

**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:

KEPPOCH ROAD – ROADWAY DRAINAGE AND WATER CONTROL STRUCTURE REPLACEMENT

DISTRICT 7

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 corrugated metal pipe structure and water control structure with a new pre-cast concrete pipe structure and cast-in-place concrete water control structure. The work on this project shall consist of the design, supply, installation and removal of cofferdam structure; excavation; slope protection; environmental controls; cold plane and stockpile asphalt; stream containment; demolition and removal of existing structures; concrete formwork and accessories; concrete reinforcement; precast concrete structure supply and installation; cast-in-place concrete placement and curing; hot-dipped galvanized steel handrail supply and installation; 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:
Wednesday, 3rd April 2024, 12:00 PM to 2:00 PM
355 Brackley Point Road, Queens County Highway Depot, Charlottetown, PEI**

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**TENDER CLOSE:
Wednesday, 3RD April 2024, 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

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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:

- OR (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:

- OR (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,

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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

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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, or on behalf of, the Department, the document titled "General Provisions and Contract Specifications for Highway and Bridge 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; Schedule E, Schedule of Sub-Contractors; and Schedule F, Appended Items, 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 30 September 2024.

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).

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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.

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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 , 2024.

SIGNED, SEALED AND DELIVERED
by the Minister on the day
of , 2024.

.....
CONTRACTOR

.....
MINISTER

In the presence of:

In the presence of:

.....

.....

SCHEDULE 'A'
SCHEDULE OF SPECIAL PROVISIONS
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1. GENERAL PROVISIONS AND CONTRACT SPECIFICATIONS for HIGHWAY & BRIDGE CONSTRUCTION

This Document can be accessed online at:

https://www.princeedwardisland.ca/sites/default/files/publications/full_final_highway_bridge_spec_2024_0.pdf

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. CONTACTS

For items related to the highway structure replacement, please contact:

Darrell Evans, P.Eng.
Asst. Director, Capital Projects
PEI Dept. of Transportation & Infrastructure
djevans@gov.pe.ca

For items related to the water-control structure replacement and pond dredging, please contact:

Carter Livingstone, P.Eng.
Project Manager
Town of Stratford
clivingstone@townofstratford.ca

3. TENDER SUBMISSION CONTENTS

Tender submission shall include all 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

4. SECTION 102.07 - BID AND PERFORMANCE SECURITY

The stipulated Bid Security amount shall be two hundred thousand dollars (\$200,000).

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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).

5. 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.

6. ALTERNATE BIDS

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

7. DEPARTMENT CHARLOTTETOWN STORAGE YARD – ENTRY

Contractor entry into the Department's Charlottetown Storage Yard (Brackley Point Road) 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.

8. SITE VISIT

The Department recommends that bidders visit the site during the tender period to become familiar with and consider 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 consider 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.

9. 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

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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.

10. SECTION 102.13 - SCHEDULING OF THE WORK

The number of working days stipulated for this Contract is ninety (90) 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. The work schedule shall meet the Town of Stratford's Noise and Nuisance Bylaw.

Note that construction must start on site on 27 May 2024. The bridge/roadway (entire width) must be opened to traffic no later than 31 August 2024, with no interruption to traffic after this date. The overall project must be completed no later than 30 September 2024.

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.

Note: The above-proposed schedule is contingent on The Department receiving regulatory permits prior to construction start.

Prior to the 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, guardrails, etc.). The Final Schedule shall indicate applicable timelines 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

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submit to the Department an updated Construction Schedule as deems required to reflect any circumstances that may cause the need for an updated Schedule.

11. 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.

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, man hours, 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 costs 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 does not 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.

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12. 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.

13. 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.

14. 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 the 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. The determination of the extent of damage shall be at the discretion of the Department. Reinstatement shall be reasonable to that condition prior to project start.

15. 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 and the Town of Stratford upon request.

Any related permits applied for in advance by the Department or the Town of Stratford on behalf of the successful Contractor are made solely in the interest of the project schedule. Any permits issued to the Department or the Town 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.

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The Contractor shall develop and submit to the Department (for the Department's review and comment prior to the project's startup meeting with the Contractor) an Environmental Control Drawing(s) indicating the type and extent of each environmental control. This drawing shall be developed based on the Contractor's proposed work methods and procedures, coincident with the work activities within the time frame of the project.

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 environmental controls as a minimum shall be as indicated on the Environmental Control Drawings to be provided following award.

The Contractor shall be responsible for monitoring (on a daily basis, including non-workdays 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.

16. 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 issue 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

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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 develop and submit to the Department a Safe Work Plan indicating work procedures and methods to safely work in the area of the existing energized overhead electrical conductors.

The Contractor shall develop and submit to the Department a site-specific Safe Work Plan (including an associated Rescue Plan) in accordance with the PEI Occupational Health and Safety Act and Regulations.

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 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 toilets during construction.

The Contractor, including its employees and sub-contractors, shall abide by the PEI Public Service

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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. It shall also be noted that the Town of Stratford has a Smoke Free Bylaw prohibiting smoking in all public parks.

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/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.

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 and the Town of Stratford the extent of such.

Work shall include but not be limited to the cutting of trees, delimiting, 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. The 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.

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19. SECTION 907 - VEHICLE CONFIGURATIONS AND RESTRICTIONS

There are no available traffic counts on Keppoch Road; however, the contractor shall maintain two-way traffic at all times during construction.

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 maneuver 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 maneuver 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 the Contractor with an AutoCAD file indicating the results (coordinates and ground elevations) of the 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.

21. SECTION 20307 – EXCAVATION: EARTH WASTE

The unit rate bid for this item shall include the excavation, loading, transportation, any environmental

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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 maneuver trucks or equipment within the site. No additional compensation shall be entertained for any part thereof required to conduct the work as intended.

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 the Contractor with 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. 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 temporary and reinstated 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.

23. 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.

24. 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

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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.

25. SECTION 21302 - RANDOM RIP-RAP R25

The unit bid price for this item shall include the supply and placement of random R25 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.

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.

27. 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.

28. BID ITEM # 50101 – ASPHALT CEMENT

For bidding purposes, asphalt cement on this project shall be Type 58H-28 and shall be in accordance with Table X1 of AASHTO M332.

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29. BID ITEM # 70405 – COLD PLANE & STOCKPILE: RAP

The existing asphalt pavement along both approach roads and up to the project limits shall be cold planed full depth. The RAP (reclaimed asphalt pavement) shall be transported and stockpiled by the Contractor at the Department's Brackley Point Road 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 the extent of cold-planing required with the Department prior to starting any cold-planing activities.

30. SECTION 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.

31. 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 coordinate 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.

32. 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 two (2) 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.

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33. BID ITEM # 90802 – TRAFFIC CONTROL PLAN

This item includes the supply of a comprehensive traffic control plan that allows for traffic restrictions on Keppoch Road during the works. The contractor is required to maintain two lanes of traffic at all times.

The traffic control plan shall (as a minimum) follow the Temporary Workplace Traffic Control Manual as published by DTI (https://www.princeedwardisland.ca/sites/default/files/publications/trafficcont_cr.pdf). The contractor shall submit his plan for review by the department at least three weeks prior to commencing the work. It is recommended that the contractor liaise directly with departmental staff during the planning stages prior to submission.

34. BID ITEM # 90803 – TRAFFIC CONTROL DEVICES

The lump sum price bid for this item shall include for the supply, installation, maintenance, relocation, and removal of temporary traffic control devices required for traffic control to conduct the works on Keppoch Road in Stratford. This shall include, but not necessarily be limited to; traffic cones; candles; barriers; traffic delineation boards; arrow boards; and all equipment required to ensure that the temporary traffic control devices are available during construction.

These shall be included in the traffic control plan for review by the department.

35. BID ITEM # 90804 – TRAFFIC CONTROL PERSONNEL

The lump sum price bid for this item shall include for the provision of traffic control personnel required for traffic control in accordance with the Occupational Health and Safety Act and with the Department's Temporary Traffic Control Manual, to conduct the works on Keppoch Road in Stratford.

These shall be included in the traffic control plan for review by the department.

36. BID ITEM # 110102 – CONCRETE SIDEWALK

The unit price bid for this item shall include the provision of a integral curb section as well as welded-wire-fabric reinforcement as indicated on the drawings. Refer to Section 1103 for specification details.

