned, rebar size, rebar spacing, protective cover, tie-wire not within the protective cover width, and inserts: quantity, type, size, location, and positive aligned positioning.

All results shall be documented and matched with each unit's identification label. All Pre-Placement Inspection Forms shall be submitted to the Department maximum every two (2) weeks throughout the duration of casting the project's first to final unit.

The Department shall not approve the shipment of any unit from the Supplier's yard until the Pre-Placement Inspection Form associated with the unit has been submitted to the Department, with related content deemed acceptable by the Department.

CONCRETE TESTING:

This item also includes all costs associated with concrete testing (slump, air, and cylinder samples complete with associated breaks) as per CAN/CSA A23.3 and CAN/CSA A23.2 latest edition for each unit.

Note the following regarding concrete tests:

A) Cylinder samples shall be made only by certified personnel;
B) All tests shall be performed only by certified personnel;

C) Certification shall be granted through industry recognized programs by either Canadian Standards Association (CSA) and/or American Concrete Institute (ACI);
D) The Supplier shall submit to the Department valid (indicating expire date) certification records of individuals making cylinders and/or performing concrete tests.

All test results and associated reports shall be documented and match with each unit's identification (NOT the supplier's internal unit number). For each unit the Supplier shall submit to the Department its concrete compressive strength test report verifying that the minimum compressive strength for lifting the unit has been attained.

Refer to Curing Inspection section of this document regarding compressive test required to verify 70% strength has been attained.

Note that the criterion for a unit's final compressive strength acceptance shall be the 28 day test result (the average of 2 cylinders). Beyond the 28 day cylinders, the Supplier shall determine the number of cylinders (field and/or lab cured) required for other means such as but not limited to curing verification.

All units' individual concrete test reports shall be submitted to the Department maximum every two (2) weeks throughout the duration of casting the project's first to final unit.

All test results and associated reports shall indicate the tester's name (printed).

The Supplier shall also develop a summary spreadsheet indicating all test results and corresponding test dates for each unit. This spreadsheet shall be submitted to the Department maximum every two (2) weeks throughout the duration of casting the first to final unit.

The Department shall not approve the shipment of any unit from the Supplier's yard until all concrete test results associated with the unit have been submitted to the Department, with related content deemed acceptable by the Department.

TEMPERATURE PROTECTION:

The unit bid price for this item shall also be full compensation for the provision of all labour, materials, energy source, and equipment required to supply heat to maintain ambient temperatures (ie temperature surrounding the unit) within criteria as indicated in CAN/CSA A23.1 latest edition. This applies to pre-placement of concrete, placement, and curing time periods.

Upon request from the Department, the Supplier shall develop and submit a Temperature Protection Plan to the Department. Items on the Temperature Protection Plan shall include but not limited to: minimum form temperature prior to concrete placement, heat supply source, type of enclosure and materials surrounding unit, temperature targets during placement and cure period, temperature monitoring system, duration of applied heat, and cool-down system and associated temperature targets.

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CURING INSPECTION:

Since the concrete specified is high performance concrete, immediately upon form release all concrete shall be moist cured, in accordance with CAN/CSA A23.1 latest edition, continuous 24/7 for the time necessary to attain 70% of the specified 28 day compressive design strength. This requirement is to satisfy 'additional curing for durability' as per CAN/CSA A23.1 latest edition. For each unit, as well as for each concrete placement related to the inlet control element, the Supplier shall submit to the Department its concrete compressive strength test report verifying that this strength threshold has been attained.

This item also includes all costs associated with performing curing inspection and completing a Curing Inspection Form for each unit cast, as well as for each concrete placement related to the inlet control element. All curing shall be performed in accordance with CAN/CSA A23.1 latest edition.

Items on the Curing Inspection Form shall include but not limited to:

A) Date of concrete placement;
B) Date(s) and ambient temperature (ie temperature surrounding the unit);
C) Date(s) and method of curing throughout the 'basic curing period';
D) Justification (concrete cylinder test results) to transition from 'basic curing period' to 'additional curing for durability';
E) Date(s) and confirmation of moist curing throughout the 'additional curing for durability' period;
F) Justification (concrete cylinder test results) to terminate 'additional curing for durability';
G) Concrete cylinder break results (should it be used for justification in D and/or F). Note that a field-cured cylinder (not lab-cured) shall be used for justification D if the minimum time duration did not trigger the transition.

Note that the concrete testing criteria noted elsewhere in this document shall also apply to concrete cylinders if used as part of curing transition and/or termination. All results shall be documented and matched with each unit's identification label. All Curing Inspection Forms, complete with any associated concrete cylinder break results, shall be submitted to the Department maximum every two (2) weeks throughout the duration of casting the project's first to final unit.

All Curing Inspection Forms shall indicate the inspector's name (printed).

The Department shall not approve the shipment of any unit from the Supplier's yard until the Curing Inspection Form associated with the unit has been submitted to the Department, with related content deemed acceptable by the Department.

POST-PLACEMENT INSPECTION:

This item also includes all costs associated with performing a post-placement inspection and completing a Post-Placement Inspection Form for each unit cast, as well as for each concrete placement related to the inlet control element. Items on the Post-Placement Inspection Form shall include but not limited to: unit identification date, inspector's name (printed), and address (indicating

whether present or not, and if so their location and extent) the following defects and/or damages: honeycombing, bugholes, exposed tie wires, cement paste and/or fins, projections beyond concrete face, voids around inserts, cracks, spalls, inserts: quantity, type, size, location, and positive aligned positioning, and removal of any placement aids.

Units shall be stored in the Supplier's storage yard such that all surfaces are accessible and visually exposed for observation. Do not store units one than one (1) tier in height.

Addressing defects and/or damages shall be noted on the Post-Placement Inspection Form via indicating whether present or not, and if present then note their location, size, and extent.

All results shall be documented and matched with each unit's identification label. All Post-Placement Inspection Forms shall be submitted to the Department maximum every two (2) weeks throughout theduration of casting the project's first to final unit.

The Department shall not approve the shipment of any unit from the Supplier's yard until the Post-Placement Inspection Form associated with the unit has been submitted to the Department, with related content deemed acceptable by the Department.

UNIT IDENTIFICATION:

This item also includes all costs associated with the supply and placement of permanent identification labelling for each precast unit. Label text shall be the casting date (yyyy-mm-dd) of respective unit, and the Supplier's company name.

Labelling shall be painted/applied directly on the unit's concrete surface. Size and colour of label/paint to be visible and be located within the 'upper middle third' on the inside face (so visible upon site installation, and above expected elevation of top of watercourse). Label paint shall be of quality to resist climate/air/moisture attack throughout the expected service life (75 years) of the structure. Labels must be applied within two (2) days after each unit's curing completion.

Note that the supplier's internal 'unit number' shall not be used as part of unit identification, nor shall a 'unit number' be used within record documents.

The Department shall not approve the shipment of any unit from the Supplier's yard until its identification label has been applied and deemed acceptable by the Department.

CONCRETE REINFORCEMENT:

The item also includes full compensation for the supply and installation of each kilogram of concrete reinforcing steel required, as well as the supply and installation of any sacrificial frame-up bars as deemed required by the Contractor. Grade of reinforcing steel shall be 400W. Rebar placement drawings indicating plan and section views, concrete element dimensions, material grade, piece marks and associated bar size and spacing, lap locations and associated lengths, etc shall be submitted to the Department by the Contractor at no extra cost to the Contract. Also include directly

on the placement drawing (not on a separate drawing nor document) a detailed bar list indicating a piece mark for all bar types (including straight bars), quantity of bars for each mark, bend type, bend dimensions, total length for each mark, total mass for each mark, and grand total mass for the project. Contractor responsible to review content of placement drawings for correctness prior to submitting to the Department. Refer to attached Schedule 'F' and drawings.

The Contractor shall submit to the Department mill certificates indicating heat numbers and corresponding chemical composition (components and amounts) for all reinforcing steel used for this project.

The unit price for this item shall also include all costs associated with the on-site storage of material supported/elevated off the ground such that it does not get contaminated with soil, mud, earthen debris, etc, as well as to maintain the material's shop fabricated shape.

PRECAST UNIT INSTALLATION:

The lump sum price for the above listed item shall also be full compensation for off-loading, on-site storage (if required), installation, and alignment of all precast concrete units; supply and installation of joint sealant (flexible gasket) entire perimeter of all pipe-pipe joints; supply, mixing, and placement of grout in all lift inserts after installation of all pipe units; supply, mixing, and placement of grout in top of all top horizontal joints, and top of all bottom horizontal joints; cleaning surfaces to receive waterproofing primer; supply and installation of waterproofing primer; supply and installation of waterproofing material within all pipe-pipe joints; and supply and application of any heat source required for joint sealant, cleaning, primer, and waterproofing installation; protection of joint material and waterproofing as approved by the manufacturer; and all other incidentals required to completely install the precast units to the satisfaction of the Engineer, manufacturer, and technical representative. The Contractor shall adhere to the strict instructions or recommendations of the precast concrete structure Supplier's installation procedures and/or his on-site technical representative.

Contractor shall co-ordinate site delivery of precast units with the Supplier.

The Contractor is responsible to ensure enough available space on site shall be provided for concrete structure installation procedures. Any temporary layout areas, crane pads, fill, etc. shall be included in this item, as well as any land negotiations, permits, engineering (such as but not limited to geotechnical engineering advice regarding ability of existing soil to safely support loads imposed by crane pads, fill, crane outrigger loads, etc) required for the proper installation of the concrete structure.

The Contractor is responsible for all safety, crane capacities, number of cranes, location of cranes, any spreader beams, cable and related hardware capacities, outrigger locations and resulting soil bearing pressure, etc for the safe installation of all panels.

Bidder's shall make allowances for any over excavation, levelling, grading, etc. of material (if required)for the setup of cranes for this item. No measurement nor payment shall be considered for constructing levelling pads for cranes.

Lift hooks/clutches compatible with the precast units' cast-in lift inserts shall be provided by the Contractor for all situations (unloading at bridge site, installation, etc).

DAMAGE AND DEFECTS:

Any damage and/or defects such as but not limited to honeycombing, disintegration, spalls, cracking, stratification, segregation, cold joints, etc shall be repaired by the Supplier prior to shipping any units from the Supplier's yard, as well as for each concrete placement related to the inlet control element. Final determination of damage and/or defects and their extent shall be solely by the Department.

Prior to commencing any repairs, a repair method for each type of damage and/or defect shall be developed by the Supplier and submitted to the Department for review and acceptance. The Supplier shall also submit the material data sheet of proposed repair material(s).

Repair methods shall address perimeter cutout depth (minimum 6mm deep vertical cut, NO feather edges) and extent, surface preparation (minimum 5mm roughness amplitude), material removals, repair materials, surface moisture preparation, method of placement, and curing method complete with duration.

Cracks wider than 0.4mm shall be epoxy injection filled.

All costs associated with damage and/or defect repair shall be at no additional charge to the Contract, and will be charged back to the Supplier.

PAYMENT:

This item shall be lump sum cost for concrete structure designed, fabricated, supplied, off-loaded, and installed at the bridge site; as well as for precast concrete related to the inlet control element and cut-off wall.

Payment shall only be approved for amounts related to units with a correct identification label, delivered, unloaded, and installed FREE of damage, to the bridge site. Final determination of damage and its extent shall be solely by the Department.

Units shipped and/or installed to the bridge site with an identification label not matching casting records will not be paid for, with the transport truck directed to leave the bridge site with unit on board.

Any damage to any unit incurred during loading, handling, transport, unloading, and up to its final asstored position within the bridge site shall be repaired with all associated costs incurred by the Contractor. Repair criteria shall be as per this cost item's DAMAGE AND DEFECTS section.

SCHEDULE 'A'
SCHEDULE OF SPECIAL PROVISIONS
Revision 0, September 22, 2021

ST. TERESA BRIDGE - STRUCTURE REPLACEMENT

39. BID ITEM # 130510 - INSTALL HDPE STRUCTURE

NOTE TO BIDDERS: ONLY PRICE ONE (1) OF THE FOLLOWING BID ITEMS IN SCHEDULE C:

130503 - Install Concrete Pipe Culvert
130510 - Install HDPE Pipe Culvert

This cost item pertains to the all costs associated with the design, supply, and installation of: HDPE structure as indicated on Department drawings, and the structure's inlet control element and cut-off wall.

The HDPE material shall be steel reinforced polyethylene (if required to satisfy structural capacity). Note that the material for both the inlet control element and the cut-off wall must be compatible with the pipe structure's material.

Note that the Department has performed the hydraulic design for the site, and has determined the diameter required for the pipe structure. The structure's inside surface, as well as the inlet control element's exposed surface, shall have a Mannings Roughness Coefficient no more than 0.011.

The Department requires the structure to be placed in its field position utilizing maximum stock lengths complete with bell/spigot or welded joints over entire perimeter of structure. Each component length field location, and resulting cutoff to be indicated in structure design drawing.

The Contractor shall submit to the Department mill certificates indicating heat numbers and corresponding chemical composition (components and amounts) for all steel band reinforcement. Note that any Boron content shall not exceed 0.008 percent.

The lump sum price for the above listed item shall be full compensation for:

A) The engineered structure design as per AASHTO LRFD Bridge Design Section 12. The applied live load shall be CL-625 in accordance with the latest edition of CSA S6 Canadian Highway Bridge Design Code. The structure design shall also include the design of: granular bedding, inlet control element and cut-off wall, and the engineered granular backfill envelope. Both the granular bedding and granular backfill shall be with material identified, and with associated properties, indicated in the Department's document 'General Provisions and Contract Specifications for Highway Construction'.

B) The development of structure design drawings for all of the above components listed in (A) indicating all material criteria, material grades, dimensions, invert elevations (as provided by the Department), component-to-component joint connection detail (to be structurally integral and water-tight), bedding material limits (minimum 450mm thick), backfill envelope limits, backfill procedures, inlet control element connection details to pipe structure, inlet cut-off wall connection details to structure, each component length field location and resulting cutoff location, compaction criteria, calculated maximum soil bearing pressure below structure, any construction methodologies and/or restrictions, and other any design related information. Design drawings to be submitted to the Department for general review. All design drawings

shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI.

C) The development of structure lift design drawings indicating structure's total mass associated with component length installed, location of lift points relative to structure's length, lift equipment location and required lift capacity, any spreader beam details (size, location, length), cable and/or strap sizes, and connections. Lift design drawings to be submitted to the Department for general review. All lift design drawings shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI.

D) The development of structure storage design drawings indicating any blocking and/or supports. Storage design drawing to indicate requirements for both transport trailer condition and a ground surface condition. Storage design drawings to be submitted to the Department for general review. All storage design drawings shall bear a P Eng stamp signed and dated by a professional engineer registered with Engineers PEI.

E) Supply, transport to site, off-loading, on-site storage (if required), lift reinforcement and/or spreader beams, and installation and alignment of the entire structure to the satisfaction of the Engineer, manufacturer, and structure Supplier's technical representative. The Contractor shall adhere to the strict instructions or recommendations of the structure Supplier's installation and/or his on-site technical representative.

F) All costs associated with the structure Supplier providing a technical representative on site at all times during the placement and compaction of granular bedding, structure installation, pipe component-to-component joint connection work, and placement and compaction of the granular backfill envelope. Contractor to submit to the Department daily reports from technical representative indicating extent of work observed, any directives, and statement indicating work is in compliance with structures' design.

G) All costs associated with the structure Supplier providing a technical representative to develop, and submit to the Department, a written record addressing all of the above items constructed in accordance with the structures' design.

Note that the structural design of: the structure, inlet control element, cut-off wall, lift design system, storage design system, granular bedding, and the engineered granular backfill envelope shall be performed by a company registered to practice engineering in PEI. The Contractor shall submit to the Department a copy of the design company's Certificate of Authorization (COA) as granted by Engineers PEI.

The company performing the structural design shall also carry at least two million dollars ($2,000,000) coverage (per occurrence) of Professional Liability (Errors and Omissions) Insurance. The Supplier shall submit to the Department a copy of the design company's Certificate of Insurance verifying such coverage.

SCHEDULE 'A'
SCHEDULE OF SPECIAL PROVISIONS
Revision 0, September 22, 2021

ST. TERESA BRIDGE - STRUCTURE REPLACEMENT

40. BID ITEM # 130812 - SITEWORK DEMOLITION AND REMOVAL

No additional compensation will be provided for this item. Refer to attached Schedule 'F' and drawings for additional details. Refer also to section 104.14 of the Department's Specifications.

Note that demolition of existing structure components shall occur in a dry condition. Dry condition means no ponded water.

The lump sum bid price for the above listed item shall be full compensation for the demolition, removal from site, and the disposal off site of all existing structure components including but not limited to:

> timber posts complete with associated tie-back system and any cribbing, timber flooring, stacked timber sidewall abutment framing complete with associated tie-back system, timber stringers, timber decking, stacked timber curbing at each end, timber cross support, timber post, timber cap, any timber debris on channel bottom,
>
> all connections associated with all members to be demolished or salvaged,
>
> and all other removals as required to facilitate the new structure placement complete with new approach roadways.

All of these items shall be deemed the property of the Contractor and shall be disposed of in an environmentally acceptable manner in accordance with the PEI Waste Management Regulations at no additional charge to the Contract. All items to be removed from site and disposed of, independent of their protective coating or lack thereof.

This item includes the cost of disposal fees (and any required permits) to dispose material in an environmentally acceptable manner.

This item shall also include all costs (including all environmental controls) associated with dewatering any areas of the site in order to perform any construction activity and/or if any area becomes contaminated with earth silt during any phase of the project. The location of dewater outfalls shall be co-ordinated with the Department. The Contractor shall arrange, obtain permission, and pay for any outfalls which may have to be located on adjacent privately owned land. No additional compensation shall be provided for any additional work and/or equipment related to dewatering.

This item shall also include all costs associated with the development and submission by the Contractor to the Department a Dewatering Plan indicating items such as but not limited to the location of outfalls and any associated environmental controls. The Dewatering Plan shall be submitted at least two (2) weeks prior to commencing any activity which will require dewatering.

This item shall also include all costs associated with the supply, overall fabrication, installation, relocation as required, maintenance/repair, replacement of damaged areas, daily inspection, positive fastening or anchorage measures required to keep in location, adjustments, decommissioning, and removal from site a floating demolition boom(s) as required during demolition works. Loss of future

use (for any reason) of the demolition boom on separate projects shall not be compensated. No additional compensation shall be provided for this item.

The demolition boom(s) shall be installed for a maximum of eight (8) hours during a day to permit fish passage. The bid price shall allow for removal and reinstallation of boom(s) as required to satisfy this requirement.

The Department recommends that bidders visit the site during tender period to become familiar with and take into account the existing structure's system and all relevant surrounding conditions. Successful Contractor to have taken into account all costs associated with all existing conditions. Bidders are responsible for their own safety during the site visit, and are not to negatively affect the safety of the travelling public.

41. BID ITEM # 130831 - CONCRETE BARRIERS

The unit rate bid price shall be full compensation for loading concrete barriers at the Government Storage Facility on Brackley Point Road, transport to site, offloading on site, placement for road closure, handling/repositioning on site to accommodate any equipment setup or material delivery to the site, site loading, transport back to the Government Storage Facility on Brackley Point Road, and offloading at the Storage Yard.

Note that the Contractor shall confirm with the Department prior to loading at the Storage Yard the quantity of barriers required on site.

42. BID ITEM # 130876 - GENERAL MOBILIZATION AND DEMOBILIZATION

The lump sum bid price for the above listed item shall be full compensation for the mobilization and demobilization of all equipment, material, and labour to and from the site, including land negotiations for storage areas as well as any negotiations with utilities. This item also includes the provision of parking areas for equipment and vehicle parking including any land negotiations for such. This item also includes the supply, placement, and removal from site any earth materials and associated environmental controls required as part of mobilization and demobilization. No additional compensation shall be provided for this item.

Contractor shall provide a site trailer to be shared by the Contractor and Engineer. Trailer shall be equipped with electricity, lights, phone, table, chairs, one (1) screened window, and one (1) man door. It is the Contractor's responsibility to find a location near the structure to place the trailer. This item shall be included in the lump sum price bid for this item. The Contractor shall provide heat in the trailer at no additional cost to the Contract.

This item shall also include all costs associated with the supply, installation, and eventual removal of a safe walkway from one foundation side to the other. The walkway shall meet requirements of the PEI OH&S Act and Regulations. The walkway shall be for use by Contractor, sub-contractor, supplier, the Department, DFO, or any other individual authorized to be on site.

SCHEDULE 'A'
SCHEDULE OF SPECIAL PROVISIONS
Revision 0, September 22, 2021

ST. TERESA BRIDGE - STRUCTURE REPLACEMENT

43. BID ITEM # 130879 – GABION BASKETS

The unit price bid for the above listed item shall be full compensation for the provision of all labour, materials, and equipment required to supply all gabion baskets, construct and tie together baskets with wire, supply and completely fill baskets with imported gabion stone, and place and tie together top cover, all at the locations indicated on the drawings and/or as directed by the Department.

Note that the Contractor shall confirm with the Department prior to ordering baskets and stone the quantity of baskets required on site.

The unit bid price for this item shall also be full compensation for the provision of all labour, materials, and equipment required to level the earth surface at the underside elevation of the bottom gabion baskets such that the baskets as a whole will be stable throughout their in-service period. It is important that the earth is level to achieve this. The Contractor's tender price shall account for all costs associated with levelling and proper placement/positioning of baskets such that the basket system will be stable. The Contractor's tender price shall also take into account levelling and basket placement in water conditions.

44. BID ITEM # 131056 - BACKFILL CONCRETE STRUCTURE

This cost item is for backfill the new structure, even though its title indicates Backfill Concrete Structure.

The unit bid price for this item shall include the supply, placement, and compaction of Class 'A' granular backfill against the structures as indicated on the structure design drawings (as developed by the Contractor's structure designer). Contractor shall determine and verify quantity of material required prior to ordering and site delivery. Within 300mm of the structure the material shall be compacted with a hand tamper. There will be no additional compensation entertained for meeting the required density on the Class 'A' backfill.

45. BID ITEM # 135101 - PROJECT LAYOUT

The lump sum bid price for the above listed item shall be full compensation for all surveying and layout of the project site, including excavation cross section survey and volume calculation, elevations, new watercourse alignment layout, new watercourse bottom elevations along its length, pipe structure structure layout, pipe structure invert elevations at inlet and outlet, toe of slope layout, edge of pavement layout, dimensions, and all other measurements and layouts required to complete the work.

This item shall also include all labour, materials, and equipment associated with the Contractor locating and setting up temporary control points in the field.

The Department will provide layout information upon request of the project layout team. Any discrepancies or irregularities shall be promptly pointed out to the Engineer for resolution prior to proceeding with the work. Copies of all digital files required for on site quantity calculations shall be

provided to the Department for verification. The provision of Project Record Drawings shall be considered incidental to this item.

The Contractor shall perform an as-built survey and submit to the Department, at no additional cost to the Contract, digital file (AutoCAD Civil 3D file, Dept has version 2019) as-built drawings developed to scale (and with all line work developed connecting associated points) indicating plan locations (Northing and Easting coordinates using the same grid system as used to locate the new bridge foundation) and corresponding elevations (relative to project benchmarks) of all finished features at maximum 20 metre intervals aligning with project stationing within the project limits, and including any new work constructed under this Contract but located outside the project limits. Northing, Easting, and Elevation data shall be presented via the Contractor submitting to the Department a coordinate file (digital ASCE).

Road features to be identified and as-built surveyed include primary construction types and visual changes and/or extents such as but not limited to: utility poles, toe of slope, toe and crest of rip rap for each Rsize, crest (rounding) of shoulder, guardrail, edge of pavement, traffic lane lines, and road centerline.

New bridge features to be identified and as-built surveyed include primary construction types and visual changes and/or extents such as but not limited to: all pipe structures' top crown at inlet and outlet, all pipe structures' inlet and outlet inverts.

All surveyed elements to be clearly identified on the drawing file via use of piece marks, tabulated data, CAD layers complete with visually identifiable colors and line types.

46. BID ITEM # 136261 – GABION BASKETS: REMOVE

The lump sum price for this item shall be full compensation for the provision of all labour, materials, and equipment required to remove and handle existing gabion baskets as identified by the Department, empty out all rock and stockpile rock on site, place all rock from the stockpile to areas throughout this site as part of this project, and dispose of off site the associated emptied baskets.

47. SIGNAGE

The Contractor shall be responsible for the supply, fabrication, secure placement on site, and any periodic maintenance / repositioning / keeping upright / covering over when warranted of traffic signage required for communicating to the travelling pubic the presence of traffic control persons (to be used during the turning of trucks and equipment on the open portion of the road during entry and exit to and from the site). All signage shall be in accordance with the Prince Edward Island Temporary Workplace Traffic Control Manual (latest edition).

Submit type of signage and associated locations (plan dimensions relative to each other, traffic control personnel, and bridge abutments) to the Department for review prior to sign fabrication. Refer to Section 908 of the General Provisions and Contract Specifications for further details. This

item shall have no cost line item and shall be considered incidental to the project. No additional costs shall be entertained for this item.

Note the size, and color (fluorescent orange), of the signs as indicated in the Prince Edward Island Temporary Workplace Traffic Control Manual (latest edition). The fluorescent orange color requirement has been phased in, and will now be implemented by the Department.

The Department will be supplying and maintaining signage related to the channelization of traffic. All energy powered control devices (and associated equipment) related to the channelization of traffic shall be supplied (including energy supply, hookup, and decommissioning) and maintained by the Department.

48. MEETINGS

The Contractor shall make himself available for meetings with local utilities, local authorities, and the Department representatives for an initial start-up meeting prior to construction to discuss environmental controls, the sequence of construction relative to environmental controls, site safety, schedule, temporary utility locations, traffic management plans, and any other pertinent issues related to the project. This shall be considered incidental to the project. No additional costs shall be entertained for this item.

The Contractor shall also make available his lead construction manager and site superintendent for periodic site meetings to be held throughout the construction time frame. Note that the purpose of the meetings is to discuss relevant issues with the Department, DFO, etc, and not for the Contractor to discuss internal issues nor issues with his sub-contractors, suppliers, etc.. Frequency of meetings will be maximum weekly during initial project stages, and biweekly throughout the remainder of project. This shall be considered incidental to the project. No additional costs shall be entertained for this item.

SCHEDULE B

IDENTIFICATION OF PRINCIPALS

Name of Contractor:

Mailing Address:

Telephone:

Fax:

Principal's Name:

Title:

Mailing Address:

If Contractor is a corporation, indicate in which province of Canada is the corporation registered:

Department of Transportation and Infrastructure
Province of Prince Edward Island

Schedule C
schedule of item for tender

Item Description and Price			Estimated Quantity	Contractor Total Price
CLEARING				
Section: 201 Item: 20101				
		PER ha		
	$	PER ha	.10 $	
	100			
GRUBBING				
Section: 202 Item: 20201				
		PER ha		
	$	PER ha	.10 $	
	100			
EXCAVATION: MUCK				
Section: 203 Item: 20302				
		PER M3		
	$	PER M3	50.00 $	
	100			
EXCAV:EARTH SURPLUS/SUITABLE				
Section: 203 Item: 20306				
		PER M3		
	$	PER M3	200.00 $	
	100			
EXCAVATION: EARTH WASTE				
Section: 203 Item: 20307				
		PER M3		
	$	PER M3	1,300.00 $	
	100			
EXCAVATION: PAVEMENT				
Section: 203 Item: 20316				
		PER Square Metr		
	$	PER M2	130.00 $	
	100			

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Item Description and Price				Estimated Quantity	Contractor Total Price
BORROW: COMMON					
Section: 206	Item: 20601				
			PER Tonnes		
	$		PER Tonnes	1,800.00 $	
		100			
BORROW: SELECT					
Section: 206	Item: 20602				
			PER Tonnes		
	$		PER Tonnes	300.00 $	
		100			
GRANULAR BASE: A					
Section: 207	Item: 20701				
			PER Tonnes		
	$		PER Tonnes	400.00 $	
		100			
CLASS D GRAVEL					
Section: 207	Item: 20709				
			PER Tonnes		
	$		PER Tonnes	50.00 $	
		100			
FINE GRADING					
Section: 208	Item: 20801				
			PER Square Metr		
	$		PER M2	1,000.00 $	
		100			
TOPSOIL: LANDSCAPING					
Section: 212	Item: 21201				
			PER Tonnes		
	$		PER Tonnes	100.00 $	
		100			

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Item Description and Price				Estimated Quantity	Contractor Total Price
RANDOM RIP-RAP: R5					
Section: 213	Item: 21301				
			PER Tonnes		
	$		PER Tonnes	50.00 $	
		100			
RANDOM RIP-RAP: R50					
Section: 213	Item: 21303				
			PER Tonnes		
	$		PER Tonnes	50.00 $	
		100			
RANDOM RIP-RAP: R100					
Section: 213	Item: 21304				
			PER Tonnes		
	$		PER Tonnes	20.00 $	
		100			
FILTER FABRIC					
Section: 218	Item: 21801				
			PER Square Metr		
	$		PER M2	250.00 $	
		100			
ASPHALT CEMENT					
Section: 501	Item: 50101				
			PER Tonnes		
	$		PER Tonnes	8.40 $	
		100			
TACK COAT					
Section: 601	Item: 60101				
			PER Square Metr		
	$		PER M2	800.00 $	
		100			

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Item Description and Price			Estimated Quantity	Contractor Total Price
ASPHALT BASE: A				
Section: 603 Item: 60301				
		PER Tonnes		
	$	PER Tonnes	80.00 $	
	100			
ASPHALT SEAL: B				
Section: 603 Item: 60350				
		PER Tonnes		
	$	PER Tonnes	60.00 $	
	100			
RAP: LOAD, TRANSPORT & PLACE				
Section: 603 Item: 60370				
		PER Square Metr		
	$	PER M2	500.00 $	
	100			
COLD PLANE & ST'PILE				
Section: 704 Item: 70405				
		PER Square Metr		
	$	PER M2	1,000.00 $	
	100			
COLD PLANE CONST. JOINT				
Section: 705 Item: 70501				
		PER Square Metr		
	$	PER M2	80.00 $	
	100			
HYDROSEEDING				
Section: 803 Item: 80302				
		PER Square Metr		
	$	PER M2	500.00 $	
	100			

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Department of Transportation and Infrastructure
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Schedule C
schedule of item for tender

Item Description and Price			Estimated Quantity	Contractor Total Price
ENVIROMENTAL CONTROLS				
Section: 820 Item: 82100				
		PER L.S.		
	$	PER L.S.	1.00 $	
	100			
SIGNALLERS				
Section: 901 Item: 90101				
		PER hrs		
Twenty-One Dollars and 78 Cents	$ 21.78	PER hrs	460.00 $	10,018.80
	100			
FLEXBEAM GUIDERAIL:REMOVA				
Section: 902 Item: 90201				
		PER Metres		
	$	PER M	60.00 $	
	100			
FLEXBEAM GUIDERAIL: ERECT				
Section: 903 Item: 90301				
		PER Metres		
	$	PER M	60.00 $	
	100			
TRAFFIC CONTROL PLAN				
Section: 908 Item: 90802				
		PER hrs		
Thirty Dollars and 00 Cents	$ 30.00	PER hrs	40.00 $	1,200.00
	100			
TRAFFIC CONTROL DEVICES				
Section: 908 Item: 90803				
		PER L.S.		
	$	PER L.S.	1.00 $	
	100			

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Schedule C
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Item Description and Price				Estimated Quantity	Contractor Total Price
INSTALL CONCRETE PIPE CULVERT					
Section: 1305 Item: 130503					
			PER L.S.		
	$	100	PER L.S.	1.00 $	
INSTALL HDPE PIPE CULVERT					
Section: 1305 Item: 130509					
			PER L.S.		
	$	100	PER L.S.	1.00 $	
SITEWORK DEMOLITION & REM					
Section: 1308 Item: 130812					
			PER L.S.		
	$	100	PER L.S.	1.00 $	
CONCRETE BARRIERS					
Section: 1308 Item: 130831					
			PER unit		
	$	100	PER unit	40.00 $	
GENERAL MOBILIZATION\DEMOBILIZATION					
Section: 1308 Item: 130876					
			PER L.S.		
	$	100	PER L.S.	1.00 $	
GABION BASKETS					
Section: 1308 Item: 130879					
			PER M3		
	$	100	PER M3	18.00 $	

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Schedule C
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Item Description and Price			Estimated Quantity	Contractor Total Price
BACKFILLING CONCRETE STRUCTURE/CLAS				
Section: 1310 Item: 131056				
		PER Tonnes		
	$	PER Tonnes	400.00 $	
	100			
PROJECT LAYOUT				
Section: 1351 Item: 135101				
		PER L.S.		
	$	PER L.S.	1.00 $	
	100			
GABION BASKETS: REMOVE				
Section: 1362 Item: 136261				
		PER L.S.		
	$	PER L.S.	1.00 $	
	100			

Total Carried Forward From Previous Page $

Total Carried Forward $

HST $

Grand Total $

SCHEDULE D

SCHEDULE OF EQUIPMENT TO BE USED ON THE WORK

SCHEDULE E

SCHEDULE OF SUB-CONTRACTORS

SCHEDULE F

APPENDED ITEMS

ADDENDUMS

GENERAL PROVISIONS and CONTRACT SPECIFICATIONS for HIGHWAY CONSTRUCTION

Contractor's Hazard Assessment Form

Pre-Construction Contractor Safety Checklist Form

Contractor's Safety Statement Form

Daily Traffic Control Checklist

Construction Association of PEI – 'Pandemic Planning for the Construction Industry – a Guide'

Stantec Consulting Geotechnical Investigation Report

Dept Design Drawings S1 to S8 inclusive

Environmental Control Drawing E1

CONTRACTOR'S HAZARD ASSESSMENT FORM

Hazard Assessments shall be regularly completed by the Project Manager or Designate. **All** Employees, Subcontractors, and Visitors ***Shall*** be advised of all hazards noted and shall also be advised of any hazards that develop during the project.

Job Location: _____ **Job Contractor:** _____

Project Manager: _____ **Job Foreman:** _____

Administration Checklist	**Circle**	**Correction Date if "NO"**	**Generic Hazard Identification**	**Circle**	**Correction Date if "NO"**
OH&S Act on Site:	Y N		Hydro/Phone Lines:	Y N N/A	
Construction & Safety Regs on Site	Y N		Underground Cables/Pipe:	Y N N/A	
Other Application Job Regs on Site	Y N		**Overhead Hazards:**	**Y N N/A**	
Employees Trained as Per Regs:	Y N		**Water Hazards:**	**Y N N/A**	
Employees Orientation Completed:	Y N		**Applicable Signage in Place:**	**Y N N/A**	

Identified Hazard	**Priority**	**Required Corrective Action**	**Completed By**	**Date & Initial**

Priority System: ***A*** **- Correct Immediately** ***B*** **- Correct within 24 hours** ***C*** **- Correct within 3 days**

Other Hazards/ Considerations:

Comments:

Completed By:(Print) _____ Signature: _____ Date: _____

Corrective Action:

This Hazard Assessment has been reviewed by the Contractor's Safety Representative. It has been verified by the Contractors Project Manager and the Job Foreman that corrective action has been taken according to priority.

Completed By: (Print) _____ Signature: _____ Date: _____

CONTRACTOR SAFETY CHECKLIST

Use this text as a guideline for completing the attached checklist. This checklist is a general, *pre-construction* review of the contractor safety program, as well as an information session to identify what the P.E.I. Department of Transportation and Infrastructure Renewal (TIR) requires of our contractors. Where the item requires a submission, ensure that it is received. If the item does not apply, enter N/A for not applicable.

The following information will assist you in establishing what will be reviewed in each section.

1. ***Safety Policy:*** Each employer is required by law to have a safety policy and program. TIR will ask for and may require a copy of that policy and program.

2. ***Safety Representative:*** Each contractor is required to advise TIR who their safety representative is. That representative has duties as described in the Occupational Health and Safety Act.

3. ***Emergency Procedure:*** Each contractor must have a site specific layout and emergency plan complete with emergency phone numbers.

4. ***Employee Orientation:*** Each and every person working for a contractor, including sub-contractors, will be given an orientation to familiarize them with the site safety program. Unless otherwise specified, each sub-contractor is responsible for the orientation of their workers.

5. ***Safe Work Plan:*** Most contractors are involved in tasks that subject workers to hazards. In order to ensure that these workers are secured from hazard, the contractor will supply TIR with a written safe work plan which affords protection against the hazards. This plan must be signed by a company representative and communicated to the workers involved in the task.

6. ***Personal Protective Equipment Review:*** Advise that all workers require CSA Class "B" hard-hat, CSA Grade 1,"Green patch", (eight inch) footwear, and eye, ear, and respiratory protection as required (boots and hat at all times).

7. ***Fall Protection:*** Fall restraint or fall arrest protection required where a fall of more than 2.4 meters is possible. **NO EXCEPTIONS.**

8. ***Housekeeping:*** Advise of daily, or as needed, clean-up requirements.

9. ***Tool Box Talks:*** Each contractor is required to conduct weekly safety meetings with their forces and advise TIR they have been done.

10. ***Material Handling/Storage:*** Advise contractor about storage areas and handling of material so as not to endanger their worker or another worker. Stacked material to be banded, chained, blocked, or otherwise secured.

11. ***Landing Platforms:*** Advise contractor about movement of material on or off platforms. All material to be secured. Platform gates or chains to be kept closed at all times workers are on platform. If not possible, worker to be tied off with fall restraint system independent of platform.

12. ***WHMIS Training:*** Receive verification that all contractor workers are trained and that the contractor submits the MSDS for chemicals on site.

13. ***GFCI:*** Advise contractor that all tools are required to have ground fault circuit interrupters (where electricity is supplied by contractor).

14. ***Accident Investigations:*** Any injury to any of their workers must be investigated and reported to TIR.

15. ***Verbal, Written, Gone:*** Explain Safety Tolerance Program.

16. ***Joint/Worker Safety Committee:*** Sites of over 20 workers must establish a safety committee; over 50, an additional worker committee. Workers required to attend committee meetings will do so and not be prevented by employers.

17. ***Fire Protection:*** All trades involved in performing hot work of any kind are required to provide fire protection at the work location.

18. ***Guardrails:*** Advise contractors that where temporary removal of guardrails is necessary, the area around them must be cordoned off with a barrier. Guardrails must be replaced as soon as possible.

19. ***First Aider:*** Each contractor is required to have a first aid kit and trained first aider. Employer must name their first aider.

20. ***Visitors:*** Advise contractor that any visitors to site must be suitably protected from hazard. They must wear hard hat, safety vest, and proper safety footwear while on site.