37. BID ITEM # 130004 – DREDGING

Dredging shall be conducted according to the plans and the Watercourse and Wetland Alteration Permit. The Contractor shall be responsible for all associated environmental controls as shown on the

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plans and as required to contain the sediment run-off at the dredge spoil disposal location, removal and disposal of dredge spoils at the location indicated on the plans, decanting, regrading and topsoil and seeding as required.

38. 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.

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:

Corrugated metal pipe sections, existing catchbasins, existing storm sewer pipes, and all other sections and materials associated with the existing structures, **excluding the existing water control structure, which shall be covered under Bid Item 136183.**

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.

The Contractor shall submit to the Department the Contractor's proposed Demolition Plan for the Department's review. Demolition Plan to address as a minimum:

- a) Workplace Safety measures as they relate specifically to demolition activities;
- b) Specific measures (EG. nets, tarps, vacuuming, sweeping, collection system, etc.) to prevent any demolished material from entering the watercourse;
- c) Specific retrieval methods and types of equipment (EG. excavator, rake, boat, raft, etc.) to be used in the event some demolished material enters the watercourse.

The Department recommends that bidders visit the site during the tender period to become familiar with it and shall account for the existing structure's system and all relevant surrounding conditions. Successful Contractor to have considered 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.

39. BID ITEM # 130831 – CONCRETE BARRIERS

The unit rate bid price shall be full compensation for loading concrete barriers at the Brackley Point Road Storage Yard, transport to site, offloading on site, placement as per Traffic Control Plan, handling/repositioning on site as required, handling/repositioning on site to channel traffic, handling/repositioning on site to accommodate any equipment setup or material delivery to the site, site loading, transport back to the Brackley Point Road Yard, and offloading at the Storage Yard.

Note that the Contractor shall confirm with DTI prior to loading at the Storage Yard the quantity of

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barriers required on site.

40. 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.

The 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 the 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.

41. BID ITEM # 131056 – BACKFILL CONCRETE STRUCTURE

This cost item is for backfill the new highway structure, even though its title indicates Backfill Concrete Structure. Refer to Specification Section 1365 for specifications and measurement and payment details.

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 Engineered Fill.

42. 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 culvert structure layout, pipe culvert 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.

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

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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 R-size, 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.

43. BID ITEM # 136183 – CULVERT CONTROL STRUCTURE

This cost item pertains to all costs associated with the removal of the existing water control structure and the complete fabrication of a cast-in-place concrete water control structure. The item shall include, but not be limited to the following: the demolition, removal and disposal of the existing water control structure; the supply of shop drawings for reinforcement, handrails, formwork and falsework details; mill certificates for all steel; supply of concrete mix design and curing methods; supply, placement and compaction of granular base; construction of formwork and falsework; supply and installation of reinforcing steel; supply, placement and curing of concrete; the fabrication, supply and installation of hot-dip galvanized handrails; the supply, placement and compaction of backfill against structure; and all other ancillaries required for the complete construction of the new water-control structure.

Refer to Schedule 'F' for drawing details and Sections 1301, 1302, 1304, 1336, 1361, 1365, 1383, 1384 and 1385 for detailed specifications.

44. BID ITEM # 136270 – STEEL COFFERDAM

This cost item pertains to all costs associated with the design, supply, installation, excavation within and eventual removal of temporary steel-sheet-pile wall cofferdam. This item shall include the provision of engineering drawings to the Town and the Department for review prior to construction. This bid item shall include the provision of all equipment necessary to de-water inside the cofferdam in order to facilitate the construction of the water control structure and associated pipe works. The

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water shall be contained to permit silt and sediment settlement prior to discharge into any watercourse. The containment site location and construction shall be reviewed with the Town and the Department.

Refer to Sections 1321, 1322 and 1383 for detailed specifications. The excavated material from within the cofferdam shall be considered dredge material and shall be disposed of at the disposal site located on the dredging plans.

45. BID ITEM # 136484 – TEMP. U/G UTILITY SUPPORTS

This cost item pertains to all costs associated with the design, supply, installation, and removal of temporary support structures for the underground utilities identified in the drawings. This shall include, but not be limited to: liaison with each utility for locates and general discussion on support structures; the supply of engineered drawings to the appropriate utility for review; the fabrication and monitoring of support structures throughout the duration of the project; the removal of temporary support structures; and all other ancillaries required to complete the work and sufficiently support the utilities to the satisfaction of the utility owner.

46. BID ITEM # 137913 – STRUCTURE: SUPPLY & INSTALL

This cost item pertains to all costs associated with the design, supply, and installation of a pre-cast concrete pipe structure as indicated on the drawings.

Refer to Schedule 'F' and Sections 1330, 1382, and 1383 for detailed specifications.

47. BID ITEM # 138185 – TRAFFIC CONTROL SUPERVISOR

The hourly bid price for the above listed item shall be full compensation for the Traffic Control Supervisor to ensure that all devices, personnel, etc. are being deployed as intended in accordance with the Traffic Control Plan or adjusted as required in the field.

48. 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 public 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.

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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 colour requirement has been phased in and will now be implemented by the Department.

The Department will be supplying and maintaining signage related to road closures and detours. All energy powered control devices (and associated equipment) related to the road closure and detour shall be supplied (including energy supply, hookup, and decommissioning) and maintained by the Department.

49. 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 timeframe. 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 subcontractors, suppliers, etc.. The frequency of meetings will be maximum weekly during the initial project stages, and biweekly throughout the remainder of the project. This shall be considered incidental to the project. No additional costs shall be entertained for this item.

50. SECURITY

Security shall be considered incidental to the work and shall not be measured or paid for.

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:

Item Description and Price	Estimated Quantity	Contractor Total Price
CLEARING		
Section: 201 Item: 20101		
-----	PER ha	
-----	PER ha	.50 \$
-----	100	-----
GRUBBING		
Section: 202 Item: 20201		
-----	PER ha	
-----	PER ha	.50 \$
-----	100	-----
EXCAV:EARTH SURPLUS/SUITABLE		
Section: 203 Item: 20306		
-----	PER M3	
-----	PER M3	2,600.00 \$
-----	100	-----
EXCAVATION: EARTH WASTE		
Section: 203 Item: 20307		
-----	PER M3	
-----	PER M3	2,500.00 \$
-----	100	-----
BORROW: SELECT		
Section: 206 Item: 20602		
-----	PER Tonnes	
-----	PER Tonnes	7,000.00 \$
-----	100	-----
GRANULAR BASE: A		
Section: 207 Item: 20701		
-----	PER Tonnes	
-----	PER Tonnes	620.00 \$
-----	100	-----
		Total Carried Forward \$ -----
		From Previous Page
		Total Carried Forward \$ -----

Schedule C

schedule of item for tender

Item Description and Price	Estimated Quantity	Contractor Total Price
CLASS D GRAVEL		
Section: 207 Item: 20709		
-----	PER Tonnes	
-----	PER Tonnes	100.00 \$
-----	100	-----
TOPSOIL: LANDSCAPING		
Section: 212 Item: 21201		
-----	PER Tonnes	
-----	PER Tonnes	60.00 \$
-----	100	-----
RANDOM RIP-RAP: R5		
Section: 213 Item: 21301		
-----	PER Tonnes	
-----	PER Tonnes	100.00 \$
-----	100	-----
RANDOM RIP-RAP: R25		
Section: 213 Item: 21302		
-----	PER Tonnes	
-----	PER Tonnes	50.00 \$
-----	100	-----
RANDOM RIP-RAP: R50		
Section: 213 Item: 21303		
-----	PER Tonnes	
-----	PER Tonnes	50.00 \$
-----	100	-----
FILTER FABRIC		
Section: 218 Item: 21801		
-----	PER Square Metr	
-----	PER M2	150.00 \$
-----	100	-----
		Total Carried Forward \$ -----
		From Previous Page
		Total Carried Forward \$ -----