21. ***Task Lighting:*** Review responsibilities of task specific lighting (who provides it).

22. ***Swamper/Riggers Competency:*** Where cranes are used, the contractor must use a swamper/rigger. They shall provide TIR with a written statement identifying, by name(s), their rigger and that the named person is a competent worker as described in the construction regulations.

23. ***Scaffolds:*** Review scaffold building requirement:
    - ☞ Use all braces required by design.
    - ☞ Access ladder for platform over 1.5 meters.
    - ☞ Full width platform if height over ten feet. (PEI Regulations require double planks)
    - ☞ Full guardrails and toeboards.
    - ☞ Tied in three times base dimension or use of outriggers.
    - ☞ Engineered over 50 feet in height (standard frame type).

24. ***Elevating Work Platforms:***
    - ☞ All boom and scissors lifts required to be CSA approved and have approval on machine.
    - ☞ Operators manual required on machine at all times.
    - ☞ Maintenance record on machine at all times.
    - ☞ Operator must receive training in operation of equipment.
    - ☞ Fall protection must be used at all times on a boom lift.
    - ☞ Fall protection required to be used on scissors lift when unit is being moved.

25. ***Protruding Rebar:*** Installers of reinforcing steel must protect the protruding hazard or make arrangements to have it protected. Removal of protective coverings for task purposes only is allowed, however, protective covering must be replaced as soon as possible.

26. ***WCB Clearance Certificates:*** Advise contractor that TIR will not release any funds for payment until Workers Compensation Board Clearance Certificate has been received by TIR.

PRE-CONSTRUCTION CONTRACTOR SAFETY CHECKLIST

PROJECT: _____ DATE: _____ CONTRACTOR: _____
WORK BEING PERFORMED: _____

Print Name _____
Project Manager/Inspector

(Sign) _____

Print Name _____
Contractor Representative

(Sign) _____

✓ Means Yes ☒ Means No N/A Not Applicable

1. Safety Policy Submitted	☐	13. GFCI Requirements	☐
2. Safety Representative	☐	14. Accident/Incident Investigations Notification	☐
3. Emergency Procedure Review	☐	15. Verbal, Written, Gone	☐
4. Employee Orientation	☐	16. Joint/Worker Safety Committee	☐
5. Written Safe Work Plan Submitted	☐	17. Fire Protection	☐
6. Personal Protective Equipment Review • Hard Hats & Footwear • Safety Glasses • Hearing • Dust & Fumes	☐	18. Guardrails 19. First Aider on Staff - Name Supplied 20. Visitors & Safety Equip.	☐ ☐ ☐
7. Fall Protection	☐	21. Task Lighting	☐
8. Housekeeping	☐	22. Swampers/Riggers Competency (in writing)	☐
9. Tool Box Safety Talks (Weekly)	☐	23. Scaffolds	☐
10. Material Handling/Storage	☐	24. Elevating Work Platforms	☐
11. Landing Platforms	☐	25. Protruding Rebar Protection	☐
12. WHMIS Training Verification - MSDS Received	☐	26. WCB Clearance Certificate	☐

DAILY TRAFFIC CONTROL CHECKLIST

This form shall be completed twice by the Project's Traffic Control Manager for each work day; prior to mobilizing equipment or work personnel on site, and after demobilizing equipment or work personnel on site. After the Traffic Control Manager completes this form at the start and end of each work day, this form shall then be signed by the Department's on-site data collector, prior to mobilizing and after demobilizing.

Project: **Date:**
Contractor: **Guide:**

Traffic Control Manager (Print):
Data Collector (Print):

Traffic Control Personnel

Name	Certificate #	Name	Certificate #

Prior to Mobilizing

All Signs Present and Securely in Position	yes	no
All Signs Facing Traffic	yes	no
Two Flags Present and Secure on Signs Requiring Flags	yes	no
Signs Covered During Previous Night are Uncovered and Exposed to View	yes	no
Traffic Control Manager (Signature):		
Data Collector (Signature):		

After Demobilizing:

Applicable Signs Removed	yes	no
Applicable Sign Covered	yes	no
Two Flags Removed from Signs Requiring Flags	yes	no
Traffic Control Manager (Signature):		
Data Collector (Signature):		

All checklist forms for each week to be submitted to the Department

CONTRACTOR'S SAFETY STATEMENT

This form shall be completed in full by the Contractor, and submitted to the Department for review, prior to the Contractor mobilizing on site. This document shall be applicable for all equipment and workers whether under the direct operation/direction of the Contractor, or a Subcontractor.

PROJECT:

CONTRACTOR:

DATE:

SAFETY STATEMENT:

1. All equipment to be used for this project has been and will be safety maintained and is safe for use.
2. All workers have and will be safety trained to perform work activities for this project.
3. All personal protective equipment used for this project meets latest CSA Standards.

_____

Signature

_____

Print

Construction Association of Prince Edward Island

PANDEMIC PLANNING FOR THE CONSTRUCTION INDUSTRY – A GUIDE.

March 25th, 2020

INTRODUCTION.

At the beginning of last week, it was obvious to many of us that we were moving into unknown territory and, from a safety and health perspective, we as an industry were going to have to develop new protocols and best practices for our new reality.

Many organizations in our industry do not have internal resources to create such content while other larger organizations do. In a display of community leadership many of these larger organizations have been willing to share their various approaches over the last week as a way of helping to get the best information into as many sets of hands as possible to ensure that our industry has a strong response.

As we as an industry approach the current situation and attempt to maintain business continuity, we have gathered some of the best practices.

Please note that the following is provided merely as a guide and as stated above, it is based on collective policies and practices that are being followed by a number of General and Trade Contractors in Prince Edward Island.

We hope that by sharing this information our industry will be able to respond consistently and quickly to the Pandemic. These practices can be used, built on or amended as you see fit. We intend to keep updating this document as more information becomes available.

Our experts in safety and site management are the best in the world and with the right tools will be able meet these new challenges and the ones that lie ahead.

Please direct all questions or comments on this document to:

Sam Sanderson
General Manager
Construction Association of PEI

902-368-3303
sam@capei.ca

How COVID-19 is transmitted: overall guidance for protecting yourself and others

On all construction sites, either as a sub or prime contractor, you must do everything possible to follow the advice of Health Officials.

The following is a general overview of how COVID-19 is transmitted. It is provided merely for background and to inform strategies aimed at implementing the rules set out in the balance of this document. Full details on these issues should be obtained from the Centers for Disease Control and Prevention, Health Canada and the World Health Organization, or a medical professional.

- The virus is thought to spread through respiratory droplets. Respiratory droplets may be produced through a cough, a sneeze, normal breath or conversation.
- These respiratory droplets may cause viral transmission from person to person when individuals are near one another. Recent guidelines from the U.S. Department of Labor provide further guidance and recommend that individuals should avoid working less than six feet from others for prolonged periods.
- The respiratory droplets may also land on clothing or other objects. It may be possible for an individual to contract COVID-19 by first touching a surface or object that has the virus on it and then touching their own mouth, nose or possibly their eyes.

These general principles should be considered when applying the practices outlined in this document.

GENERAL PRINCIPLES.
Your Health and Protecting Others.

Active participation is critical as this is a work in progress which is new territory for us all. It will be a team effort across industry so do please share any ideas or suggestions that can make it safer and contact your supervisor or HSE Manager promptly. If you have questions or concerns, please direct them to your supervisor. The goal is to provide a safe workplace, if any person has a safety concern then sharing these is extremely important.

Adherence to safety procedures is necessary as safety and health is our principle concern. Contractors and workers who do not comply with these procedures may be asked to leave the site and not permitted to return until the current situation is less acute. At the end of the day risky behavior on the part of one puts all of us in jeopardy.

Prevention procedures should be based on health monitoring, social distancing, hand hygiene, cleaning and disinfecting as well as contractor and project specific procedures to prevent the transmission of COIVD-19 to workers on a project

Social Distancing

Social distancing is a technique to prevent the spread of COVID-19 by limiting close contact with others. The Public Health Authority recommends keeping a distance of 2 meters (6 ft.) from each other.

All workers shall observe social distancing. Social distancing measures include:

- limiting groups of workers coming together in orientation, lunch and meeting rooms, tool cribs, change rooms, smoking areas, etc.
- preventing workers from congregating at the entrance to the: project, hoist, stair wells, scaffolding, washroom facilities, etc.
- restricting access to occupied work areas like trailer offices, etc.
- controlling traffic patterns – where practicable designate only up and only down stairwells or in / out gates, this avoids the potential for workers to pass each other within the social distancing space.

Contractors are required to:

- communicate and reinforce **self-distancing** practices with their workers
- conduct regular inspections of their worker areas to verify that workers are practicing social distancing, to the best of their ability
- notify us of any concerns they have for social distancing practices or work procedures

Informational signage, warning workers of the importance of **self-distancing** will be installed at locations on the project were there is a potential for workers to congregate. We will conduct regular inspections of the project to verify that workers are observing social distancing.

Hand Washing and Hand Sanitization

Hand washing minimizes the risk of infection. Proper hand washing helps prevent the transfer of infectious material from the hands to other parts of the body—particularly the eyes, nose, and mouth—or to other surfaces that are touched. Hands that are visibly soiled or dirty should be washed with soap and water - hand sanitizer is less effective on soiled or dirty hands.

Workers are required to wash or sanitize their hands:

- at the start of their shift and before they start work
- before eating, drinking or smoking
- after using the toilet facilities
- after handling any tools or materials that may be contaminated
- at the end of the shift before they leave work

We will provide or make available hand washing and hand sanitization facilities to meet the needs of the volume of workers at the project.

Informational signage, describing proper hand washing and hand sanitization techniques will be posted at hand washing and hand sanitization facilities.

Cough / Sneeze Etiquette

Workers are expected to follow cough/sneeze etiquette, which is a combination of measures that minimizes the transmission of diseases via droplet or airborne routes. Cough/sneeze etiquette includes the following:

- Cover your mouth and nose with a sleeve or tissue when coughing or sneezing.
- Use tissues to contain secretions and dispose of them promptly in a waste container.
- Turn your head away from others when coughing or sneezing.
- Wash hands regularly.

Self-Awareness

If you are exhibiting flu-like symptoms such as fever, coughing or congestion: **Do not come to work**;

- Contact your supervisor and your Human Resources department to let them know that you are exhibiting the symptoms; and
- Consult with a healthcare professional on next steps before returning to work.

The response to the COVID-19 virus continues to change on a regular basis. All parties are required to meet current requirements and be adaptable to new initiatives when required.

Three Basic Rights of Every Worker

1. To know about existing and potential hazards.

2. To participate in making the workplace safe and healthy by being a Health & Safety Representative, a member of the JOSH Committee, or consulting with the employer, supervisor, JOSH Committee, or representative.

3. To refuse unsafe work.

   If a worker believes that a task or situation is dangerous, they must report the concern to a supervisor immediately. The worker must also go to a safe place at the workplace. The employer may have the worker do other work.

   The supervisor must investigate promptly, with the worker present.
   - If the supervisor finds the work unsafe, the employer must fix the problem before work can continue.
   - If the supervisor believes the task is safe, and the worker still feels unsafe, the worker must report the concern to the JOSH Committee or Health & Safety Representative.
   - The supervisor can ask another worker to do the job but must inform the other person about the work refusal reasons.
   - Important Note: A concerned worker is not to leave the sight. All workers should bring their concerns to their supervisor, to give the supervisor an opportunity to assign them to a different task if they feel unsafe. A work refusal concern can't be investigated if these first few vital steps are not followed.

The JOSH Committee or Health & Safety Representative must investigate the situation.

- If they agree with the refusal, JOSH Committee or Health & Safety Representative will recommend that the employer fix the problem.

- If they disagree, the JOSH Committee or Health & Safety Representative will advise the worker to return to work.

If the JOSH Committee or Health & Safety Representative is unsure or does not agree, they should consult standards, review procedures, or call an expert to help with the decision.

If the worker still feels unsafe and the problem is not resolved to their satisfaction, they can call the WCB Occupational Health and Safety Division at 902-368-5680 or toll-free in Atlantic Canada at 1-800-237-5049. Outside of normal working hours, they can call the 24-hour emergency number at 902-628-7513.

If the worker follows the process, an OHS Officer will investigate the concern. The OHS Officer will issue an order to the employer to correct the situation or advise the worker to return to work.

The OHS Act protects a worker's right to refuse unsafe work. The protection lasts up to the point where the OHS Officer advises the worker to return to work.

The OHS Act further protects a worker from discriminatory action by the employer. When a worker complies with and/or seeks enforcement of the OHS Act and its Regulations, they cannot be discriminated against, intimidated or coerced. If the worker does feel discriminated against, intimidated or coerced, they may file a complaint with the WCB by stating the nature of the complaint in writing to the WCB Director of OHS. The complaint will be sent to arbitration where there is a collective agreement or where the WCB Director of OHS finds it appropriate.

PANDEMIC PLANNING FOR WORKSITES:

Some of the following measures will be subject to site size and complexity.

COVID Safety Coordinator

At each appropriate worksite it is recommended to appoint one or more employees responsible to be the COVID Safety Coordinator (CSC). Should the site size be such that this is not feasible then the CSC function will be conducted by the site superintendent.

The CSC will:

- Review and assess Contractor COVID Prevention Procedures.
- Conduct regular inspections of the worksite to monitor adherence to COVID Prevention Procedures and record inspection findings.
- Review and store Health Questionnaires in accordance with privacy considerations.
- Document Contractor attendance issues.
- Monitor cleaning to verify that approved products and procedures are being followed.

- Inspect wash stations and hand sanitization stations to verify that they are adequately stocked and posters explaining hand washing and hand sanitization are posted.
- Post and inspect other signage to verify that it is located in correct location and in good order.
- Verify that First Aid Attendants have the necessary safety equipment and are using it correctly.
- Investigating any reports of workers that are not complying with procedures or concerns for workers health. Coordinate with our Superintendent and Contractors Supervisor / Contractors CSC.
- Refer any issues or concerns to Project Superintendent and HSE Manager.
- Immediately report and investigate presumed and confirmed cases of COVID – 19 with the assistance of Superintendent and HSE Manger.
- Review and instruct project staff in this procedure and other COVID-19 documentation.
- Monitor this procedure and other documents for updates and assist Project Supervision in disseminating that information to Contractors and workers.

Trade Contractors are required to appoint someone at each site responsible for monitoring their workers for compliance with their COVID prevention procedures and site COVID Prevention Procedures. This may be a foreman or senior site management. The Contractors CSC must spend a significant amount of their time monitoring workers by greeting and organizing them when they arrive to work, inspecting their work areas, monitoring their health, informing their workers of any changes to procedures and liaising with us and their companies management responsible for COVID prevention.

Contractors will provide the name and cell phone of their CSC to the on-site CSC.

Contractor COVID – 19 Prevention Procedures

Contractors are required to forward copies of their procedures to prevent the transmission of COVID – 19. Contractors must identify which tasks may be impacted by social distancing restrictions and implement mitigation measures. for example:

- site orientations
- training
- tasks that involve two or more workers to work in close proximity. i.e. Carrying pipe or drywall
- restricted work locations where there is insufficient space to maintain social distancing i.e. cab of a vehicle or small room

Contractors must identify tasks where there is a potential for transmission through shared use of PPE, tools and equipment and implement mitigation measures. For example:

- PPE – face shields at cutting stations, fall protection ropes and lanyards, etc.
- tools – hand saws, chop saws, grinders, vacuums, etc.
- equipment – aerial work platforms, forklifts, power trowels, etc.

Where Contractors are responsible for cleaning and disinfecting, they are required to provide two copies of cleaning product information and cleaning procedures for review to verify that they can prevent the transmission of COVID – 19.

Contractors are responsible for reviewing the procedures and implementing practices that prevent the transmission of COVID -19 for the subtrades working for them.

Contractors may be required to appoint a CSC at each work location.

If Contractors have not provided COVID – 19 Prevention Procedures, they may not be allowed to work on this project.

Health Verification of Workers and Visitors

The health and well-being of workers and visitors is paramount. To protect workers and visitors and provide a safe and healthy workplace there is an increased responsibility on Contractor supervisors and supervisors to be vigilant and that includes monitoring for symptoms of COVID19.

Workers and visitors who are exhibiting symptoms of COVID 19 or are otherwise recommended to be in self-isolation or self-quarantine in accordance with recommendations of the Public Health Authority are not permitted on projects.

1. Any workers or visitors intending to access the site must complete a Health Questionnaire (***see Appendix A***). The purpose of the questionnaire is to verify that workers are free, to the best of their knowledge, of COVID-19 symptoms and related restrictions in accordance with Public Health Authority recommendations.
2. Contractors supervisors must provide each day an attendance list of workers by name and phone contact – electronically. In the event that there is a COVID issue later this information will be especially helpful in identifying potential exposures. Attendance lists to be stored in accordance with privacy considerations.

3. Contractor supervisors are required to verify**, at start of shift**, that their workers are healthy, fit for work and to the best of their knowledge, free of any symptoms or restrictions associated with COVID-19 in accordance with the Health Questionnaire and recommendations of the Public Health Authority.

4. Contractors must provide an update on their workers' health to CSC **at start of shift**. If there are any significant changes in attendance or health concerns notify HSE Manager and document in Contractor Tracker.

5. Contractor supervisors are required to verify**, at end of shift**, that their workers healthy, fit for work and to the best of their knowledge, free of any symptoms or restrictions associated with COVID-19 in accordance with the Health Questionnaire and recommendations of the Public Health Authority.

6. Contractors must provide an update on their workers' health to the CSC **at end of shift.** If there are any significant changes in attendance or health concerns notify HSE Manager and document in Contractor Tracker.

Site Access:

- Post signs at all site entrances that say, "Site Sign in/out by texting Supervisor at _____".
- Site supervisor to update sign-in log regularly throughout the day to know who is at site.
- All site orientations to be done verbally without signature outside the job shack.
- No transfer of papers. Site supervisor to sign on their behalf.

Site Meetings:

- Job toolbox meetings to be held outside, with appropriate social distancing or have people call in. No signatures or transfer of documents. Site Supervisor signs on their behalf.
- Hazard assessment's and other paper submission documents boxes to be moved outside with two boxes – Documents can be retrieved 24 hours later.
- When arranging necessary inspections from consultants or authorities having jurisdiction, indicate to them they will not be allowed to visit our site if they are showing any signs of being sick.
- In person meetings must have no more than 10 people in attendance
- Consider conference / skype calls to reduce the number of attendees
- All non-essential events are canceled or postponed (e.g. site barbeques);
- Large job shacks limited to maximum 5 people and small job shacks limited to maximum 3 people. Social distancing required.
- Site constraints are based on site size using appropriate social distancing. Suggested guidelines are no more than 3 or 4 people working in 1000 sq. ft. of space, or 10 people working in 10,000 sq. ft. Examples and exceptions:
    - Tradespeople working in teams to do work (Carpenter and Apprentice) must know each other well enough to be sure of the proximity risk of working together.
    - For larger groups working together (concrete placement crews) who cannot manage social distancing to do their work must have a conversation with the Safety Advisor and the Project Team to ensure we can proceed with the work safely. Crews that work together all the time will have a lower risk than hastily assembled crews.
- Workers at sites should avoid working less than six feet from others for prolonged periods unless their role requires prolonged closer proximity. Case specific risks and solutions will be assessed by the workers employer for those individuals required by their roles to work within these close proximities;
- Individuals should utilize technologies available to them such as email, text and teleconferencing to minimize direct contact with others;

- The number of people allowed in the hoist at the same time will be reduced to avoid crowding
- Project teams should stagger break and lunch schedules to minimize the number of people near one another;
- Project teams may also consider staggering start / finish times aimed at reducing large group wait times at the gates and the hoists;
- Meetings should be held in the area where an individual works, instead of a large gathering point;
- For all remaining in person gatherings, and in work environments in general, participants should exercise recommended practices for reducing the risk of transmission as identified by the Centers for Disease Control and Prevention, Health Canada and the World Health Organization.

Jobsite Sanitation Measures:

- As hand sanitizer is becoming a scarce commodity Contractors are making immediate arrangements to construct temporary sinks / handwash areas with hand soap, paper towels and garbage cans. The locations will be at various high-traffic locations.
- Each subcontractor is responsible for providing hand sanitizer for their worker's needs.
- Each subcontractor remains responsible for cleanliness in their lunchrooms.
- Each subcontractor remains responsible to provide PPE, noting that glove use is mandatory at CCC.
- Each subcontractor is responsible for disinfecting shared tools, iPads, etc. between uses.

Cleaning and Disinfecting:

Conduct routine daily cleaning of hard non-porous surfaces throughout construction sites including: site office trailers, lunchrooms, orientation and meeting rooms, first aid rooms, stair railings, scaffold stair railings, portable toilets, elevator/hoist and equipment controls. Routine cleaning will be completed according to our Safe Work Procedure: Surface Cleaning for Potential **Virus Contamination:**

In the event there is a presumptive case for COVID – 19, present on site, we isolate and clean work areas / surfaces that may have been contaminated. In the event a confirmed case of COVID-19 was present on site, close the site and employ a specialized biohazard remediation, abatement company will professionally disinfect the contaminated areas.

All cleaning products and procedures from Contractor and Cleaning Services used on Projects must be vetted by an Industrial Hygienist Consultant to verify that they are sufficient for disinfecting COVID-19. If products or procedures are deemed unreliable, they must be discontinued.

Wearing Gloves:

All workers must wear gloves in accordance with their SWP and rules. Wearing gloves, besides being a safety requirement reduces the likelihood of workers touching their eyes, nose or ears reducing the potential of transmission from contaminated surfaces.

Workers should replace their used gloves frequently with new gloves and launder used gloves, if practicable, with their work clothes to prevent them from becoming potential sources of transmission.

Project Orientation:

The current concerns for COVID -19 makes orientations especially important as a means of communicating with new workers the safety precautions that they must comply with for them to work on this site.

It is also a point for screening workers and asking them questions about their travels and health to verify that they are healthy and not in contravention of any Public Health Authority recommendations.

It is also a moment when we can reassure workers that our project is being managed for their safety, that we are taking COVID – 19 seriously and that the most important thing to us is their health and safety.

The following are changes to the orientation routine:

- **Where practical, move orientation outdoors and conduct a verbal orientation – reinforce social distancing.**
- If orientations are conducted in a room keep the door secure and post social distancing signage on the door to the orientation room to prevent workers from grouping outside or in the room and waiting. Disinfect used pens, tables, chairs and table after each use.
- Host multiple orientation sessions to avoid violating social distancing.

Before providing an orientation have workers and visitors complete the Health Questionnaire COVID-19 to verify that they are healthy and fit for work. Workers that are not permitted access according to the questionnaire must be turned away.

As part of the verbal orientation, review:

- what is social distancing of 2 M (6 ½ ft.)
- location of hand washing and hand sanitization stations and the frequency that they are expected to clean their hands.
- location of posters and other communications • site specific procedures for hoists, stairwells, etc.
- what we are doing at the site to promote a safe workplace and remind them that their health is important to us.
- the importance of reporting to their supervisor if they are feeling unwell and leaving the project.

Hoist Operation:

Hoists must be operated in accordance with social distancing requirements. Projects must operate the hoist in accordance with the following:

- Outside the hoist: Post signage and remind the workers to maintain social distancing 2 M (6 ½ ft) while they are waiting to enter the hoist.
- Inside the hoist: Maintain social distancing and reduce the number of passengers at any one time. If necessary, mark a space on the deck of the hoist where each worker is expected to stand.
- Load the passengers in order so that they don't need to pass each other in the hoist as they are exiting – this requires organization.
- Passengers to face the outside of the hoist to avoid being inside each other's breathing zone.
- Hoist Operator is permitted to wear a respiratory protection.
- Hoist surfaces (call buttons, door handles, etc.) that are routinely touched will be disinfected regularly. **Project Radio / Cellphone:**

Do not share communication devices. Because radios and cell phones are held close to the mouth to talk, they are a likely source for transmission.

Disinfect radios and cell phones at start of shift and regularly throughout the shift.

Stairwells / Scaffold Stair Towers:

If workers have only a single means of access to their work areas, they need to observe protocols to prevent them from violating the social distancing. Those may include:

- Calling out and communicating that they have entered the stair and are proceeding up / down and thus warn people to prevent them from entering the stairwell until they have passed.
- Staging outside stair entrances until it is clear for them to enter.
- Stopping outside the social distancing area if they are approaching another worker and discussing how they will pass while maintaining social distancing.

Project Offices/Trailers:

Project offices and trailers are off limits to people that do not belong in them. The close quarters in a trailer may be a challenge to maintain social distancing. Hold discussion outside where practicable. Make use of vacant offices / trailers to redistribute staff to limit contact. The following applies:

- Post "Restricted Access" signage on door with contact information (phone #).
- Keep the door locked to prevent access.

- Restrict the number of people who are allowed to enter these offices to social distancing allowances.
- If you are a visitor in an office or trailer - do not touch things - If possible, keep your hands in your pockets or to yourself. Disinfect anything touched by the visitor prior to use.
- Do not share keyboard or mouse, pens, clipboards or documents.
- Disinfect commonly touched items like door handles, chairs, tables, stair handrails, etc.

Lunchrooms:

Lunchrooms are places where there is a potential for people to come to contact with each other or contaminated surfaces. The following applies:

- Post social distancing signage to remind workers to keep their distance.
- Post signage to remind workers to wash or disinfect their hands before and after eating.
- Stagger coffee/lunch breaks to reduce the number of workers in the lunchroom at the same time.
- Organize chairs and stagger seating arrangement to maintain social distancing or take lunch and coffee outside
- Remove garbage often.
- Clean and disinfect tables, microwaves and other commonly handled items between worker s/ lunch shifts.
- If air circulation is a concern install negative air units and vent outside lunchroom.
- Separate PPE and clothing that is hung up in the lunchroom to avoid touching.
- Workers intending to take work clothing home should place it in a plastic bag and not remove it until it goes into the laundry to be washed – ideally separately.

First Aid Treatment:

Report workplace injuries to the First Aid Attendant (FAA). As a precaution the FAA will wear N95 mask or ½ mask respirator, face shield and medical gloves when treating workers. As part of the FAA injury assessment the FAA will reconfirm the status of the workers' health in accordance with the *Health Questionnaire* questions.

If workers are feeling unwell or exhibiting symptoms of COVID -19 They need to inform their Supervisor ASAP. If they are fit enough to leave the project and arrive home safely, they should go home and follow the Public Health Authorities instructions for reporting self - isolating and treatment.

If workers are travelling on public transit or in close contact with others to get to their homes and <u>if available,</u> we will provide sick workers with N95 masks to be worn by them to help prevent any transmission from the sick worker.

Other Options to Consider:

- Only one driver per vehicle or sanitize between drivers.
- Use only your own tools or sanitize between operators.
- Eat lunch alone, where possible in your vehicle, respecting social distance.

Safety Certificates etc:

- Ensure that you have all necessary staff and backup staff compliant for the next 6 months. There is no suggestion that rules around fall protection or first aid etc. are going to be altered.
- Certifications in general could become harder to obtain – get up to date now
- Authorities are being lenient due to the circumstances on expiry dates as they are aware that these certificates may not be readily obtained.
- This does not remove the employer's obligation to ensure that the workers are knowledgeable about and competent to do the tasks that they are assigned to do.

Training on Tools:

- Some sites are already experiencing 20- 50% loss of manpower. Check your crews to ensure you can still safely operate equipment and maintain workflow.

Shifts:

- Consider adjusting shifts to accommodate reduced density of crews and rotate availability of workers who may have challenges manage children that are now not in school or daycare.

OFFICE:

Social distancing:

- If possible, have a work from home strategy, move desks apart, sanitize your office regularly.
- Larger organization have split their office staff between home and office. This allows distancing in the office by reducing density and allows the ability to switch out people if someone gets sick.

Warning on your door:

- Do not allow delivery people in your office unless they have confirmed they are in good health.

External workers or visitors:

- Have them complete a statement saying they are in good health before allowing them access to your premises.

Work from Home Security:

- Working from home brings risks to your organization. Workers must respect strict security rules to ensure they don't introduce viruses to your system. With many homes having children/teenagers it is imperative that workers logout from your system **every time** they leave their computer.
- The risk of phishing or other attacks is on the increase as the hackers are literally seeking to exploit the situation

RISK MANAGEMENT

Steps if a Case is Suspected:

- If it is suspected that someone is sick in the Workplace: Ensure protection of workplace and provide good solutions for workers.
- "Sick" means coughing or sneezing more than explainable from dust or environmental issues. It could be the common cold or the flu, either way if there is a possibility that someone is sick, they should be sent home.
- If a trade partner is suspected as sick, send them home and notify their manager.
- If an employee who can work from home effectively is identified as sick, they will be
- sent home and use technology to continue to work.
- If an employee who cannot work from home effectively is identified as sick, they will be temporarily laid off so they can recover.
- Anyone who goes home as sick or is sent home as sick must follow current guidelines in respect of screening, testing or self-isolation

What to do with a confirmed COVID-19 case:

The projections show that 30-70% of the population may ultimately get this illness. All the measures being implemented are to slow the spread to ensure the medical system has the capacity to treat those who need it when they get it.

In the event of a confirmed case –

- Notify everyone by email as soon as it is confirmed. It is important to communicate well through this so you will be the first to know.
- Follow the guidelines provided by Health PEI.
- Research is showing the virus lasts max 72 hours without people so we would shut down the workplace for 72 hours. After we would go in and disinfect the hard surfaces like door handles to be sure, but it would be safe to continue work there.
- If we have a crew or entire worksite that is quarantined, we will quarantine them for 14 days, shut down the site for 72 hours and restart it as above with a substitute crew to keep work proceeding.

Other Business Considerations:

- We must work together to ensure job sites remain open. Strong leadership to fully comply with government mandates is imperative.
- Now is the time to review your active contracts to ensure you understand payment terms and what could impact them.
- Understand your insurance coverage.
- Ensure that you understand the HR implications of any layoffs or absenteeism that may result from this situation.
- Have a process in place should any short-term site shutdown occur
- Preplan your orderly exit if an order is issued today to close one or many sites.
- If an inspector is required to sign off on your work, ensure they have an option in place in case they are unable to complete their inspections.

Our industry is known as a safety conscious and diligent community of professionals and as we work through this situation we will learn, continuously improve and take our capabilities to new heights as we serve our customers our people and the communities that we are part of.

APENDIX A

COVID-19 Health Check Questionnaire

The following questions are designed to ensure our Site Supervisors and Trade Partners are able to make informed and collaborative decisions that maintain the highest possible level of health and wellbeing on our projects. All workers must complete of this form.

Name:	**Project Name:**
Employer:	**Date:**

Please complete the following questions honestly and accurately by selecting "YES" or "NO".

QUESTIONS	Please Check	
	YES	NO
1. Have you travelled outside of Canada on or after March 12, 2020 or been in close contact with someone who has?		
2. Have you travelled to Italy, Iran, or the Hubei Province of China in February or March 2020 or been in close contact with someone who has?		
3. Are you experiencing the signs/symptoms of COVID-19? 4. i.e. shortness of breath, cough, sore throat, or fever?		
5. Have you been in contact with a person showing the symptoms of COVID-19 within the past 14 days?		
6. Have you been in contact with a person who has tested positive for COVID-19 within the past 14 days?		

If you answer "YES" to any of the questions above, you may be asked to leave the worksite and liaise with your Employer on next steps.

Your Employer will advise you on what must happen next and may include return to work or the recommendation to self-isolate and take the online COVID-19 self-assessment tool.

Workers who are determined not to present a risk of COVID-19 transmission to others on site will be allowed to return to work as per the relevant Policy.

***NOTE: This Health Check Questionnaire is mandatory for all workers.**

Workers who refuse to complete this Health Check Questionnaire as defined by the Site-Specific Pandemic Preparedness Plan will be denied access to the site.

I hereby acknowledge the above information to be true. **Employee Signature:**

APPENDIX B.

EXAMPLE COVID–19 PANDEMIC PREPAREDNESS PLANNING GUIDANCE DOCUMENT.

1.0 General

The health and safety of all employees, trade partners and workers are a top priority.

In response to the current pandemic situation, we require all worksites, both offices and projects, to develop a Site-Specific Pandemic Preparedness Plan based on the criteria below in order to reduce the risk of contracting or spreading Coronavirus (COVID-19).

2.0 Definitions

COVID-19: Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS- CoV). Coronavirus disease (COVID-19) is an infectious disease caused by a new virus that had not been previously identified in humans. (https://www.who.int/health-topics/coronavirus)

Self-Quarantine/Self-Isolation: To stay at home and monitor yourself for symptoms, even if mild, for 14 days and avoid contact with other people to help prevent the spread of disease in your home and in your community in the event you become symptomatic. (https://www.canada.ca/en/public-health/services/publications/diseases-conditions/selfmonitoring- self-isolation-isolation-for-covid-19.html)

3.0 Scope

The COVID-19 Pandemic Preparedness Planning Guidance Document is intended to provide guidelines for individuals visiting or working on a site or within an office, as well as providing clear expectations on the measures to be taken in reducing the risk of contracting or spreading COVID-19.

4.0 Document

This guidance document is intended for all employees and Trade Partner employees.

4.1 All projects must provide access to hand washing or hand sanitizing stations

- Where running water is available, additional sinks with hot and cold running water, soap, paper towels and trash bins should be available outside of breakrooms, trailers, and bathrooms.
- It is recommended to have two Hand Wash Stations per project and additional stations when the workforce exceeds 100 (Ratio 1:40, adjust if necessary, based on usage).

- Permanent plumbed sinks should be the first choice. Note: If you have access to permanent facilities on the project, then no additional hand-wash stations are required but please keep this area stocked with hand soap and one-time use paper towels. Also, maintain a regular cleaning of these facilities.
- Temporary portable wash stations are a secondary choice only when plumbed running hot and cold water are not available.
- If hand washing stations are not available, hand sanitizer is the next best option. Use an alcohol-based hand sanitizer with at least 60% alcohol.
- Hand sanitizer should also be available in common areas.
- Note: If you are unable to source supplies yourself then notify site supervisory of office management staff who will source and alternative.

4.2 Clean and disinfect frequently touched objects and surfaces

- Increase the cleaning frequency of common areas on the project. Surfaces can be cleaned using a regular household cleaning spray or wipe. A formal procedure and a responsibility matrix to accomplish and maintain these practices should be determined.
- Areas to consider would include: break/lunch areas, lunch tables, microwaves, coffee machines, turnstiles, handrails, doorknobs, bathrooms, commonly used equipment such as hoist, telephones, computer equipment, coffee machines and vending machines, and all common areas.
- Consider adding foot push/pull devices to doors for hand-free access/egress especially for bathrooms.
- Increase cleanings of temporary restroom(s) and ensure that these restrooms also have hand sanitizer available.
- Have a supply of surface disinfectant, Clorox wipes (or similar), Hand Soap and Hand Sanitizer available.
- While not sustainable, for now we recommend using disposable utensils, plates, and cups. Maintain a good supply on hand. Require anyone bringing a container to rinse it themselves and take home for thorough cleaning.

4.3 Communicate Basic Illness Prevention Hygiene

- Post signage and posters.
- Post signs encouraging proper hand hygiene and stopping the spread of germs.
- Post information at project entry points, break and lunchrooms, restroom facilities, on huddle/safety boards, etc.
- There are many resources available on Workday and online.

4.4 Limit size of gatherings

- Stagger / separate stretch and flex, stand downs, and large group meetings. These should be conducted by individual crews.
- High-risk activity announcements in the morning should become a written communication that the crew leader reviews with their individual crews.

- Conduct meetings in spaces that allow for social distancing between meeting attendees. Where and when possible, maintain a 6 ft. distance from each other while gathering.
- Run meetings via conference call when possible. Encourage those in the same office area to call in separately versus sitting in a room together.
- Implement strategies for staggering and/or reducing density and duration of workers:
- Stagger trade arrival times.
- Limit the total number of persons riding in hoists/elevators; encourage the use of stairs for travel any less than 3 floors.
- Arrange lunch/break areas in a manner that accommodates social distancing so that all workers are not joined together in same area. Stagger lunch/break times between trades.
- Limit all visitors to site to those only essential for project continuity. If the individual has been outside the country in the last 14 days or exposed to someone who has recently tested positive for COVID-19, then they MUST leave the worksite.

4.5 Remind everyone to stay home when they are sick and report to us any confirmed COVID-19 diagnosis

- The PHAC (Public Health Authority of Canada) recommends that workers who have a fever and respiratory symptoms stay at home until 24 hours after their fever ends (100.4 degrees Fahrenheit [37.8 degrees Celsius] or lower), without the use of medication.
- Travel and Exposure Policy covers additional measures to be taken around travel, confirmed cases and potential worksite closures.

4.6 Contractual Considerations

It is imperative that we manage our rights as well as those of our clients and industry partners as outlined in Prime Contracts and Subcontract Agreements. Should disruption of our work occur, our Contracts likely contain provisions that address unforeseen delay such as “Force Majeure” or “Delays” clauses.

Force Majeure is defined as a contract provision excusing a party from performing its contractual obligations when it becomes impossible or impracticable due to an event or effect that the parties could not have anticipated or controlled when the contract was signed.

Please ensure all project management staff does a review of all delay provisions outlined in their Contracts and immediately prepare for the appropriate next steps such as formal notice to our Clients. It is critical to provide protection to us as afforded under Contract in a timely and reasonable manner. Please also note that our standard Subcontracts allow for such provisions to our Subcontractors. As such, if we receive a

notification from our subs it also needs to trigger the notification noted above as a flow through.

As this is not standard operating practice, we encourage anyone with questions to elevate them to your supervisor or management to ensure that we get it right.

4.7 Supply Chain Audit

It is prudent that our project teams immediately complete a supply chain audit to identify, determine the impact and identify mitigation strategies for supply chain interruption including but not limited to the following:

- Possible shortages of raw materials
- Possible shortages of finished products
- Cost escalation of products or materials
- Any vulnerabilities to the supply chain
- Changes to delivery services or procedures

We will be providing support and sharing information as it becomes available to assist you in managing this potential disruption. It is important to recognize that these disruptions may not be seen or recognized for weeks or months. Timely notification of potential disruptions are typically defined in our Contracts so please become acutely familiar with notification periods as soon as possible.

Again, please communicate concerns or questions to your supervisor or management.

APPENDIX C

EXAMPLE COVID – 19 TRAVEL & EXPOSURE POLICY

1.0 General

As the coronavirus (COVID-19) outbreak continues, we are providing policy updates on how to protect yourself and prepare for potential outcomes.

This is a dynamic situation and our guidance is likely to evolve. We encourage you to continue to access the most up to date information from relevant sources.