Item Description and Price	Estimated Quantity	Contractor Total Price
STORM SEWER: 450MM DWP		
Section: 301 Item: 30137		
-----	PER Metres	
-----	PER M	30.00 \$
-----	100	-----
STORM SEWER:300MM DWP		
Section: 301 Item: 30142		
-----	PER Metres	
-----	PER M	40.00 \$
-----	100	-----
CATCH BASIN: 1500MM PCP		
Section: 302 Item: 30204		
-----	PER unit	
-----	PER unit	1.00 \$
-----	100	-----
ASPHALT CEMENT		
Section: 501 Item: 50101		
-----	PER Tonnes	
-----	PER Tonnes	25.00 \$
-----	100	-----
ASPHALT BASE: A		
Section: 603 Item: 60301		
-----	PER Tonnes	
-----	PER Tonnes	40.00 \$
-----	100	-----
ASPHALT SEAL: B		
Section: 603 Item: 60350		
-----	PER Tonnes	
-----	PER Tonnes	280.00 \$
-----	100	-----
		Total Carried Forward \$
		From Previous Page
		Total Carried Forward \$

Item Description and Price	Estimated Quantity	Contractor Total Price
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	40.00 \$
-----	\$	
-----	100	_____
HYDROSEEDING		
Section: 803 Item: 80302		
-----	PER Square Metr	
-----	PER M2	150.00 \$
-----	\$	
-----	100	_____
MULCHING		
Section: 805 Item: 80501		
-----	PER Square Metr	
-----	PER M2	300.00 \$
-----	\$	
-----	100	_____
SILT FENCE: TYPE 1		
Section: 806 Item: 80602		
-----	PER Metres	
-----	PER M	50.00 \$
-----	\$	
-----	100	_____
SILT FENCE: TYPE 2		
Section: 806 Item: 80607		
-----	PER Metres	
-----	PER M	20.00 \$
-----	\$	
-----	100	_____
		Total Carried Forward \$ _____
		From Previous Page
		Total Carried Forward \$ _____

Schedule C

schedule of item for tender

Item Description and Price	Estimated Quantity	Contractor Total Price
FLEXBEAM GUIDERAIL:REMOVA		
Section: 902 Item: 90201		
-----	PER Metres	
-----	PER M	50.00 \$
-----	100	-----
FLEXBEAM GUIDERAIL: ERECT		
Section: 903 Item: 90301		
-----	PER Metres	
-----	PER M	100.00 \$
-----	100	-----
TRAFFIC CONTROL PLAN		
Section: 908 Item: 90802		
-----	PER hrs	
Forty Dollars and 00 Cents	40.00 PER hrs	20.00 \$
-----	100	800.00
TRAFFIC CONTROL DEVICES		
Section: 908 Item: 90803		
-----	PER L.S.	
-----	PER L.S.	1.00 \$
-----	100	-----
TRAFFIC CONTROL PERSONNEL		
Section: 908 Item: 90804		
-----	PER L.S.	
-----	PER L.S.	1.00 \$
-----	100	-----
CONCRETE SIDEWALK		
Section: 1101 Item: 110102		
-----	PER Square Metr	
-----	PER M2	45.00 \$
-----	100	-----

Total Carried Forward \$ _____

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Total Carried Forward \$ _____

Schedule C

schedule of item for tender

Item Description and Price	Estimated Quantity	Contractor Total Price
DREDGING		
Section: 1300 Item: 130004		
-----	PER L.S.	
-----	\$ -----	1.00 \$
-----	100	-----
SITWORK DEMOLITION & REM		
Section: 1308 Item: 130812		
-----	PER L.S.	
-----	\$ -----	1.00 \$
-----	100	-----
CONCRETE BARRIERS		
Section: 1308 Item: 130831		
-----	PER unit	
-----	\$ -----	150.00 \$
-----	100	-----
GENERAL MOBILIZATION\DEMOBILIZATION		
Section: 1308 Item: 130876		
-----	PER L.S.	
-----	\$ -----	1.00 \$
-----	100	-----
BACKFILLING CONCRETE STRUCTURE/CLAS		
Section: 1310 Item: 131056		
-----	PER Tonnes	
-----	\$ -----	300.00 \$
-----	100	-----
SIDEWALK REMOVAL		
Section: 1315 Item: 131520		
-----	PER L.S.	
-----	\$ -----	1.00 \$
-----	100	-----
		Total Carried Forward \$ -----
		From Previous Page
		Total Carried Forward \$ -----

Item Description and Price	Estimated Quantity	Contractor Total Price
PROJECT LAYOUT		
Section: 1351 Item: 135101		
-----	PER L.S.	
-----	\$	1.00 \$
-----	100	-----
CULVERT CONTROL STRUCTURE		
Section: 1361 Item: 136183		
-----	PER L.S.	
-----	\$	1.00 \$
-----	100	-----
TEMPORARY LIGHTING		
Section: 1362 Item: 136262		
-----	PER days	
-----	\$	90.00 \$
-----	100	-----
STEEL COFFERDAM		
Section: 1362 Item: 136270		
-----	PER L.S.	
-----	\$	1.00 \$
-----	100	-----
TEMP. U/G UTILITY SUPPORTS		
Section: 1360 Item: 136484		
-----	PER L.S.	
-----	\$	1.00 \$
-----	100	-----
STRUCTURE: SUPPLY & INSTALL		
Section: 1379 Item: 137913		
-----	PER L.S.	
-----	\$	1.00 \$
-----	100	-----

Total Carried Forward \$ -----

From Previous Page

Total Carried Forward \$ -----

Project Number: 6630

KEPPOCH ROAD STRUCTU

-19447

Estimate: 5332

Length: 0.500 ki

Department of Transportation and Infrastructure

Province of Prince Edward Island

Schedule C

schedule of item for tender

Page 8 of 8

12 Mar 2024

Item Description and Price	Estimated Quantity	Contractor Total Price
----------------------------	--------------------	------------------------

TRAFFIC CONTROL SUPERVISOR

Section: 1381

Item: 138185

-----	PER hrs	675.00 \$	_____
-----	\$	PER hrs	_____
-----	100	675.00 \$	_____

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 and BRIDGE CONSTRUCTION

Contractor's Hazard Assessment Form

Pre-Construction Contractor Safety Checklist Form

Contractor's Safety Statement Form

Daily Traffic Control Checklist

Eastech Geotechnical Investigation Report # 230105, dated February 2, 2023

Infrastructure Canada's Insurance Requirements

Wetland/Watercourse and Buffer Zone Activity Permit

DTI Diversion Road Schematic drawing (11x17)

Design Drawings SP-1, SP-2, SP-3, F-1 and F-2 inclusive (24 x 36).

CONTRACTORS HAZARD ASSESSMENT FORM

This Hazard Assessment Form is to be completed by the Contractors Project Manager or Designate. All Employees, Subcontractors and Visitors *Shall* be advised of all hazards noted and shall be advised of any hazards that develop during the project.

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

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

Administration Checklist	Circle	Corrective Date if "NO"	Generic Hazard Identification	Circle	Corrective Date if "NO"
OH&S Act on site	Y N		Hydro/Communication lines	Y N N/A	
Construction & Safety Regs on site	Y N		Underground utilities	Y N N/A	
Other Applicable 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	
Employee orientation complete	Y N		Applicable Signage in Place	Y N N/A	

Identified Hazard	Priority	Required Action	Completed By	Date & Initial

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

Other Hazards/Considerations:

Comments:

Inspected 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 (DTI) 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. DTI will ask for and may require a copy of that policy and program.
2. **Safety Representative:** Each contractor is required to advise DTI 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 DTI 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.

Contractor Safety Checklist

9. **Tool Box Talks:** Each contractor is required to conduct weekly safety meetings with their forces and advise DTI 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 DTI.
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.

Contractor Safety Checklist

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 DTI 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 metres.
 - ☞ Full width platform if height over 3.0 metres. (PEI Regulations require double planks)
 - ☞ Full guardrails and toeboards.
 - ☞ Tied in three times base dimension or use of outriggers.
 - ☞ Engineered over 15 metres 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:** Installer's 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 DTI will not release any funds for payment until Workers Compensation Board Clearance Certificate has been received by DTI.

PRE-CONSTRUCTION CONTRACTOR SAFETY CHECKLIST

PROJECT: _____ DATE: _____ CONTRACTOR: _____

WORK BEING PERFORMED: _____

Print Name _____
Project Manager/Inspector

Print Name _____
Contractor Representative

(Sign) _____

(Sign) _____

✓ Means Yes

Means No

N/A Not Applicable

- | | |
|--|--|
| <p>1. Safety Policy Submitted <input type="checkbox"/></p> <p>2. Safety Representative <input type="checkbox"/></p> <p>3. Emergency Procedure Review <input type="checkbox"/></p> <p>4. Employee Orientation <input type="checkbox"/></p> <p>5. Written Safe Work Plan Submitted <input type="checkbox"/></p> <p>6. Personal Protective Equipment Review <input type="checkbox"/></p> <ul style="list-style-type: none"> • Hard Hats & Footwear • Safety Glasses • Hearing • Dust & Fumes <p>7. Fall Protection <input type="checkbox"/></p> <p>8. Housekeeping <input type="checkbox"/></p> <p>9. Tool Box Safety Talks (Weekly) <input type="checkbox"/></p> <p>10. Material Handling/Storage <input type="checkbox"/></p> <p>11. Landing Platforms <input type="checkbox"/></p> <p>12. WHMIS Training Verification - MSDS Received <input type="checkbox"/></p> | <p>13. GFCI Requirements <input type="checkbox"/></p> <p>14. Accident/Incident Investigations Notification <input type="checkbox"/></p> <p>15. Verbal, Written, Gone <input type="checkbox"/></p> <p>16. Joint/Worker Safety Committee <input type="checkbox"/></p> <p>17. Fire Protection <input type="checkbox"/></p> <p>18. Guardrails <input type="checkbox"/></p> <p>19. First Aider on Staff Name Supplied <input type="checkbox"/></p> <p>20. Visitors & Safety Equip. <input type="checkbox"/></p> <p>21. Task Lighting <input type="checkbox"/></p> <p>22. Swampers/Riggers Competency (in writing) <input type="checkbox"/></p> <p>23. Scaffolds <input type="checkbox"/></p> <p>24. Elevating Work Platforms <input type="checkbox"/></p> <p>25. Protruding Rebar Protection <input type="checkbox"/></p> <p>26. WCB Clearance Certificate <input type="checkbox"/></p> |
|--|--|

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

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:
Contractor:

Date:
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



GEOTECHNICAL INVESTIGATION REPORT

Kellys Pond Culvert Replacement

Stratford
Queens County
Prince Edward Island

Project # 230105
February 2, 2023

Prepared for:
Town of Stratford
234 Shakespeare Drive
Stratford, Prince Edward Island
C1B 2V8

Prepared By:
EastTech Engineering Consultants Inc.
1509 Bethel Road – PO Box 24010
Stratford, Prince Edward Island
C1B 2R5

Introduction

EastTech Engineering Consultants Inc. was retained by the Town of Stratford to complete a geotechnical investigation at the proposed location of a new culvert structure that is to be installed at Kellys Pond located off of the Keppoch Road in Stratford, Queens County, Prince Edward Island. The site location has been provided in Figure 1, which has been appended to this report. The proposed undertaking will involve the construction of a 51 meter long, 1.5 meter diameter concrete culvert structure supported by a precast or cast in place concrete strip foundation. A site plan showing the proposed new culvert structure has been included as Figure 2. The purpose of this geotechnical investigation was to collect detailed information pertaining to the soils, bedrock, and groundwater conditions on the site and to provide recommendations for the construction of the foundation of the building and general earthworks associated with the proposed undertaking.

Scope of Work

In agreement with the Town of Stratford, the following scope of work has been completed as a part of this geotechnical investigation:

- ✓ A review of the underground services was conducted prior to this investigation to identify any buried infrastructure that may present on the site and in the vicinity of the dig area.
- ✓ Two (2) geotechnical boreholes were put down on the site to collect geotechnical data for this investigation.
- ✓ A geotechnical report outlining the findings of this investigation, detailed test pit logs, and recommendations pertaining to the building foundation design & construction, roadway and parking lot design & construction, and general project earthworks has been included herein.

Site Description

The site is located to the east of Keppoch Road in Stratford, Queens County, Prince Edward Island. The site is currently used as a gravel parking lot associated with the Pond Side Park. Multiple underground stormwater, sewer, and water lines associated with the Town of Stratford's municipal infrastructure are present in the immediate vicinity of the proposed new culvert. A review of the historical aerial photographs of the site indicate that a building was present in the vicinity of the borehole locations that was removed at some point between 1958 and 1974. Based on conversations with Town of Stratford site staff, it is thought that this building may have been used as a lumber saw mill. An aerial photograph from 1935 showing the location of this structure has been included as Figure 3. The site gently slopes towards Kellys Pond.

Site Geology

The bedrock formations that are predominantly found in the province of Prince Edward Island consist of the characteristically red colored flat lying sedimentary deposits commonly referred to as the PEI Redbeds. The PEI Redbeds are a part of the Pictou Group of deposits that make up a section of the Maritime Plane and lie within the Appalachian Mountain System. The PEI Redbeds can be broken down into four cyclic sequences generally comprised of conglomerate, sandstone, and siltstone, from the Late Pennsylvanian to Early Permian ages (*i.e.*, formed 286 million years ago to 320 million years ago) which fine upward (*i.e.*, conglomerate at the base and siltstone at the top), with the oldest deposits found along the south shore of the island and the youngest found along the north shore. The PEI Redbeds generally dip 1 – 3 degrees towards the northeast.

Bedrock in Prince Edward Island is generally covered by a thin drift of Ground Morain or Basal Till with occurrences of Residual, Ablation Till, and minor Glaciofluvial and Marine Deposits. Basal Till, which covers approximately 75% of the province are often local in origin and can be generally described as reddish brown, strongly acid, and compact to dense soils further defined by their Clay and Silt content.

An initial review of available soils information for the area revealed that the natural surficial soils identified on the site consist of the Charlottetown type soils, which are described as moderately coarse textured, moderately well to well draining, moraine, ablation, or residual Glacial Till deposits formed on gently to moderately undulating to rolling relief (Soils of Prince Edward Island – Agriculture Canada [1988]).

Geotechnical Site Work

On Wednesday January 25th, 2023 EastTech Engineering staff were on-site to complete the site work for this geotechnical investigation. Two (2) geotechnical boreholes were put down on the site to provide a representative indication of the geological and hydrogeological conditions along the proposed alignment of the new culvert structure. The boreholes were put down to a maximum depth of 9.15 m using a trailer mounted CME45 rotary drill provided by Lantech Drilling Services under the direction of Cale Surins, *EIT*, of EastTech Engineering. A borehole location plan has been included with this report as Figure 4.

Summary Site Findings

Soils encountered during this geotechnical investigation can be generally described as Fill (Loose to Compact Reddish Brown Silty Sand with Traces of Gravel, Cobbles, & Wood Debris) overlying a deposit of Glacial Till generally described as Compact Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles. Wood was encountered between the Fill and Glacial Till deposit in borehole BH2 at a depth of 3.05 m, which may be associated with a timber foundation from the former lumber mill that occupied the site. Sandstone Bedrock was encountered at depths of 8.18 m and 7.42 m in boreholes BH1 & BH2, respectively. Groundwater was encountered at depths ranging from 1.09 m – 2.18 m.

A more detailed account of the sub-surface conditions that were encountered in this investigation can be found in the test pit logs that have been appended to this report.

Laboratory Analysis of Site Soils

Representative soil samples were collected from several of the test pit locations and tested for field moisture content and particle size analysis in EastTech Engineering’s soils laboratory. The results off this analysis are summarized in the table below. The Glacial Till material that was identified in this investigation is predominantly comprised of Sand & Silt sized particles with varying amounts of Gravel sized particles. Additional information regarding the particle size analysis tests can be found in the laboratory reports which have been appended to this report for your review.

Sample Location	Sample Depth	Material	Field Moisture Content (%)	% Gravel	% Sand	% Silt & Clay
BH1	5.49-6.10 m	GLACIAL TILL – Silty Sand with Some Gravel and Traces of Cobbles	19.6	14.2	57.0	28.8
BH2	5.49-6.10 m	GLACIAL TILL – Silty Sand with Some Gravel and Traces of Cobbles	19.3	17.8	53.4	28.7

Site Preparation

Site preparation should involve the removal of all existing Fill materials and Wood Debris to the undisturbed Glacial Till deposit. All excavation walls should be cut back and sloped as per applicable PEI Occupational Health & Safety Regulations. The Glacial Till bearing surface should be inspected under the direct supervision of the geotechnical consultant. Any soft or deformable areas should be removed and replaced with compacted structural fill at the discretion of the geotechnical consultant. A gravel base consisting of a minimum of 150 mm Class A Gravel, as per PEIDTI requirements, should be placed at the base of the excavation. The granular base material should be compacted to 100% of its Standard Proctor Dry Density at optimum moisture content.