2.0 Definitions

COVID-19: Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERSCoV) and Severe Acute Respiratory Syndrome (SARS- CoV). Coronavirus disease (COVID-
19) is an infectious disease caused by a new virus that had not been previously identified in humans. (https://www.who.int/health-topics/coronavirus)

Self-Quarantine/Self-Isolation: To stay at home and monitor yourself for symptoms, even if mild, for 14 days and avoid contact with other people to help prevent the spread of disease in your home and in your community in the event you become symptomatic.
(https://www.canada.ca/en/public-health/services/publications/diseases-conditions/self-monitoring-self-isolation-isolation-for-covid-19.html)

Essential Travel Impact Chart:

Level Impact

4 **High**- Significant Financial Risk if not present. Interruption making a critical operational functionality unavailable or severe impact on service availability. No alternative solution or workaround. Significant number of employees or teams impacted.

3 **Medium**- Critical functionality temporarily interrupted or unusable; Operational Impact on projects. Temporary workaround and alternative solutions cumbersome, costly and not timely.
Potential financial risk. Some teams and employees negatively impacted.

2 **Low**- Operational impact but no direct impact on functionality or service availability; Workaround is available. Alternative solution available but may not be most desired. Minimal number of teams and employees impacted.

1 **None**- No operational impact. System, application or process functions; maintain current state. Feasible workaround available. No Impact to team or employees.

Current Essential travel set to:* ***Level 4 Essential*

3.0 Scope

The Coronavirus (COVID-19) Travel & Exposure Policy is intended to provide guidelines for individuals who have or are planning to travel, including individuals who work or live within close proximity to travelers. In addition, these guidelines apply to individuals who have contracted or have been exposed to someone who has contracted COVID-19.

4.0 Policy

This policy is intended for all employees and Trade Partner employees.

4.1 Guideline for Business Travel

We have established a complete travel restriction on all international business travel.

All ****non-essential*** domestic business travel outside of your home metro-area should be suspended for the months of March and April.

All ***essential** domestic business travel must be pre-approved by your supervisor and your Business Unit Vice Presidents.

4.2 Guideline for employees returning from an international location, or who cohabitate or have had close contact with someone who has.

Federal and provincial public health leaders have recommended that all travelers returning to Canada self- isolate for 14 days. In response to this, all employees must follow Health Canada's recommendation and only return to work after 14 days and if symptom free.

4.3 Guideline for hosting visitors from an international location to our projects or offices.

Clearly communicate to all expected visitors that they are not allowed to visit a worksite or office until they have been back in the country for 14 days from their return and are symptom free. Visitors should also be limited to only those essential for project continuity.

4.4 Guideline for employees exhibiting symptoms of respiratory illness.

All individuals are required to disclose if they are experiencing symptoms consistent with COVID-19.

If someone is exhibiting symptoms, we should recommend they leave the worksite and advise them to self- isolate and call health link for further advice. If they are exhibiting respiratory distress requiring emergency care, they should go to the hospital.

If the individual has been outside the country in the last 14 days or exposed to someone who has recently tested positive for COVID-19, then they MUST leave the worksite.

4.5 Guideline for employees who cohabitate or have had close contact with someone who has tested positive.

All individuals are required to disclose if they have been exposed to persons who have tested positive for COVID-19. These individuals will be required to self-isolate for 14 days from last exposure. These individuals should contact Health PEI and follow health authority recommendations.

4.6 Guideline for employees who have tested Positive for COVID-19.

All individuals are required to disclose that they have tested positive for the virus. They are to notify, by email and phone, the site supervisor and HR.

Your organization will notify all workers on that site of a positive test and a temporary stop work order will be issued, until a further site assessment can be carried out and an effective control plan implemented.

All workers will be asked to self-quarantine and follow local exposure protocols as dictated by the governing health authority in their region. In Prince Edward Island currently, individuals who test positive are not permitted to return to a jobsite or office until they have two confirmed negative COVID-19 tests and have their isolation orders lifted by a medical professional.

Your employer will work with our leaders and clients to determine next steps when work will resume.

4.7 Guideline for Compensation during Quarantine Periods

Each organization will likely establish its own policy within the requirements of employment law and regulations

Geotechnical Study

Proposed Structure Replacement
St. Teresa Bridge (K3-065), Route 22
St. Teresa, Kings County, PE

Project No. 121621178

October 29, 2020

Prepared for:

PEI Transportation, Infrastructure and Energy
PO Box 2000
Charlottetown PE C1A 7N8

Prepared by:

Stantec Consulting Ltd.
165 Maple Hills Avenue
Charlottetown PE C1C 1N9

Stantec Consulting Ltd.
165 Maple Hills Avenue, Charlottetown PE C1C 1N9

October 29, 2020
File: 121621178

Attention: Mr. Andrew Murphy, P.Eng.
PEI Transportation, Infrastructure and Energy
Capital Projects Division
PO Box 2000
Charlottetown PE C1A 7N8

Dear Mr. Murphy,

Reference: Geotechnical Study - Proposed Structure Replacement
St. Teresa Bridge (K3-065), Route 22, St. Teresa, Kings County, PE

1. INTRODUCTION

This letter reports the results of the geotechnical investigation carried out for the above-noted project, in accordance with your request. The primary purpose of the investigation was to establish the subsurface conditions in the area of the structure and, based on the conditions encountered, to provide geotechnical engineering recommendations pertaining to foundation design and construction for the proposed replacement structure. The results of the environmental testing carried out on selected samples of the existing fill materials encountered at the site are also discussed herein.

2. SITE AND PROJECT DESCRIPTION

The project site is located on Route 22 in St. Teresa, Kings County, Prince Edward Island. We understand the existing structure will be replaced with a buried highway culvert structure. The new alignment is to be located along the existing alignment. The existing structure is shown on the appended Figure No. 1 – Borehole Location Plan.

3. PROCEDURE

Four boreholes, identified as BH-1 to BH-4, were advanced on August 28 and 31, 2020, by Lantech Drilling Services Inc. of Dieppe, New Brunswick with a track mounted drill rig. The boreholes were advanced to depths ranging from approximately 12.95 to 23.01 meters below existing grades at the locations shown on Figure No. 1 – Borehole Location Plan.

BH-1 and BH-4 were geotechnical boreholes and were advanced approximately 3.0 meters from the face of the existing structure to obtain subsurface geotechnical information. BH-2 and BH-3 were environmental boreholes and were advanced approximately 1.0 meter from the face of the existing structure to obtain samples for chemical analyses. Select environmental samples, taken at locations and depths as requested by the Prince Edward Island Department of Transportation, Infrastructure, and Energy (PEITIE), were retrieved, and sent to Bureau Veritas laboratories (BV) in Bedford, NS for laboratory analyses. Borehole Records were not prepared for these boreholes.

Personnel from our Charlottetown office supervised the drilling activities and logged the subsurface conditions encountered at the borehole locations. The overburden soils at the borehole locations were sampled at regular intervals using Standard Penetration Test (SPT) techniques with a 50-millimeter, outside-diameter split-barrel sampler in general accordance with the standard test method American Society for Testing and Materials (ASTM) D1586 (*Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils*). SPT N-values were recorded for each split-barrel sample obtained. The determination of soils density and consistency as indicated on the Borehole Records, are based on the results of the SPT. Soil samples were stored in moisture-tight containers and returned to our laboratory for further classification and testing. Bedrock samples were retrieved from each borehole in accordance with ASTM D2113 (*Standard Practice for Rock Core Drilling and Sampling of Rock for Site Exploration*).

Borehole locations were established in the field by our personnel relative to the existing structure. The borehole locations were surveyed following completion of the field program by PEIITE personnel. Ground surface elevations at the borehole locations are summarized in Table 1.

Table 1: Survey Data

Point ID	Elevation (m)
BH-1	49.45
BH-2	49.48
BH-3	49.42
BH-4	49.43

3.1. SUBSURFACE CONDITIONS

3.1.1. SOIL AND BEDROCK CONDITIONS

Soil classification was based on the procedures described in ASTM D2487 *(Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System))* and ASTM D2488 *(Standard Practice for Description and Identification of Soils, Visual-Manual Procedure)*.

The soil and bedrock strata encountered at the site during the subsurface investigation program are described in detail on the attached Borehole Records and are summarized on Table 2, appended. The attached *Symbols and Terms used on Borehole and Test Pit Records* provide a brief explanation of the terminology and graphics used by Stantec.

Subsurface soil and bedrock conditions encountered generally include:

- ASPHALT/ROADBED Gravel
- FILL
- Silty SAND (SM)
- TILL
- SEDIMENTARY BEDROCK

3.1.1.1. ASPHALT/ROADBED Gravel

A layer of asphalt and roadbed gravel was observed at both boreholes. The thickness of the asphalt was observed to be 175 mm in BH-1 and 150 mm in BH-4. The thickness of the roadbed gravel was observed to be 125 mm in BH-1 and 150 mm in BH-4.

3.1.1.2. FILL

Fill was observed below the roadbed gravels in each borehole. The total fill thickness was observed to range from 3.66 to 3.84 meters. The fill was classified as reddish brown silty sand, and contained trace gravel, cobbles and organics. N-values from SPT performed within the fill layer ranged from 4 to 31, with an average of 19.

A representative sample of the fill was submitted for gradation testing and moisture testing and the results are presented in Table 3, and appended. The moisture contents of the samples are presented on the Borehole Records.

Table 3: FILL - Laboratory Testing Summary

Borehole ID, Sample ID	Moisture Content (%)	Gravel (%)	Sand (%)	Silt / Clay (%)
BH-1, SS2	13.2	1	61	38

3.1.1.3. Silty SAND (SM) to Silty SAND (SM) with Gravel

A layer of brown silty SAND (SM) to silty SAND (SM) with gravel, was observed below the fill at both boreholes. Trace cobbles and frequent wood pieces and organics were noted within the deposit. The thickness of the SAND was observed to be 1.98 m in BH-1 and 2.26 m in BH-4. N-values from SPT performed within the layer ranged from 4 to 27, with an average of 15, indicating a predominantly compact compactness, ranging from loose to compact.

Two representative samples were submitted for gradation testing and the results are presented in Table 4, and appended. The moisture contents of the samples are presented on the Borehole Records.

Table 4: Silty SAND (SM) - Laboratory Testing Summary

Borehole ID, Sample ID	Moisture Content (%)	Gravel (%)	Sand (%)	Silt / Clay (%)
BH-1, SS8	12.3	36	47	17
BH-4, SS6	15.3	2	70	28

3.1.1.4. TILL

A layer of reddish brown clayey SAND (SC) with gravel, geologically classified as glacial till, was observed below the silty SAND at both boreholes. Trace cobbles were noted within the deposit. Please note, till can be a heterogenous mixture of soil sizes ranging from clay to silt to sand to gravel to cobbles and boulders. The portions of the various soil sizes can vary widely in the deposit. The thickness of the till was determined to be 14.02 meters in BH-4, while BH-1 was terminated within the till layer. The elevation of the till surface ranged from 43.33 to 43.81 meters. N-values from SPT performed within the till ranged from 10 to refusal, with an average of 22, indicating a predominantly compact compactness, ranging from compact to very dense.

Three representative samples were submitted for gradation testing and the results are presented in Table 5, and appended. Two samples were submitted for Atterberg Limits and are also presented in Table 5 and appended. The moisture contents of the samples are presented on the Borehole Records.

Table 5: TILL - Laboratory Testing Summary

Borehole ID, Sample ID	Moisture Content (%)	Gravel (%)	Sand (%)	Silt / Clay (%)	Liquid Limit (%)	Plasticity Index (%)
BH-1, SS11	12.8	18	49	33		
BH-1, SS12	14.0	23	44	33		
BH-1, SS14					19.8	7.8
BH-4, SS13	12.6	23	41	36	21.0	10.3

3.1.1.5. SEDIMENTARY BEDROCK

Sedimentary bedrock was encountered at BH-4, at a depth of 20.12 meters below existing grade, at an elevation of approximately 29.31 meters. Bedrock was confirmed by rock coring.

Rock core samples indicate the bedrock is predominantly medium grained sandstone. The RQD (Rock Quality Designation) of the bedrock averaged 72 percent and ranged from 71 to 73, indicating a fair quality. The bedrock ranged from reddish brown to whitish red in color. The sandstone rock mass was predominantly medium grained, slightly weathered, with extremely weak to medium strong strength. Discontinuities were extremely close to widely spaced and predominantly horizontal and parallel to bedding.

The results of point load tests carried out on selected bedrock core samples are presented on Table 6, appended. The point load index (Is) was determined from both diametral and axial tests. The unconfined compressive strength (Qu) was estimated from the point load data using the relationship Qu = 24 x Is. The point load test data indicate that the core samples tested fall within the weak (5 to 25 MPa) to medium strong (25 to 50 MPa) strength classifications as per the aforementioned *Symbols and Terms used on Borehole and Test Pit Records*. It should be noted that the weakest rock is often not recovered during coring operations and that intact core samples are required for testing. Consequently, an extremely weak to medium strong classification would be more representative of the overall rock mass at the site and is predominantly used on the Borehole Records.

3.1.1.6. GROUNDWATER

Groundwater levels were encountered at a depth of 3.9 meters below existing ground surface and can be expected to fluctuate during periods of heavy precipitation associated with seasonal weather trends, or a particular event, site use, adjacent site use, and construction activity.

4. DISCUSSION AND RECOMMENDATIONS

4.1. GENERAL

The existing fill and silty sand layers are not suitable for support of the proposed foundation due to the very loose to loose compactness condition and the presence of wood and organic debris. Spread footings would be required to bear on undisturbed glacial till or structural fill, placed as described herein. Alternatively, loads could be carried to the sandstone bedrock via deep foundations.

As previously discussed, the subsurface conditions encountered at the site generally include fill and loose soils underlain by native glacial till and sedimentary bedrock consisting predominantly of sandstone. As noted previously, the groundwater table was encountered at a depth of approximately 3.9 meters below grade, which is located above the surface of the glacial till. Given the observed soils conditions, we anticipate the structure will be supported by spread footings bearing on glacial till or structural fill.

The recommendations presented herein are based on the site conditions observed at the time of the investigation program and our understanding of the proposed structure.

4.2. SITE PREPARATION

Existing fill and loose soils are not suitable for the support of foundations and should be removed in their entirety within the stress zone of influence. The stress zone of influence extends outward and downward from footing edges or the embankment toe at one horizontal to one vertical (1H: 1V). Subgrades should consist of undisturbed till or structural fill. Following excavation to the till subgrade, we recommend the subgrades be reviewed by experienced geotechnical personnel prior to fill placement. Soft or loose zones identified should be excavated and replaced with approved structural fill. Consideration could be made for placement of a mudslab or Class A gravel over the subgrade to provide a working surface and prevent softening of the subgrade.

Excavation below the water table would require dewatering. We recommended the placement of a drainage layer to facilitate dewatering within the excavation by means of submersible pumps. The use of cofferdams could be required to control the inflow of water from upstream. We recommend the implementation of groundwater control/lowering measures prior to excavating to the founding level. Structural fill placement should be completed under dry conditions. The drainage layer should consist of Class A or drainage stone meeting the current PEITIE standard specifications. The use of a separator fabric may be required at the surface of the drainage layer to prevent the migration of fines from subsequent structural fill placement.

The native till observed at the site is susceptible to softening in the presence of moisture and construction traffic. We recommend excavation activities by completed in dry conditions immediately prior to structural fill placement. The excavated subgrade surfaces should be sloped to prevent ponding of water on the approved subgrade surfaced. Surface runoff should be directed away from open excavations and exposed subgrades. Minimizing exposed subgrades in lieu of mass excavation will limit subgrade disturbance from precipitation.

Excavation side slopes should not be cut steeper than 1 horizontal to 1 vertical without some means of shoring or a protective cage to ensure safe working conditions for construction personnel. Side slopes that extend below the groundwater table may have to be cut at flatter inclinations to ensure stable conditions. In all cases, the guidelines set forth by PEI Occupational Health and Safety with respect to excavation and safety must be adhered to.

An allowable bearing pressure of up to 150 kPa may be used for design of spread footings bearing on structural fill overlying undisturbed glacial till. Associated total settlement should not exceed 25 millimeters. Footings exposed to freezing conditions should have a minimum soil cover of 1.5 meters (or equivalent insulation) for frost protection. It is recommended that final excavation for footings be carried out with a ditching type bucket (i.e. no teeth) to minimize disturbance of the soil bearing surface. Any soil that

becomes disturbed as a result of construction activity and/or water should be removed from the bearing surface prior to concrete or fill placement.

Unless otherwise specified, imported structural fill should consist of an approved soil (preferably granular) which is free of organics and deleterious material, such as pit run sandstone. Fill materials meeting the current Prince Edward Island Transportation and Energy (PEITIE) Select Borrow Specification (i.e. maximum of 30 percent fines based on the minus 4.75-millimeter sieve fraction) would be acceptable for use.

Structural fill should be placed in lifts not exceeding 300 millimeters in loose thickness and be compacted throughout the lift thickness to 100 percent of the standard Proctor maximum dry density as determined in accordance with ASTM D698 (*Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort*). Structural fill compaction should be verified by means of in-place density testing.

4.3. TEMPORARY EXCAVATIONS

Safe excavations are the responsibility of the earthworks contractor. As a minimum, temporary excavations must be sloped in accordance with the applicable Prince Edward Island Occupational Health and Safety Guidelines. Side slopes that extend below the water table may have to be cut at flatter inclinations to ensure stable conditions. If an excavation cannot be properly sloped or benched, the contractor should install an engineered shoring system to safely support the temporary excavation.

Excavation slopes should be checked regularly for signs of instability and flattened as required. Soil stockpiles should not be located within 1.5 times the height of the excavation depth to avoid surcharging the excavation walls.

5. ENVIRONMENTAL CONSIDERATIONS

To assess disposal options for soils to be excavated from the site, appropriate screening levels were identified. Guidance was taken from the provincial Petroleum Hydrocarbon Remediation Regulations issued under the PEI *Environmental Protection Act.* The Atlantic RBCA (Risk-Based Corrective Action) User Guidance for Petroleum Impacted Sites in Atlantic Canada, (Version 3.0, July 2012, revised September 2015) was used to assess petroleum hydrocarbon (PHC) concentrations. Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines (SoQG) were used to assess metal and polycyclic aromatic hydrocarbon (PAH) concentrations.

Samples of the existing fill and native till were recovered from the boreholes and submitted to Bureau Veritas laboratories (BV) for chemical analyses. Selected soil samples from each borehole were analysed for the following parameters:

- petroleum hydrocarbons (PHCs)
- metals
- PAHs
- chloride (salt)

As the soil is coarse-grained, results were compared to coarse-grained guidelines. Results were also compared to potable guidelines and all potential land-use categories. To be conservative, the source of PAHs was assumed to be creosote and the calculated Benzo[a]pyrene Total Potency Equivalents (B[a]P TPE) concentration for the soil samples was multiplied by an uncertainty factor of 3 prior to comparison with the guidelines.

The results of the testing carried out are included in Tables 7 to 10 in the Appendix.

For the analysis of PHCs, BTEX were not detected in the analyzed samples. All six samples had non-detectable concentrations of mTPH; therefore, they were below the Atlantic RBCA Tier I Risk-Based Screening Levels (RBSLs).

All PAH concentrations were below detection levels and, therefore, below the CCME SoQGs. There were no other exceedances of the CCME SoQGs for the protection of environmental and human health.

Detections were reported for metals; however, no samples were found to have concentrations exceeding referenced guideline values.

Chloride concentrations ranged from 16 to 53 mg/kg.