Efforts should be made to prevent surface water from Kellys Pond from infiltrating the excavation. Pumping of the excavation will also be required to control groundwater from infiltrating the excavation. If groundwater levels cannot be controlled sufficiently to allow for the placement and compaction of Class A Gravel as the granular base, Class D Drainage Gravel may be used as a substitute granular base material.

Foundation Design Considerations

For limit state design (NBCC 2015), a cast in place or precast concrete strip footing placed on the undisturbed Glacial Till deposit or supported by a Class A Gravel granular base material may be designed with a factored resistance of 500 kPa at the Ultimate Limit State (ULS). A maximum recommended bearing resistance of 250 kPa is recommended for concrete strip footing for the above noted bearing soils for Serviceability Limit State (SLS) design. The allowable bearing capacities provided will limit maximum total and differential settlements from exceeding 25 mm and 15 mm, respectively.

Several common geotechnical parameters have been provided in the table below for the Glacial Till material, and for various types of structural fill materials that may be used for the culvert installation:

Geotechnical Parameter	Fill (Existing On-Site)	Select Borrow	Glacial Till	Class A Gravel	Class D Gravel
Angle of Internal Friction ϕ	30°	34°	32°	38°	38°
Active Earth Pressure Coefficient K_a	0.33	0.28	0.31	0.24	0.24
Passive Earth Pressure Coefficient K_p	3.00	3.57	3.23	4.20	4.20
Coefficient of Earth Pressure at Rest K_0	0.50	0.44	0.47	0.38	0.38
Undrained Shear Strength C_u (kPa)	0	0	0	0	0
*Field Saturated Unit Weight γ_{field} (kN/m ³)	19.5	20.2	21.2	23.6	21.7
Effective Unit Weight γ' (kN/m ³)	9.7	10.4	11.4	13.8	11.9
Interface Friction Angle for Precast Concrete $\delta_{concrete}$	12°	14°	14°	22°	18°
Interface Friction Angle for Steel δ_{steel}	10°	12°	12°	20°	16°

*Assume fill materials are compacted to minimum 98% Standard Proctor Dry Density

Site Seismic Classification

The proposed residential buildings may be designed using a Site Seismic Classification of Class “D” as per the National Building Code of Canada building requirements (NBCC 2015).

Erosion Control Parameters

Soil samples were collected from the geotechnical boreholes and particle size distribution, which was used to estimate a site-specific K-Value that is a required input for the *Revised Universal Soil Loss Equation for Application in Canada* (RUSLEFAC), a standardized method for designing and reviewing erosion sediment control plans. The RUSLEFAC system is recommended for use for all new developments undertaken within the Town of Stratford. For the purposes of this project, a K-Value of 0.025 may be used for sediment control plan design purposes using the RUSLEFAC system.

Winter Construction Activities

If construction activities are to be conducted during winter months or during periods when sub-zero temperatures are encountered, additional efforts must be made to ensure that all insitu bearing soils and Structural Fill Materials (*i.e.*, Building Pad materials, granular base, granular sub-base, *etc.*) are not subject to freezing conditions. The installation of winter shelters, heating sources, or other measures may be required to prevent bearing soils and structural fill materials from freezing. Efforts should also be made to ensure that structural fill materials are not subject to freezing conditions prior to their delivery to the site. Additional inspection and oversight by the geotechnical consultant is recommended during all winter construction activities associated with site earthworks, foundation installation, and parking lot / driveway construction.

Limitations

The recommendations provided in this report are based on the observations made during the field investigation, the site conditions at the time of the investigation, and our understanding of the projects geotechnical requirements as documented herein. Further excavation or investigation may reveal unforeseen issues that may influence our recommendations. Furthermore, weather and seasonal conditions may also alter the geotechnical conditions on the site. As such, EastTech Engineering Consultants Inc. should be notified immediately if the conditions as documented herein do not reflect the conditions on the site at the time of construction.

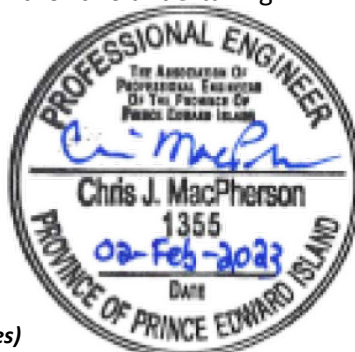
Conclusions & Closing Remarks

We trust that the information provided is sufficient for your current needs but do not hesitate to contact the undersigned if further clarification is required. We thank you for choosing EastTech Engineering Consultants Inc. as your geotechnical consultant for this undertaking.

Sincerely;



Chris MacPherson P.Eng. CESA
EastTech Engineering Consultants Inc.



Attachments: *Figures (4 pages)*
 Geotechnical Borehole Logs (2 pages)
 Particle Size Analysis Laboratory Test Reports (2 pages)
 Borehole and Test Pit Log Symbols Key & Glossary of Terms (6 pages)



Project	Geotechnical Investigation - Kellys Pond Culvert Replacement
Project #	230105
Client	Town of Stratford
Location	Keppoch Road, Stratford, Queens County, Prince Edward Island
Figure Title	Figure 1 - Project Location Map

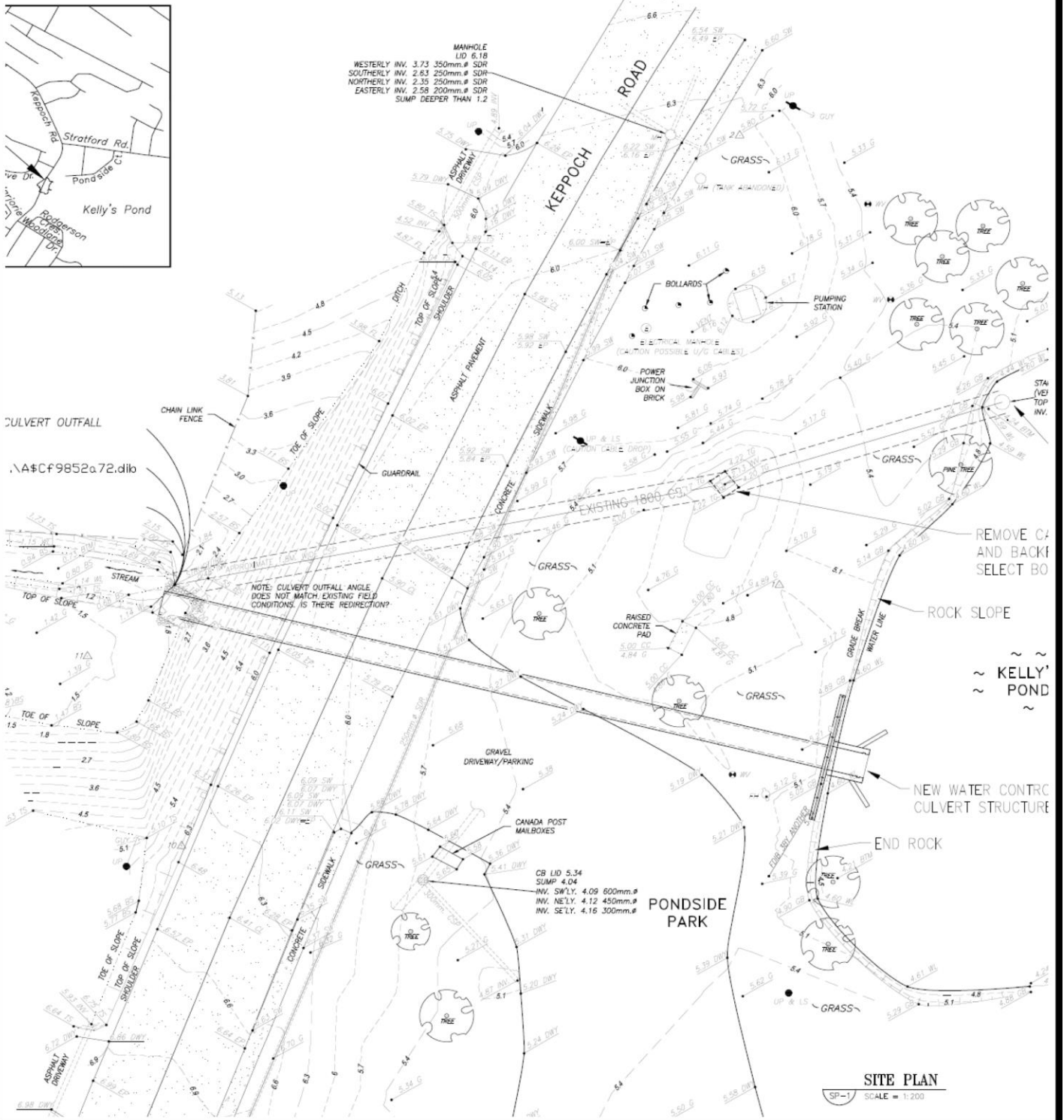


Comments

Location of site located off of the Keppoch Road in Stratford, Queens County, Prince Edward Island, which was the subject of this investigation.



Project	Geotechnical Investigation - Kellys Pond Culvert Replacement
Project #	230105
Client	Town of Stratford
Location	Keppoch Road, Stratford, Queens County, Prince Edward Island
Figure Title	Figure 2 - Site Plan with Proposed New Culvert Structure



Comments

Site plan with location of proposed new culvert structure to direct surface water from Kellys Pond below the Keppoch Road to the existing stream to the west of the site. Site plan provided by McCullough Environmental Engineering.



Project	Geotechnical Investigation - Kellys Pond Culvert Replacement
Project #	230105
Client	Town of Stratford
Location	Keppoch Road, Stratford, Queens County, Prince Edward Island
Figure Title	Figure 3 - Historical Aerial Image from 1935

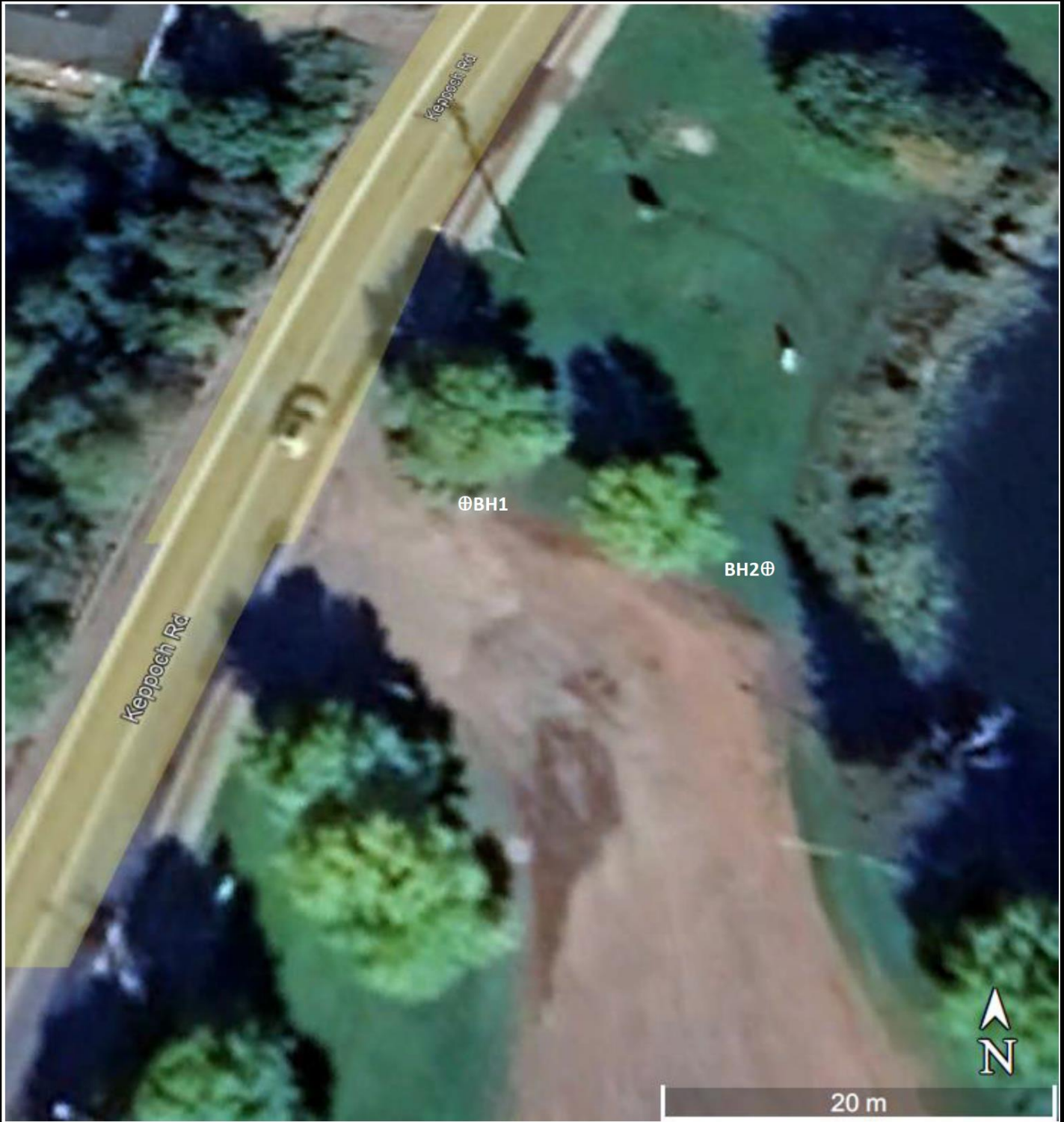


Comments

Historical aerial photograph from 1935 showing a structure present in the general area of the proposed new culvert structure location, which was thought to have been a lumber mill.



Project	Geotechnical Investigation - Kellys Pond Culvert Replacement
Project #	230105
Client	Town of Stratford
Location	Keppoch Road, Stratford, Queens County, Prince Edward Island
Figure Title	Figure 4 - Borehole Location Plan



Comments



Geotechnical Borehole BH1

(Page 1 of 1)

Geotechnical Investigation Kellys Pond Culvert Replacement Town of Stratford	Drill Date : January 25, 2023 Drilling Contractor : Lantech Drilling Services Drilling Equipment : CME 45 Trailer Mount Sampling Method : Split Spoon & Standard Auger Client : Town of Stratford	Logged By : C. Surins Reviewed By : C. MacPherson Elevation of Borehole : 5.25 m (Est. From Topo) Depth to Groundwater : 2.18 m Depth of Borehole : 9.15 m
	Keppoch Road, Stratford, PE File #230105	

Depth (m)	Elevation (m)	Description	Groundwater	Graphic	Sample Type	% Recovery	% Moisture	% Gravel	% Sand	% Fines	Cu (kPa)	Qu (kPa)	% RQD	Blow Count	SPT N-Value	N Value Graph			
																0	20	40	60
0.0		CRUSHED ASPHALT - With some Organics			SPT	33.3								5,9,8,7	17				
0.5		FILL - Compact Reddish Brown Silty Sand with Traces of Gravel & Cobbles			SPT	54.2								6,7,6,9	13				
1.0					SPT	33.3								7,5,8,4	12				
1.5					SPT	8.3								3,1,2,2	3				
2.0	3.05 m	FILL - Loose Reddish Brown Silty Sand with Traces of Gravel, Cobbles, & Wood Debris			SPT	12.5								24,3,1,1	4				
2.5					SPT	54.2								1,1,5,3	6				
3.0					SPT	91.7								6,5,7,5	12				
3.5	1.59 m	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT	54.2								3,6,4,4	10				
4.0					SPT	66.7								5,6,9,10	15				
4.5					SPT	37.5	19.6	14.2	57.0	28.8				7,8,8,9	16				
5.0					SPT	37.5								22,5,7,16	12				
5.5					SPT	62.5								20,17,16,15	33				
6.0					SPT	79.2								10,11,25,21	36				
6.5		BEDROCK - Reddish Brown Sandstone			SPT	62.5								28,50/4	REF				
7.0					SPT	4.2								50/1	REF				
7.5																			
8.0	2.93 m																		
8.5																			
9.0																			