6. CLOSING COMMENTS

Use of this report is subject to the Statement of General Conditions provided in the Appendix. It is the responsibility of PEI Transportation, Infrastructure and Energy (PEITIE), identified as “the Client” within the Statement of General Conditions, and its agents to review the conditions and to notify Stantec should any of these not be satisfied. The Statement of General Conditions addresses the following:

- Use of the report
- Basis of the report
- Standard of care
- Interpretation of site conditions
- Varying or unexpected site conditions
- Planning, design or construction

Reference: Geotechnical Study - Proposed Structure Replacement
St. Teresa Bridge (K3-065), Route 22, St. Teresa, Kings County, PE

We trust that this report contains all of the information required at this time. Should you have any questions or if we can be of further service, please contact us at your convenience

Regards,

STANTEC CONSULTING LTD.

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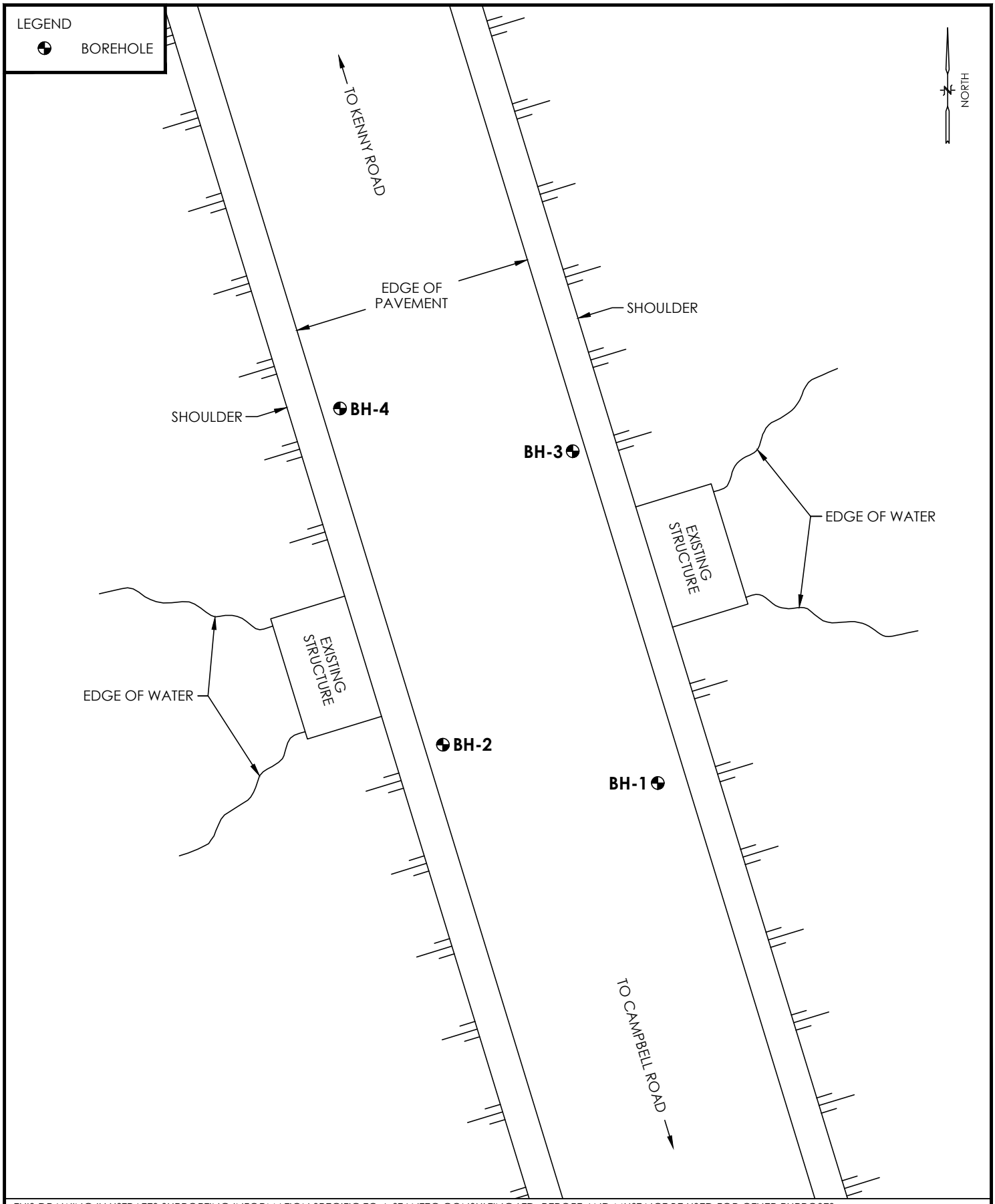
Stantec

October 29, 2020
Mr. Andrew Murphy, P.Eng.

Reference: **Geotechnical Study - Proposed Structure Replacement**
St. Teresa Bridge (K3-065), Route 22, St. Teresa, Kings County, PE

APPENDIX



THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

BOREHOLE LOCATION PLAN

ST. TERESA BRIDGE, ROUTE 22, K3-065

ST. TERESA, KINGS COUNTY, PE

Client: PEI Department of Transportation, Infrastructure and Energy

Job No.:	121621178
Scale:	N.T.S
Date:	14-OCT-2020
Dwn. By:	MA
App'd By:	MM

Dwg. No.: 1

Stantec

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SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology describing common soil genesis:

Rootmat	- vegetation, roots and moss with organic matter and topsoil typically forming a mattress at the ground surface
Topsoil	- mixture of soil and humus capable of supporting vegetative growth
Peat	- mixture of visible and invisible fragments of decayed organic matter
Till	- unstratified glacial deposit which may range from clay to boulders
Fill	- material below the surface identified as placed by humans (excluding buried services)

Terminology describing soil structure:

Desiccated	- having visible signs of weathering by oxidization of clay minerals, shrinkage cracks, etc.
Fissured	- having cracks, and hence a blocky structure
Varved	- composed of regular alternating layers of silt and clay
Stratified	- composed of alternating successions of different soil types, e.g. silt and sand
Layer	- > 75 mm in thickness
Seam	- 2 mm to 75 mm in thickness
Parting	- < 2 mm in thickness

Terminology describing soil types:
The classification of soil types are made on the basis of grain size and plasticity in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487 or D 2488) which excludes particles larger than 75 mm. For particles larger than 75 mm, and for defining percent clay fraction in hydrometer results, definitions proposed by Canadian Foundation Engineering Manual, 4th Edition are used. The USCS provides a group symbol (e.g. SM) and group name (e.g. silty sand) for identification.

Terminology describing cobbles, boulders, and non-matrix materials (organic matter or debris):
Terminology describing materials outside the USCS, (e.g. particles larger than 75 mm, visible organic matter, and construction debris) is based upon the proportion of these materials present:

Trace, or occasional	Less than 10%
Some	10-20%
Frequent	> 20%

Terminology describing compactness of cohesionless soils:
The standard terminology to describe cohesionless soils includes compactness (formerly "relative density"), as determined by the Standard Penetration Test (SPT) N-Value - also known as N-Index. The SPT N-Value is described further on page 3. A relationship between compactness condition and N-Value is shown in the following table.

Compactness Condition	SPT N-Value
Very Loose	<4
Loose	4-10
Compact	10-30
Dense	30-50
Very Dense	>50

Terminology describing consistency of cohesive soils:
The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, or unconfined compression tests. Consistency may be crudely estimated from SPT N-Value based on the correlation shown in the following table (Terzaghi and Peck, 1967). The correlation to SPT N-Value is used with caution as it is only very approximate.

Consistency	Undrained Shear Strength		Approximate SPT N-Value
	kips/sq.ft.	kPa	
Very Soft	<0.25	<12.5	<2
Soft	0.25 - 0.5	12.5 - 25	2-4
Firm	0.5 - 1.0	25 - 50	4-8
Stiff	1.0 - 2.0	50 – 100	8-15
Very Stiff	2.0 - 4.0	100 - 200	15-30
Hard	>4.0	>200	>30

ROCK DESCRIPTION

Except where specified below, terminology for describing rock is as defined by the International Society for Rock Mechanics (ISRM) 2007 publication "The Complete ISRM Suggested Methods for Rock Characterization, Testing and Monitoring: 1974-2006"

Terminology describing rock quality:

RQD	Rock Mass Quality
0-25	*Very Poor Quality*
25-50	*Poor Quality*
50-75	*Fair Quality*
75-90	*Good Quality*
90-100	*Excellent Quality*

Alternate (Colloquial) Rock Mass Quality	
Very Severely Fractured	*Crushed*
Severely Fractured	*Shattered or Very Blocky*
Fractured	*Blocky*
Moderately Jointed	*Sound*
Intact	*Very Sound*

RQD (Rock Quality Designation) denotes the percentage of intact and sound rock retrieved from a borehole of any orientation. All pieces of intact and sound rock core equal to or greater than 100 mm (4 in.) long are summed and divided by the total length of the core run. RQD is determined in accordance with ASTM D6032.

SCR (Solid Core Recovery) denotes the percentage of solid core (cylindrical) retrieved from a borehole of any orientation. All pieces of solid (cylindrical) core are summed and divided by the total length of the core run (It excludes all portions of core pieces that are not fully cylindrical as well as crushed or rubble zones).

Fracture Index (FI) is defined as the number of naturally occurring fractures within a given length of core. The Fracture Index is reported as a simple count of natural occurring fractures.

Terminology describing rock with respect to discontinuity and bedding spacing:

Spacing (mm)	Discontinuities	Bedding
>6000	*Extremely Wide*	-
2000-6000	*Very Wide*	*Very Thick*
600-2000	*Wide*	*Thick*
200-600	*Moderate*	*Medium*
60-200	*Close*	*Thin*
20-60	*Very Close*	*Very Thin*
<20	*Extremely Close*	*Laminated*
<6	-	*Thinly Laminated*

Terminology describing rock strength:

Strength Classification	Grade	Unconfined Compressive Strength (MPa)
Extremely Weak	R0	<1
Very Weak	R1	1 – 5
Weak	R2	5 – 25
Medium Strong	R3	25 – 50
Strong	R4	50 – 100
Very Strong	R5	100 – 250
Extremely Strong	R6	>250

Terminology describing rock weathering:

Term	Symbol	Description
Fresh	W1	No visible signs of rock weathering. Slight discoloration along major discontinuities
Slightly	W2	Discoloration indicates weathering of rock on discontinuity surfaces. All the rock material may be discolored.
Moderately	W3	Less than half the rock is decomposed and/or disintegrated into soil.
Highly	W4	More than half the rock is decomposed and/or disintegrated into soil.
Completely	W5	All the rock material is decomposed and/or disintegrated into soil. The original mass structure is still largely intact.
Residual Soil	W6	All the rock converted to soil. Structure and fabric destroyed.

STRATA PLOT

Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols. The dimensions within the strata symbols are not indicative of the particle size, layer thickness, etc.

Boulders Cobbles Gravel | Sand | Silt | Clay | Organics | Asphalt | Concrete | Fill | Igneous Bedrock | Meta-morphic Bedrock | Sedi-mentary Bedrock

SAMPLE TYPE

SS	Split spoon sample (obtained by performing the Standard Penetration Test)
ST	Shelby tube or thin wall tube
DP	Direct-Push sample (small diameter tube sampler hydraulically advanced)
PS	Piston sample
BS	Bulk sample
HQ, NQ, BQ, etc.	Rock core samples obtained with the use of standard size diamond coring bits.

WATER LEVEL MEASUREMENT

measured in standpipe, piezometer, or well

inferred

RECOVERY

For soil samples, the recovery is recorded as the length of the soil sample recovered. For rock core, recovery is defined as the total cumulative length of all core recovered in the core barrel divided by the length drilled and is recorded as a percentage on a per run basis.

N-VALUE

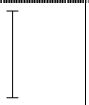
Numbers in this column are the field results of the Standard Penetration Test: the number of blows of a 140 pound (63.5 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (50.8 mm) O.D. split spoon sampler one foot (300 mm) into the soil. In accordance with ASTM D1586, the N-Value equals the sum of the number of blows (N) required to drive the sampler over the interval of 6 to 18 in. (150 to 450 mm). However, when a 24 in. (610 mm) sampler is used, the number of blows (N) required to drive the sampler over the interval of 12 to 24 in. (300 to 610 mm) may be reported if this value is lower. For split spoon samples where insufficient penetration was achieved and N-Values cannot be presented, the number of blows are reported over sampler penetration in millimetres (e.g. 50/75). Some design methods make use of N-values corrected for various factors such as overburden pressure, energy ratio, borehole diameter, etc. No corrections have been applied to the N-values presented on the log.

DYNAMIC CONE PENETRATION TEST (DCPT)

Dynamic cone penetration tests are performed using a standard 60 degree apex cone connected to 'A' size drill rods with the same standard fall height and weight as the Standard Penetration Test. The DCPT value is the number of blows of the hammer required to drive the cone one foot (300 mm) into the soil. The DCPT is used as a probe to assess soil variability.

OTHER TESTS

S	Sieve analysis
H	Hydrometer analysis
k	Laboratory permeability
γ	Unit weight
G_s	Specific gravity of soil particles
CD	Consolidated drained triaxial
CU	Consolidated undrained triaxial with pore pressure measurements
UU	Unconsolidated undrained triaxial
DS	Direct Shear
C	Consolidation
Q_u	Unconfined compression
I_p	Point Load Index (I_p on Borehole Record equals $I_p(50)$ in which the index is corrected to a reference diameter of 50 mm)

	Single packer permeability test; test interval from depth shown to bottom of borehole
	Double packer permeability test; test interval as indicated
	Falling head permeability test using casing
	Falling head permeability test using well point or piezometer

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BOREHOLE RECORD

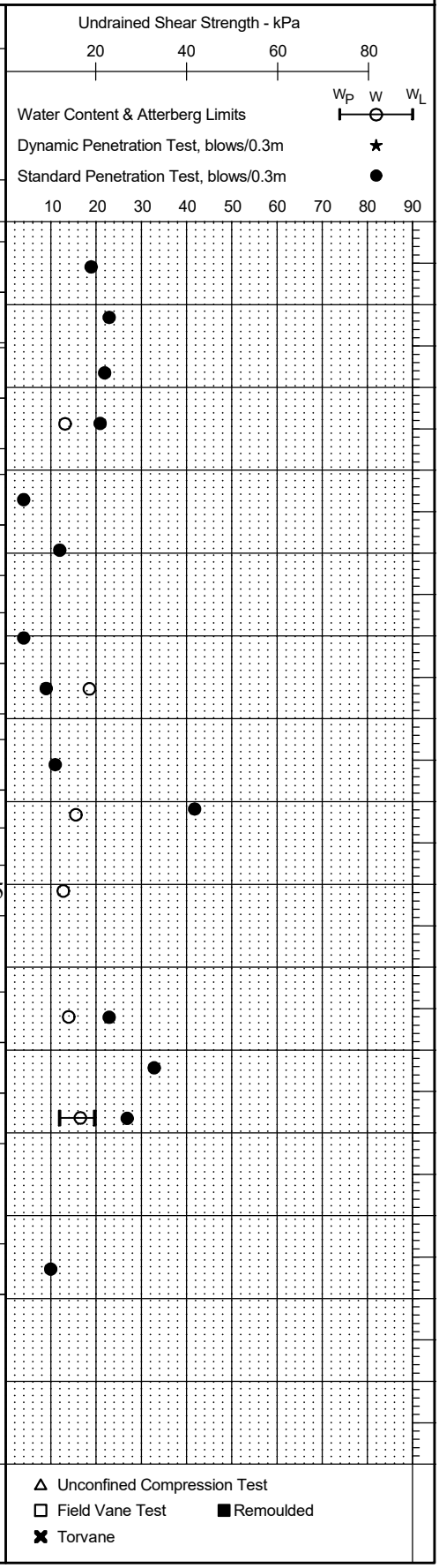
BH-1

CLIENT **Prince Edward Island Department of Transporation, Infrastructure and Energy** PROJECT No. **121621178**

LOCATION **St. Teresa Bridge, Route 22, K3-065, Kings County, PE** BOREHOLE No. **BH-1**

DATES: BORING **2020/08/31** WATER LEVEL **3.9 mbg (8/31/2020)** DATUM **Geodetic**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD
	49.45						mm	
0	49.3	ASPHALT (175 mm)						
	49.2	ROADBED GRAVEL (125 mm)			SS	1	525	19
1		FILL: reddish brown silty sand -trace gravel -trace cobbles -trace organics			SS	2	350	23
					SS	3	600	22
2					SS	4	475	21
3	45.8				SS	5	600	4
4		Loose to compact brown silty SAND (SM) with gravel -with cobbles -frequent wood pieces and organics			SS	6	350	12
					SS	7	0	4
5	43.8				SS	8	475	9
6		Compact reddish brown clayey sand (SC) with gravel: TILL -with frequent cobbles			SS	9	175	11
7					SS	10	300	42
8					SS	11	375	50/125
9								
					SS	12	325	23
10					SS	13	100	33
					SS	14	250	27
11								
12								
	36.5				SS	15	325	10
13		End of borehole at 12.95 m						
14								
15								



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BOREHOLE RECORD

BH-4

CLIENT **Prince Edward Island Department of Transporation, Infrastructure and Energy** PROJECT No. **121621178**

LOCATION **St. Teresa Bridge, Route 22, K3-065, Kings County, PE** BOREHOLE No. **BH-4**

DATES: BORING **2020/08/28** WATER LEVEL **3.9 mbg (8/28/2020)** DATUM **Geodetic**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD
	49.43						mm	
0	49.3	ASPHALT (150 mm)						
	49.1	ROADBED GRAVEL (150 mm)			SS	1	475	15
1		FILL: reddish brown silty sand with gravel to silty sand, trace gravel -trace cobbles			SS	2	325	22
					SS	3	600	27
2					SS	4	550	31
3					SS	5	575	9
	45.6				SS	6	550	11
4		Loose brown silty SAND (SM) -trace gravel -trace cobbles -frequent wood pieces and organics						
5					SS	7	525	26
					SS	8	225	27
6	43.3							
		Compact reddish brown clayey sand (SC) with gravel: TILL -with frequent cobbles			SS	9	325	11
7					SS	10	300	43
					SS	11	325	15
8					SS	12	200	27
9					SS	13	425	20
					SS	14	175	18
10					SS	15	75	15
11								
12								
					SS	16	0	22
13								
14					SS	17	200	12
15								

Undrained Shear Strength - kPa

20 40 60 80

Water Content & Atterberg Limits W_P W W_L

Dynamic Penetration Test, blows/0.3m ★

Standard Penetration Test, blows/0.3m ●

10 20 30 40 50 60 70 80 90

△ Unconfined Compression Test

□ Field Vane Test ■ Remoulded

✖ Torvane

Continued Next Page

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BOREHOLE RECORD

BH-4

CLIENT **Prince Edward Island Department of Transporation, Infrastructure and Energy** PROJECT No. **121621178**

LOCATION **St. Teresa Bridge, Route 22, K3-065, Kings County, PE** BOREHOLE No. **BH-4**

DATES: BORING **2020/08/28** WATER LEVEL **3.9 mbg (8/28/2020)** DATUM **Geodetic**

DEPTH (m)	ELEVATION (m)	SOIL DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD
							mm	
15		TILL con't						
16					SS	18	175	17
17					SS	19	225	21
18								
19					SS	20	250	25
20	29.3				SS	21	200	50/50
21		Reddish brown to whitish red, fair quality, extremely weak to medium strong, slightly weathered medium grained SANDSTONE. -discontinuities are horizontal, parallel to bedding and spaced extremely close to wide			HQ	22	100%	71
22					HQ	23	100%	73
23	26.4	End of borehole at 23.01 m						
24								
25								
26								
27								
28								
29								
30								