Geotechnical Borehole BH2

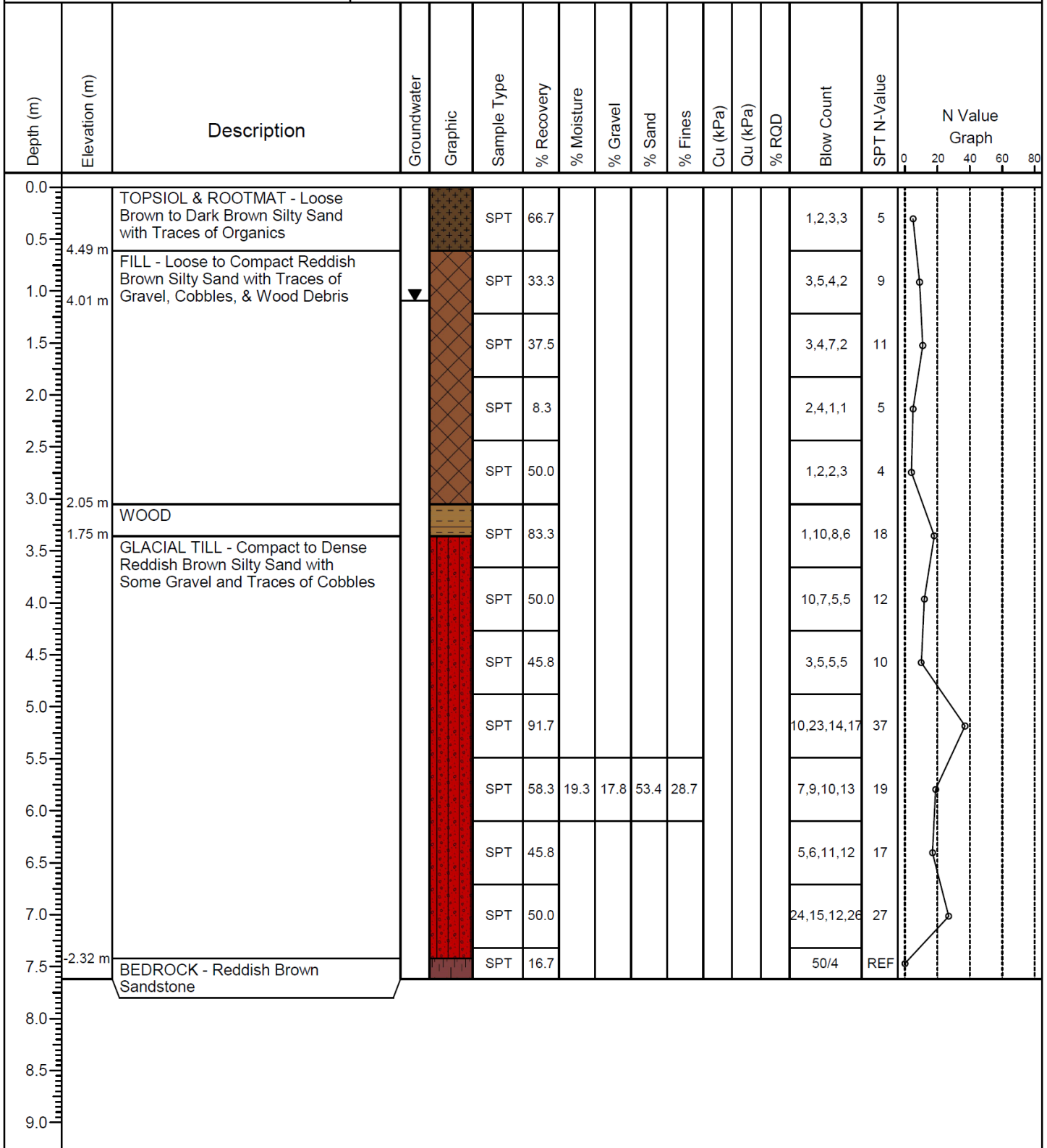
(Page 1 of 1)

Geotechnical Investigation
 Kellys Pond Culvert Replacement
 Town of Stratford

Drill Date : January 25, 2023
 Drilling Contractor : Lantech Drilling Services
 Drilling Equipment : CME 45 Trailer Mount
 Sampling Method : Split Spoon & Standard Auger
 Client : Town of Stratford

Logged By : C. Surins
 Reviewed By : C. MacPherson
 Elevation of Borehole : 5.10 m (Est. From Topo)
 Depth to Groundwater : 1.09 m
 Depth of Borehole : 7.62 m

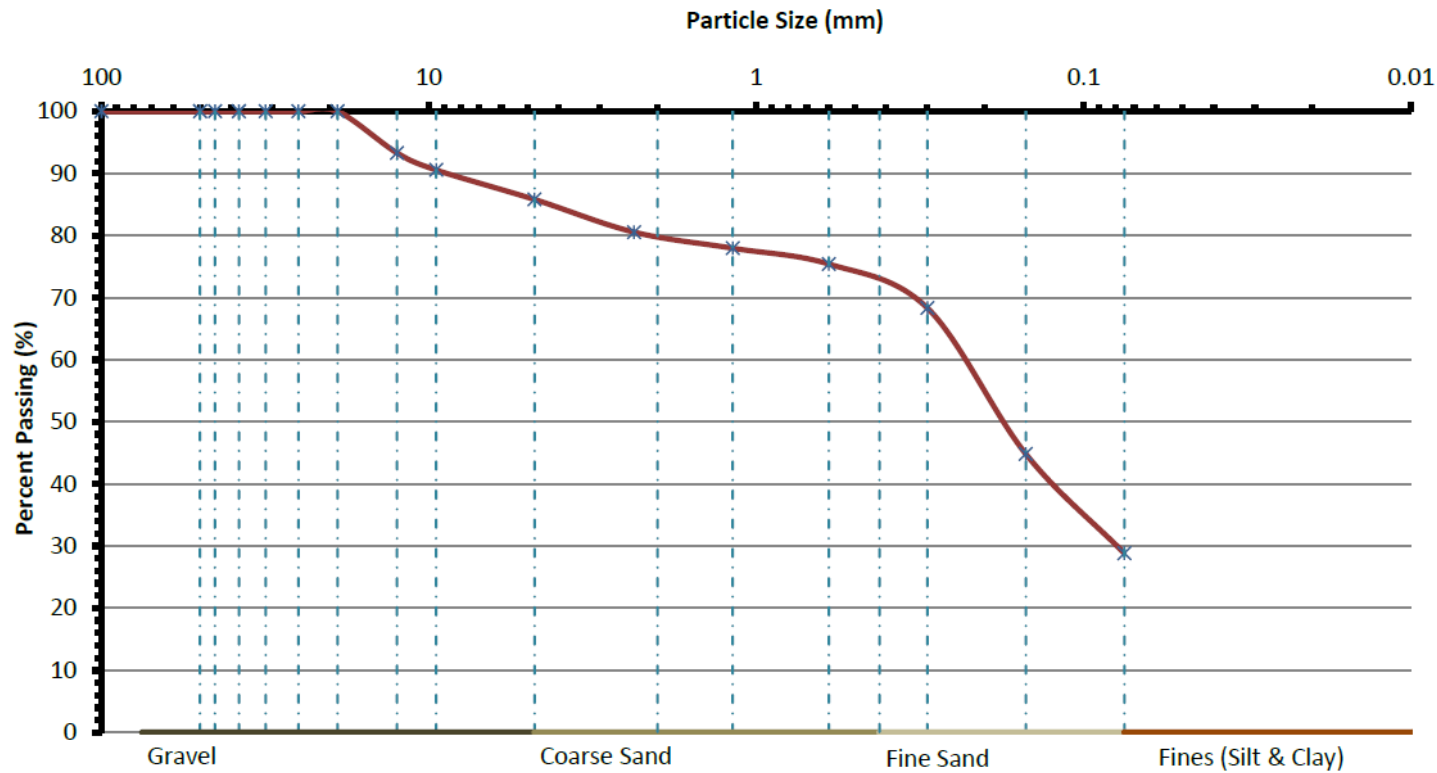
Keppoch Road, Stratford, PE
 File #230105