Undrained Shear Strength - kPa

20 40 60 80

Water Content & Atterberg Limits W_P W W_L

Dynamic Penetration Test, blows/0.3m ★

Standard Penetration Test, blows/0.3m ●

10 20 30 40 50 60 70 80 90

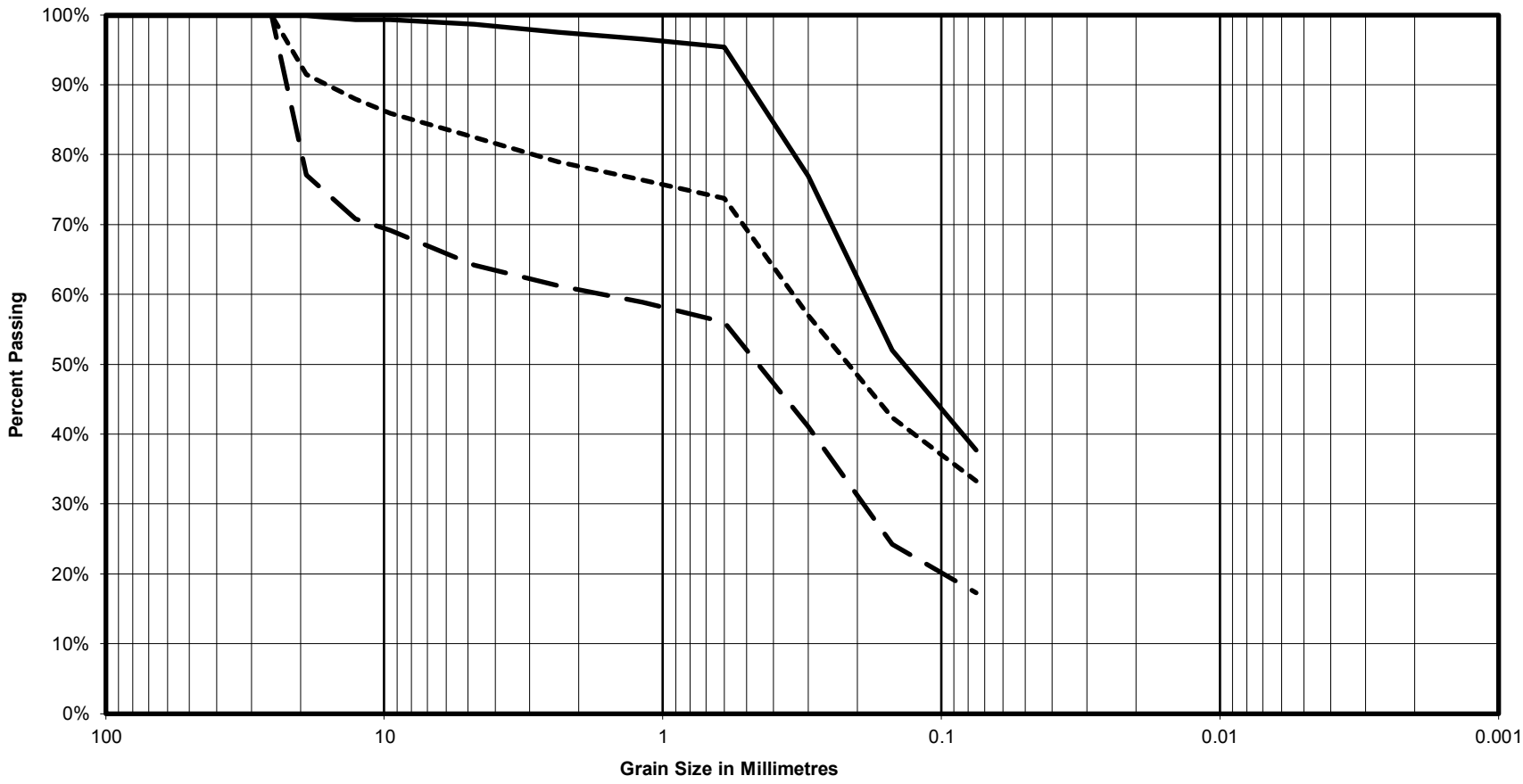
△ Unconfined Compression Test

□ Field Vane Test ■ Remoulded

✖ Torvane

Approved:

PROJECT: St. Teresa Bridge, Route 22, K3-065, Kings County, PE



	Gravel		Sand			Silt and Clay
	Coarse	Fine	Coarse	Medium	Fine	

Unified Soil Classification System ASTM D 2487/2488

Curve	BOREHOLE/TESTPIT	SAMPLE	DEPTH (m)	Soil Fractions			Soil Description
				Gravel	Sand	Silt/Clay	
———	BH-1	SS 4	2.13 to 2.74	1%	61%	38%	FILL: Silty Sand
— — ·	BH-1	SS 8	5.33 to 5.94	36%	47%	17%	Silty SAND (SM) with Gravel
- - - -	BH-1	SS 11	7.77 to 8.38	18%	49%	33%	Clayey Sand (SC) with Gravel: Till

Job No.: 121621178

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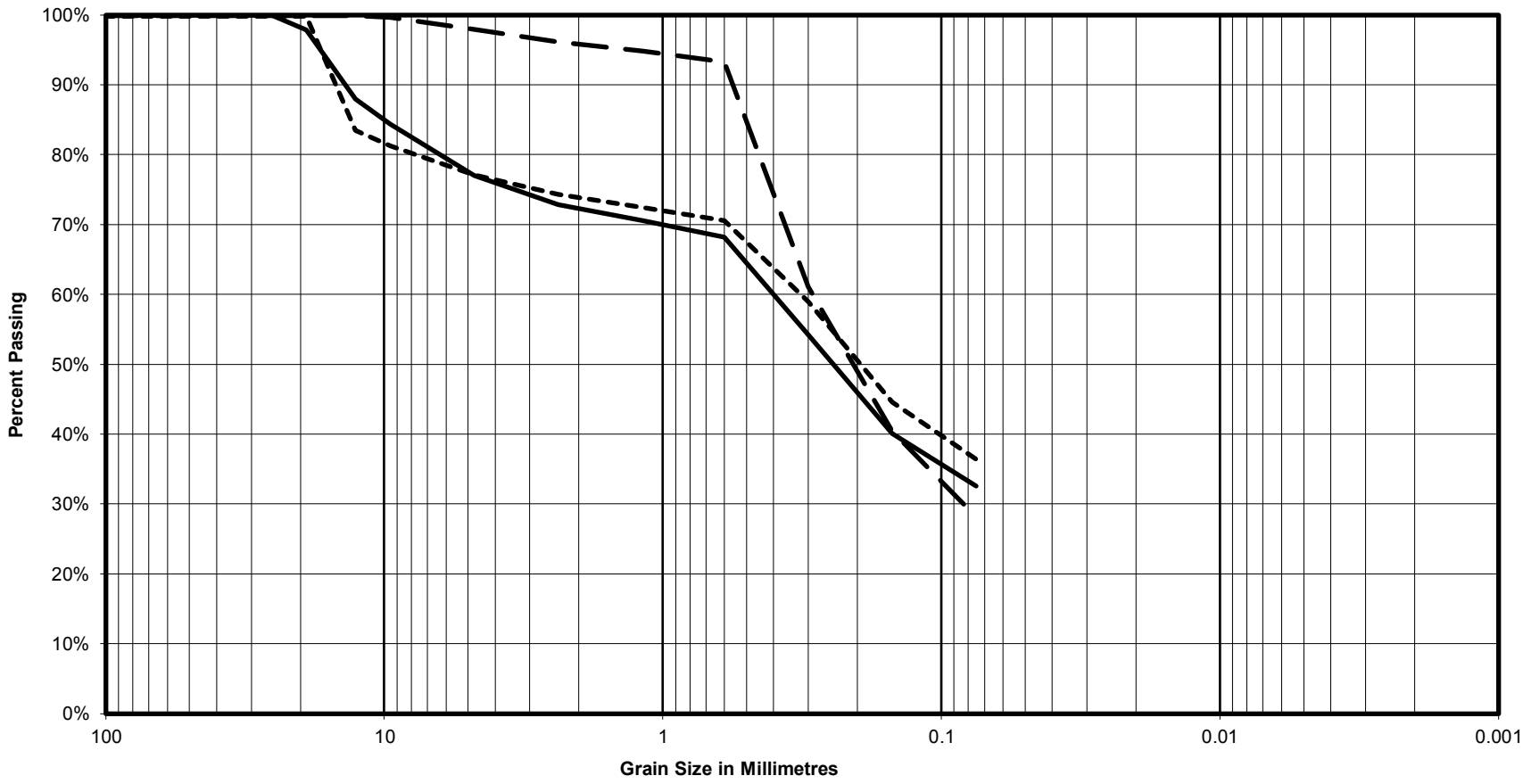
Approved:

PROJECT: St. Teresa Bridge, Route 22, K3-065, Kings County, PE



	Gravel		Sand			Silt and Clay
	Coarse	Fine	Coarse	Medium	Fine	

Unified Soil Classification System ASTM D 2487/2488

Curve	BOREHOLE/TESTPIT	SAMPLE	DEPTH (m)	Soil Fractions			Soil Description
				Gravel	Sand	Silt/Clay	
———	BH-1	SS 12	9.30 to 9.91	23%	44%	33%	Clayey Sand (SC) with Gravel: Till
— — ·	BH-4	SS 6	3.66 to 4.27	2%	70%	28%	Silty SAND (SM)
- - - -	BH-4	SS 13	9.14 to 9.75	23%	41%	36%	Clayey Sand (SC) with Gravel: Till

Job No.: 121621178

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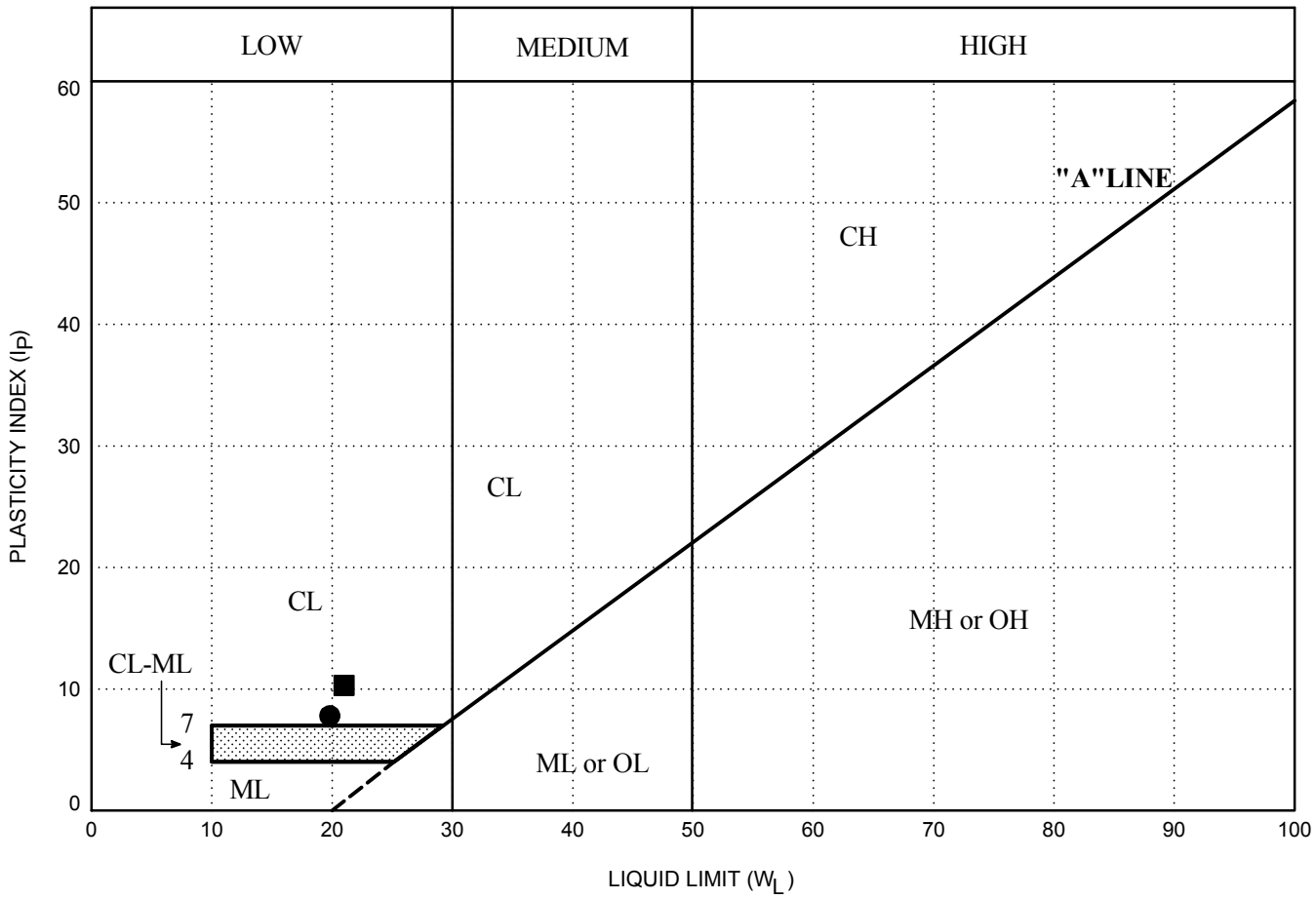
PLASTICITY CHART



SYM.	SOURCE	DEPTH (m)	LL	PL	PI	W%	DESCRIPTION
●	BH-1	11.1	19.8	12.0	7.8	16.6	Clayey Sand (SC) with Gravel: TILL
■	BH-4	9.5	21.0	10.7	10.3	12.6	Clayey Sand (SC) with Gravel: TILL

Stantec	Project: **St. Teresa Bridge, Route 22**	Location: **K3-065, Kings County, PE**
	Job No.: **121621178**	Notes:
	Date: **October 8, 2020**	**SOIL PLASTICITY**

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Table 2 - Borehole Summary - Structure Replacement, St. Teresa Bridge (K3-065), Route 22, Kings County, PE

	Borehole Number	
	BH-1	**BH-4**
Ground Surface el., m	49.45	49.43
Asphalt, mm	175	150
Roadbed Gravel, mm	125	150
Fill Thickness, m	3.66	3.84
Silty SAND (SM) Thickness, m	1.98	2.26
Till Surface el., m	43.81	43.33
Till Thickness, m	>7.31	14.02
Depth to Bedrock, m	>12.95	20.12
Bedrock Surface el., m	---	29.31
Depth of Borehole, m	12.95	23.01

NOTES:

- the boreholes were drilled at the site on August 28 and 31, 2020 with a mobile auger drill rig
- ground surface elevations were established by PEITIE and are referenced to Geodetic Datum
- sandstone bedrock was proven by rotary core drilling

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Table 6 - Point Load Test Summary, St. Teresa Bridge (K3-065), St. Teresa, Kings County, PE

Borehole Number	Sample Depth, m	Test Type	Is(50), MPa	UCS (Qu), MPa	Rock Type
BH-1	20.9	D	1.9	45	MGSS
	20.9	A	1.6	38	MGSS
	21.3	D	1.7	42	MGSS
	21.3	A	1.7	40	MGSS
	21.7	D	1.5	35	MGSS
	21.7	A	1.3	31	MGSS
	22.3	D	1.0	25	MGSS
	22.3	A	1.8	43	MGSS
	22.6	D	0.9	21	MGSS
	22.6	A	1.3	32	MGSS

Legend:
A- axial test
D- diametral test
UCS- unconfined compressive strength
MGSS- medium grained sandstone

Note: USC is estimated based on relationship Qu = 24 x Is50 (axial)

Table 7: Petroleum Hydrocarbons in Soil

Parameter	RBCA Tier 1 RBSL for Soil[1]		Units	Sample Identification, Depth (mbg), and Date					
	Agricultural/ Residential	Commercial/ Industrial		BH-01, SS-3	BH-02, SS-1	BH-02, SS-3	BH-03, SS-1	BH-03, SS-3	BH-04 SS-3
				31-Aug-20	28-Aug-20	28-Aug-20	31-Aug-20	31-Aug-20	28-Aug-20
Benzene	0.042	0.042	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Toluene	0.35	0.35	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Ethylbenzene	0.043	0.043	mg/kg	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Total Xylenes	0.73	0.73	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
C6 - C10 (less BTEX)	-	-	mg/kg	<3	<3	<3	<3	<3	<3
>C10-C16 Hydrocarbons	-	-	mg/kg	<10	<10	<10	<10	<10	<10
>C16-C21 Hydrocarbons	-	-	mg/kg	<10	<10	<10	<10	<10	<10
>C21-<C32 Hydrocarbons	-	-	mg/kg	<15	55	<15	40	<15	22
Modified TPH (Tier1)	1,100	10,000	mg/kg	<15	55	<15	40	<15	22
Hydrocarbon Resemblance	-	-	mg/kg	NA	Possible lube oil fraction	NA	Unidentified compound(s) in lube oil range	NA	Unidentified compound(s) in lube oil range

NA= Not Applicable, mbg = metres below ground surface, LD = laboratory duplicate sample

[1]Atlantic RBCA Tier I Risk Based Screening Levels (RBSLs) for potable, coarse-grained soils for No. 6 oil/lube oil

Table 8: Polycyclic Aromatic Hydrocarbons in Soil

Parameter	Units	CCME SoQG for the Protection of Environmental and Human Health				CCME SoQG for the Protection of Human Health	Sample Identification, Depth (mbg), and Date						
		Agricultural	Residential/ Parkland	Commercial/ Industrial	FWL		BH-01, SS-3	BH-01, SS-3 Lab-Dup	BH-02, SS-1	BH-02, SS-3	BH-03, SS-1	BH-03, SS-3	BH-04 SS-3
							8/31/2020	8/31/2020	8/28/2020	8/28/2020	8/31/2020	8/31/2020	8/28/2020
Non-carcinogenic PAHs													
Acenaphthene	mg/kg	-	-	-	0.28	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acenaphthylene	mg/kg	-	-	-	320	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	mg/kg	2.5	2.5	32	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluoranthene	mg/kg	50	50	180	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Fluorene	mg/kg	-	-	-	0.25	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Naphthalene	mg/kg	0.6	0.6	22	0.013	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Perylene	mg/kg	-	-	-	-	-	<0.010	<0.010	0.046	<0.010	0.10	<0.010	<0.010
Phenanthrene	mg/kg	0.1	5	50	0.046	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Pyrene	mg/kg	0.1	10	100	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
1-Methylnaphthalene	mg/kg	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
2-Methylnaphthalene	mg/kg	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Carcinogenic PAHs													
Benzo(a)anthracene	mg/kg	0.1	1	10	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(a)pyrene	mg/kg	20	20	72	8,800	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b)fluoranthene	mg/kg	0.12	1 [2]	10 [2]	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(b/j)fluoranthene	mg/kg	-	-	-	-	-	<0.020	-	<0.020	<0.020	<0.020	<0.020	<0.020
Benzo(g,h,i)perylene	mg/kg	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(j)fluoranthene	mg/kg	0.12	1 [2]	10 [2]	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Benzo(k)fluoranthene	mg/kg	0.12	1 [2]	10 [2]	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Chrysene	mg/kg	-	-	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Dibenz(a,h)anthracene	mg/kg	0.1	1	10	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	1	10	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
B(a)P TPE [1]	-	-	-	-	-	5.3							
IACR	-	-	-	-	-	<1.0							

Notes:
CCME= Canadian Council of Ministers of the Environment; SoQG = Soil Quality Guidelines
FWL = Protection of Freshwater Life
B(a)P TPE = Benzo(a)pyrene Total Potency Equivalents, which is the sum of estimated cancer potency relative to B(a)P for potentially carcinogenic unsubstituted PAHs
PEF = Potency Equivalence Factors; IACR = Index of Additive Cancer Risk
Most current version of guidelines accessed in December 2019
Underlined value exceeds FWAL; **bold** value exceeds Agricultural; italicized value exceeds IACR
[1] Uncertainty factor of 3 to be used if PAH source is expected to be creosote
[2] Guideline is for the sum of Benzo [b+j+k]fluoranthene
If the concentration is less than the detection limit, then 0.5RDL is used in B(a)P TPE and IACR calculation
" -" = no guideline available, mbg = metres below ground surface, LD = laboratory duplicate sample

Table 9: Metals in Soil

Parameter	Units	CCME SoQG for the Protection of Environmental and Human Health			Soil Sample Identification, Depth (mbg), and Date					
		Agricultural	Residential/ Parkland	Commercial/ Industrial	BH-01, SS-3	BH-02, SS-1	BH-02, SS-3	BH-03, SS-1	BH-03, SS-3	BH-04 SS-3
					8/31/2020	8/28/2020	8/28/2020	8/31/2020	8/31/2020	8/28/2020
Acid Extractable Aluminum (Al)	mg/kg	-	-	-	6,500	7,600	6,900	6,400	5,700	7,600
Acid Extractable Antimony (Sb)	mg/kg	20	20	40	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Arsenic (As)	mg/kg	12	12	12	3.3	4.4	3.7	2.9	3.7	3.4
Acid Extractable Barium (Ba)	mg/kg	750	500	2,000	15	28	32	15	22	24
Acid Extractable Beryllium (Be)	mg/kg	4	4	8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Bismuth (Bi)	mg/kg	-	-	-	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Boron (B)	mg/kg	-	-	-	<50	<50	<50	<50	<50	<50
Acid Extractable Cadmium (Cd)	mg/kg	1.4	10	22	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Acid Extractable Chromium (Cr)	mg/kg	64	64	87	12	16	16	11	16	15
Acid Extractable Cobalt (Co)	mg/kg	40	50	300	5.4	7.1	7.0	4.5	5.6	6.3
Acid Extractable Copper (Cu)	mg/kg	63	63	91	5.6	8.5	7.5	4.8	6.6	6.0
Acid Extractable Iron (Fe)	mg/kg	-	-	-	16,000	20,000	21,000	14,000	18,000	18,000
Acid Extractable Lead (Pb)	mg/kg	70	140	260 / 600	4.3	5.5	4.9	4.4	4.1	4.9
Acid Extractable Lithium (Li)	mg/kg	-	-	-	19	19	23	16	18	21
Acid Extractable Manganese (Mn)	mg/kg	-	-	-	510	710	880	240	440	490
Acid Extractable Mercury (Hg)	mg/kg	6.6	6.6	24 / 50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Acid Extractable Molybdenum (Mo)	mg/kg	5	10	40	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Acid Extractable Nickel (Ni)	mg/kg	45	45	89	12	16	16	9.9	15	14
Acid Extractable Rubidium (Rb)	mg/kg	-	-	-	5.5	6.6	6.7	6.0	6.3	6.0
Acid Extractable Selenium (Se)	mg/kg	1	1	2.9	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acid Extractable Silver (Ag)	mg/kg	20	20	40	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Acid Extractable Strontium (Sr)	mg/kg	-	-	-	<5.0	5.1	6.3	<5.0	5.9	<5.0
Acid Extractable Thallium (Tl)	mg/kg	1	1	1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Acid Extractable Tin (Sn)	mg/kg	5	50	300	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acid Extractable Uranium (U)	mg/kg	23	23	33 / 300	0.46	0.49	0.51	0.39	0.45	0.47
Acid Extractable Vanadium (V)	mg/kg	130	130	130	12	17	14	12	12	15
Acid Extractable Zinc (Zn)	mg/kg	250	250	410	24	32	29	24	25	28

[1] Canadian Council of Ministers of the Environment Soil Quality Guidelines (SoQG) for the Protection of Environmental and Human Health, most current version of guidelines accessed in December 2019

" -" = no guideline available, mbg = metres below ground surface, LD = laboratory duplicate sample

Table 10: Chloride in Soils

Parameter	Units	Sample Identification, Depth (mbg), and Date					
		BH-01, SS-3	BH-02, SS-1	BH-02, SS-3	BH-03, SS-1	BH-03, SS-3	BH-04 SS-3
		8/31/2020	8/28/2020	8/28/2020	8/31/2020	8/31/2020	8/28/2020
Chloride (Cl)	mg/kg	19	21	16	53	31	27

mbg = metres below ground surface
LD = laboratory duplicate sample

PROFESSIONAL SERVICES TERMS AND CONDITIONS

The following Terms and Conditions are attached to and form part of the Proposal for Professional Services in Cymbria, PE to be performed by STANTEC and together, when the CLIENT authorizes STANTEC to proceed with the services, constitute the AGREEMENT.

DESCRIPTION OF WORK: STANTEC shall render the services described in the Proposal (hereinafter called the "SERVICES") to the CLIENT.

TERMS AND CONDITIONS: No terms, conditions, understandings, or agreements purporting to modify or vary these Terms and Conditions shall be binding unless hereafter made in writing and signed by the CLIENT and STANTEC. In the event of any conflict between the Proposal and these Terms and Conditions, these Terms and Conditions shall take precedence. This AGREEMENT supercedes all previous agreements, arrangements or understandings between the parties whether written or oral in connection with or incidental to the PROJECT

COMPENSATION: Payment is due to STANTEC upon receipt of invoice. Failure to make any payment when due is a material breach of this AGREEMENT and will entitle STANTEC, at its option, to suspend or terminate this AGREEMENT and the provision of the SERVICES. Interest will accrue on accounts overdue by 30 days at the lesser of 1.5 percent per month (18 percent per annum) or the maximum legal rate of interest. Unless otherwise noted, the fees in this agreement do not include any value added, sales, or other taxes that may be applied by Government on fees for services. Such taxes will be added to all invoices as required.

NOTICES: Each party shall designate a representative who is authorized to act on behalf of that party. All notices, consents, and approvals required to be given hereunder shall be in writing and shall be given to the representatives of each party.

TERMINATION: Either party may terminate the AGREEMENT without cause upon thirty (30) days notice in writing. If either party breaches the AGREEMENT and fails to remedy such breach within seven (7) days of notice to do so by the non-defaulting party, the non-defaulting party may immediately terminate the Agreement. Non-payment by the CLIENT of STANTEC's invoices within 30 days of STANTEC rendering same is agreed to constitute a material breach and, upon written notice as prescribed above, the duties, obligations and responsibilities of STANTEC are terminated. On termination by either party, the CLIENT shall forthwith pay STANTEC all fees and charges for the SERVICES provided to the effective date of termination.

ENVIRONMENTAL: Except as specifically described in this AGREEMENT, STANTEC's field investigation, laboratory testing and engineering recommendations will not address or evaluate pollution of soil or pollution of groundwater.

Where the SERVICES include storm water pollution prevention (SWPP), sedimentation or erosion control plans, specifications, procedures or related construction observation or administrative field functions, CLIENT acknowledges that such SERVICES proposed or performed by STANTEC are not guaranteed to provide complete SWPP, sedimentation or erosion control, capture all run off or siltation, that any physical works are to be constructed and maintained by the CLIENT's contractor or others and that STANTEC has no control over the ultimate effectiveness of any such works or procedures. Except to the extent that there were errors or omissions in the SERVICES provided by STANTEC, CLIENT agrees to indemnify and hold STANTEC harmless from and against all claims, costs, liabilities or damages whatsoever arising from any storm water pollution, erosion, sedimentation, or discharge of silt or other deleterious substances into any waterway, wetland or woodland and any resulting charges, fines, legal action, cleanup or related costs.

PROFESSIONAL RESPONSIBILITY: In performing the SERVICES, STANTEC will provide and exercise the standard of care, skill and diligence required by customarily accepted professional practices normally provided in the performance of the SERVICES at the time and the location in which the SERVICES were performed.

LIMITATION OF LIABILITY: The CLIENT releases STANTEC from any liability and agrees to defend, indemnify and hold STANTEC harmless from any and all claims, damages, losses, and/or expenses, direct and indirect, or consequential damages, including but not limited to attorney's fees and charges and court and arbitration costs, arising out of, or claimed to arise out of, the performance of the SERVICES, excepting liability arising from the sole negligence of STANTEC. It is further agreed that the total amount of all claims the CLIENT may have against STANTEC under this AGREEMENT, including but not limited to claims for negligence, negligent misrepresentation and/or breach of contract, shall be strictly limited to the lesser of professional fees paid to STANTEC for the SERVICES or $10,000. No claim may be brought against STANTEC more than two (2) years after the cause of action arose. As the CLIENT's sole and exclusive remedy under this AGREEMENT any claim, demand or suit shall be directed and/or asserted only against STANTEC and not against any of STANTEC's employees, officers or directors.

STANTEC's liability with respect to any claims arising out of this AGREEMENT shall be absolutely limited to direct damages arising out of the SERVICES and STANTEC shall bear no liability whatsoever for any consequential loss, injury or damage incurred by the CLIENT, including but not limited to claims for loss of use, loss of profits and/or loss of markets.

INDEMNITY FOR MOLD CLAIMS: It is understood by the parties that existing or constructed buildings may contain mold substances that can present health hazards and result in bodily injury, property damage and/or necessary remedial measures. If, during performance of the SERVICES, STANTEC knowingly encounters any such substances, STANTEC shall notify the CLIENT and, without liability for consequential or any other damages, suspend performance of services until the CLIENT retains a qualified specialist to abate and/or remove the mold substances. The CLIENT agrees to release and waive all claims, including consequential damages, against STANTEC, its subconsultants and their officers, directors and employees arising from or in any

way connected with the existence of mold on or about the project site whether during or after completion of the SERVICES. The CLIENT further agrees to indemnify and hold STANTEC harmless from and against all claims, costs, liabilities and damages, including reasonable attorneys' fees and costs, arising in any way from the existence of mold on the project site whether during or after completion of the SERVICES, except for those claims, liabilities, costs or damages caused by the sole gross negligence and/or knowing or willful misconduct of STANTEC. STANTEC and the CLIENT waive all rights against each other for mold damages to the extent that such damages sustained by either party are covered by insurance.

DOCUMENTS: All of the documents prepared by or on behalf of STANTEC in connection with the PROJECT are instruments of service for the execution of the PROJECT. STANTEC retains the property and copyright in these documents, whether the PROJECT is executed or not. These documents may not be used for any other purpose without the prior written consent of STANTEC. In the event STANTEC's documents are subsequently reused or modified in any material respect without the prior consent of STANTEC, the CLIENT agrees to defend, hold harmless and indemnify STANTEC from any claims advanced on account of said reuse or modification.

Any document produced by STANTEC in relation to the Services is intended for the sole use of Client. The documents may not be relied upon by any other party without the express written consent of STANTEC, which may be withheld at STANTEC's discretion. Any such consent will provide no greater rights to the third party than those held by the Client under the contract, and will only be authorized pursuant to the conditions of STANTEC's standard form reliance letter.

STANTEC cannot guarantee the authenticity, integrity or completeness of data files supplied in electronic format ("Electronic Files"). CLIENT shall release, indemnify and hold STANTEC, its officers, employees, consultants and agents harmless from any claims or damages arising from the use of Electronic Files. Electronic files will not contain stamps or seals, remain the property of STANTEC, are not to be used for any purpose other than that for which they were transmitted, and are not to be retransmitted to a third party without STANTEC's written consent.

FIELD SERVICES: STANTEC shall not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with work on the PROJECT, and shall not be responsible for any contractor's failure to carry out the work in accordance with the contract documents. STANTEC shall not be responsible for the acts or omissions of any contractor, subcontractor, any of their agents or employees, or any other persons performing any of the work in connection with the PROJECT.

GOVERNING LAW/COMPLIANCE WITH LAWS: The AGREEMENT shall be governed, construed and enforced in accordance with the laws of the jurisdiction in which the majority of the SERVICES are performed. STANTEC shall observe and comply with all applicable laws, continue to provide equal employment opportunity to all qualified persons, and to recruit, hire, train, promote and compensate persons in all jobs without regard to race, color, religion, sex, age, disability or national origin or any other basis prohibited by applicable laws.

DISPUTE RESOLUTION: If requested in writing by either the CLIENT or STANTEC, the CLIENT and STANTEC shall attempt to resolve any dispute between them arising out of or in connection with this AGREEMENT by entering into structured non-binding negotiations with the assistance of a mediator on a without prejudice basis. The mediator shall be appointed by agreement of the parties. If a dispute cannot be settled within a period of thirty (30) calendar days with the mediator, if mutually agreed, the dispute shall be referred to arbitration pursuant to laws of the jurisdiction in which the majority of the SERVICES are performed or elsewhere by mutual agreement.

ASSIGNMENT: The CLIENT and STANTEC shall not, without the prior written consent of the other party, assign the benefit or in any way transfer the obligations under these Terms and Conditions or any part hereof.

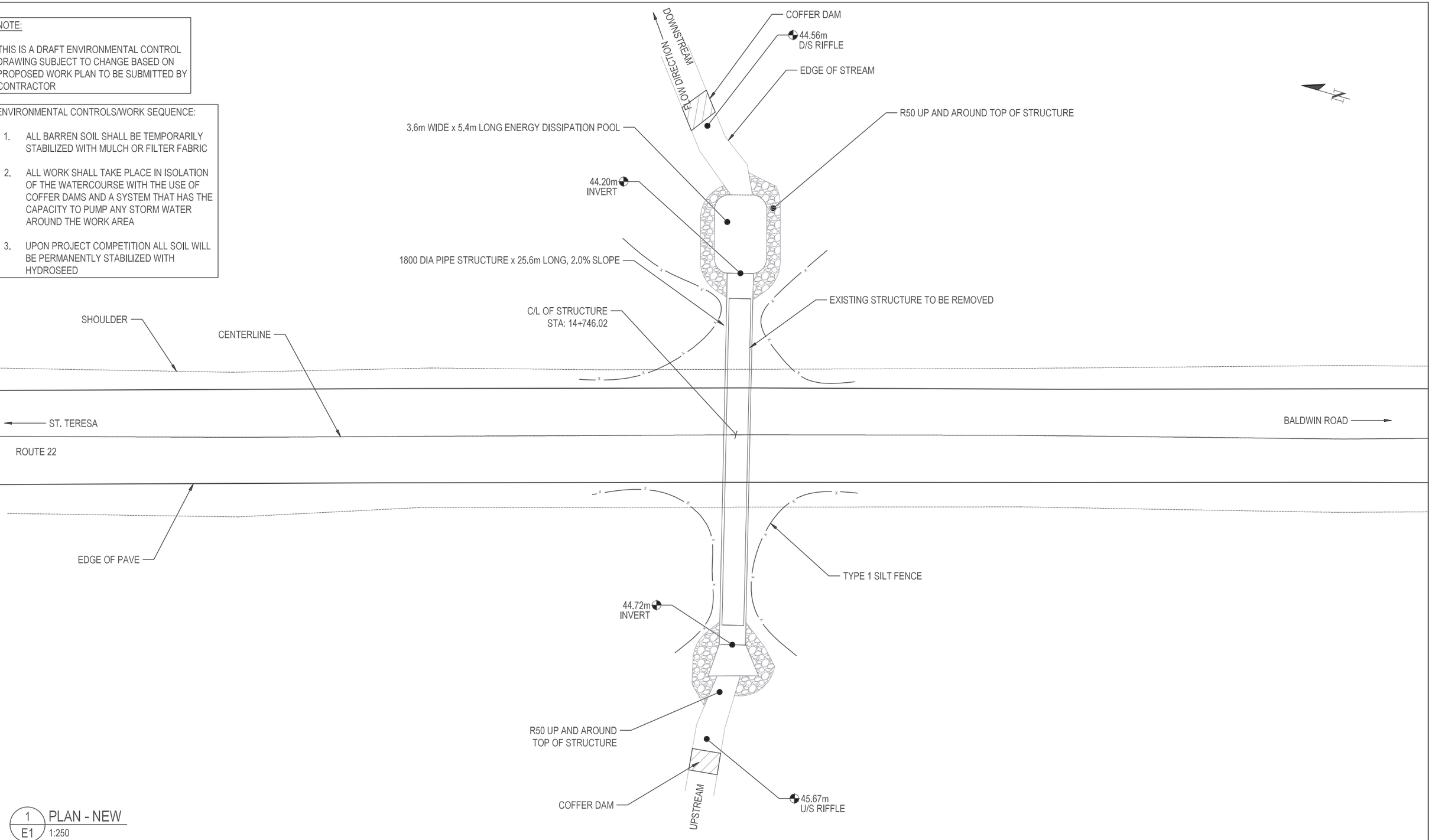
SEVERABILITY: If any term, condition or covenant of the AGREEMENT is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the remaining provisions of the AGREEMENT shall be binding on the CLIENT and STANTEC.

NOTE:

THIS IS A DRAFT ENVIRONMENTAL CONTROL DRAWING SUBJECT TO CHANGE BASED ON PROPOSED WORK PLAN TO BE SUBMITTED BY CONTRACTOR

ENVIRONMENTAL CONTROLS/WORK SEQUENCE:

1. ALL BARREN SOIL SHALL BE TEMPORARILY STABILIZED WITH MULCH OR FILTER FABRIC
2. ALL WORK SHALL TAKE PLACE IN ISOLATION OF THE WATERCOURSE WITH THE USE OF COFFER DAMS AND A SYSTEM THAT HAS THE CAPACITY TO PUMP ANY STORM WATER AROUND THE WORK AREA
3. UPON PROJECT COMPETITION ALL SOIL WILL BE PERMANENTLY STABILIZED WITH HYDROSEED



1 / E1 PLAN - NEW
1:250

Prince Edward Island CANADA

DEPT OF TRANSPORTATION AND INFRASTRUCTURE

Tel 902 368 5100
Fax 902 368 5395
http://www.gov.pe.ca/

PO Box 2000
Charlottetown
Prince Edward Island
Canada C1A 7N8

ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH TIE's STANDARD SPECIFICATIONS AND ENVIRONMENTAL PROTECTION PLAN (EPP).

MAINTAIN ENVIRONMENTAL CONTROLS UNTIL VEGETATION HAS ESTABLISHED OR AS INSTRUCTED ON SITE.

ALL DRIVEWAY CULVERTS AND SIDE SLOPES SHALL BE MIN. 3H:1V

SURVEY BY:	T.I.E.	SCALE:	AS NOTED
DRAWN BY:	K. MACEACHERN	COUNTY:	-----
APPROVED BY:	A. MURPHY		
PROJECT No.:	2021		

No.	REVISIONS	DATE
0	ISSUED FOR ENVIRO PERMIT	APRIL 29, 2021

STATIONING:

CONTROL SECTION:

JOB: ST TERESA ROUTE 22 STRUCTURE REPLACEMENT

SHEET NAME: ENVIRONMENTAL CONTROLS

SHEET No. E1 OF 5