Particle Size Analysis Report



Project	Geotechnical Investigation - Kellys Pond Culvert Replacement	Project #	230105
Client	Town of Stratford	Material	Glacial Till
Location	Keppoch Road, Stratford, Prince Edward Island	Source	BH1 5.49-6.10 m
Contractor	Lantech Drilling Services	Sample ID	230105-01
Test Date	30-Jan-23	Sample Date	25-Jan-23



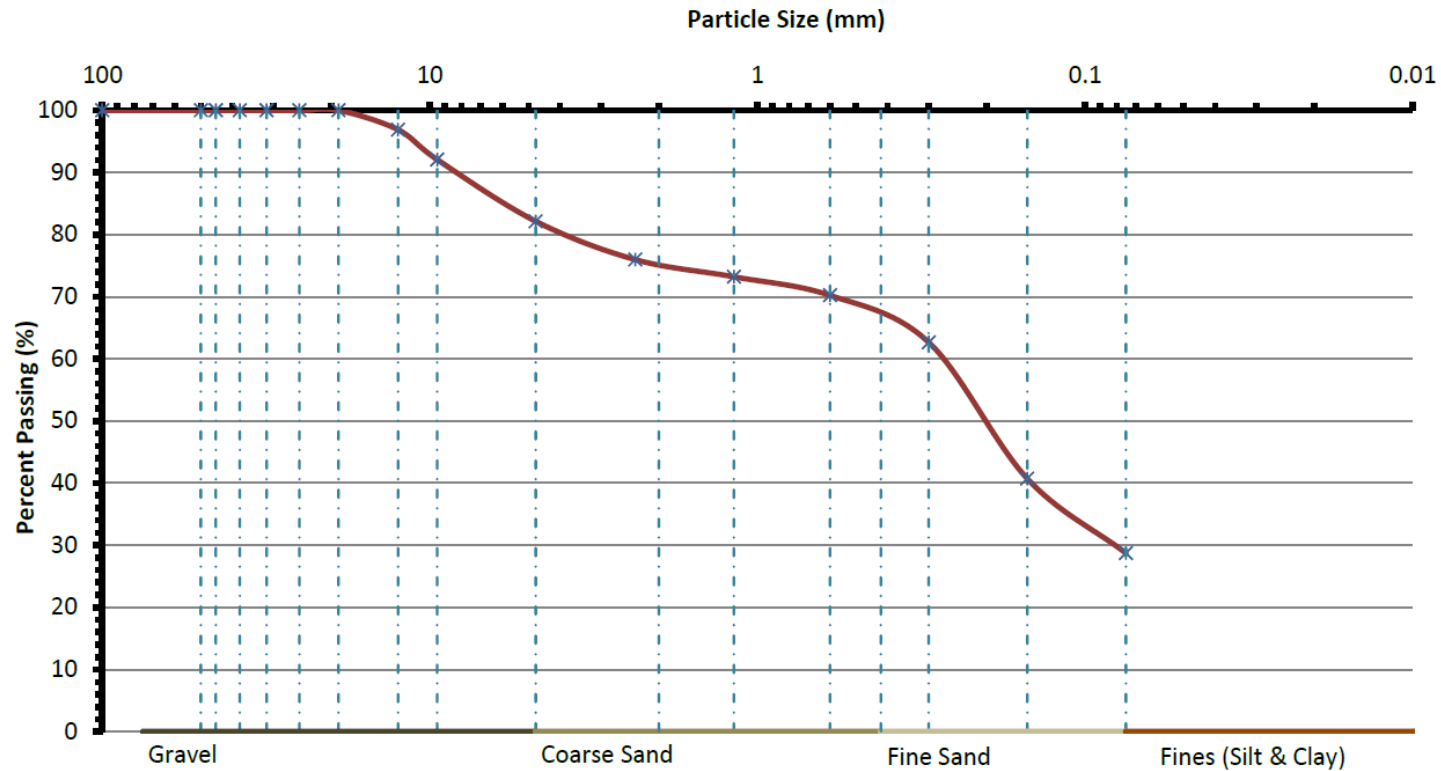
Partical Fraction	Sample Results	Sample Moisture Content
Gravel (4.75 mm - 300 mm)	14.2%	19.6%
Sand (0.075 mm - 4.75 mm)	57.0%	
Silt & Clay (< 0.075 mm)	28.8%	

Comments

Particle Size Analysis Report



Project	Geotechnical Investigation - Kellys Pond Culvert Replacement	Project #	230105
Client	Town of Stratford	Material	Glacial Till
Location	Keppoch Road, Stratford, Prince Edward Island	Source	BH2 5.49-6.10 m
Contractor	Lantech Drilling Services	Sample ID	230105-02
Test Date	30-Jan-23	Sample Date	25-Jan-23



Partical Fraction	Sample Results	Sample Moisture Content
Gravel (4.75 mm - 300 mm)	17.8%	19.3%
Sand (0.075 mm - 4.75 mm)	53.4%	
Silt & Clay (< 0.075 mm)	28.7%	

Comments

Borehole & Test Pit Log Symbols Key Descriptions & Glossary of Technical Terms

Soil Description

The description of physical characteristics of soil deposit which may include (but is not limited to) density, color, texture, particle size distribution, moisture content, odor, and geological structure that is observed. Particle size distribution is generally described based on % weight particle size as determined by ASTM Method D423, using the following sizes and descriptors:

Soil Classification by Particle Diameter Size		Soil Classification by Particle Size Distribution % Weight	
		Descriptor	% Particle Fraction
Boulders	>200 mm	Noun - Sand	>35% and main fraction
Cobbles	60 mm - 200 mm	"And" – And Sand	>35%
Gravel	2.0 mm – 60 mm	Adjective - Sandy	20% - 35%
Sand	0.075 mm – 2.0 mm	"Some" – Some Sand	10% - 20%
Fines (Silt & Clay Combined)	<0.075 mm	"Traces of" – Traces of Sand	1% - 10%
Silt	0.002 mm – 0.075 mm	Example: <i>Silty Sand with Some Clay and Traces of Gravel</i>	
Clay	<0.002 mm		

Standard Penetration (SPT) Test

Compaction Condition or Relative Density is commonly estimated using a Standard Penetration Test (SPT test) during a borehole investigation. The procedure involves driving a 51 mm diameter open end split barrel sampler by dropping a free falling 63.5 kg weight a vertical distance of 760 mm, with each drop of the weight constituting a blow. The number of blows required to drive the sampler 300 mm after an initial penetration of 150 mm is referred to as the SPT N value. SPT Tests in exploratory borings give a qualitative guide to the in-situ engineering properties and provide a sample of the soil for observations of physical characteristics and laboratory analysis. The relative density and undrained shear strength can be estimated from the SPT N-Values obtained at a given depth as shown in the tables below for cohesionless and cohesive soils, respectively.

Compactness Condition / Relative Density of Cohesionless Soils via Standard Penetration Test

Compactness Condition / Relative Density	SPT N-Index
Very Loose	0 – 4
Loose	4 - 10
Compact	10 -30
Dense	30 - 50
Very Dense	>50

Consistency & Undrained Shear Strength (c_u) of Cohesive Soils

Consistency	Undrained Shear Strength (c_u)	SPT N-Index	Field Identification*
Very Soft	<12 kPa	<2	Easily penetrated several cm by fist
Soft	12 – 25 kPa	2 - 4	Easily penetrated several cm by thumb
Firm	25 – 50 kPa	4 – 8	Penetrated several cm by thumb with moderate effort
Stiff	50 – 100 kPa	8 – 15	Readily indented by thumb but penetrated with great effort
Very Stiff	100 – 200 kPa	15 – 30	Readily indented by the thumb nail
Hard	>200 kPa	>30	Indented with difficulty by thumbnail

*Field identification methods are not suitable for the quantitative determination of soil strength as noted in the second column of this table.

Borehole & Test Pit Log Symbols Key

Descriptions & Glossary of Technical Terms

Test Pit Investigation

For small to mid sized structures which are to be supported by shallow foundations, a test pit investigation is often selected as an economical method of conducting a preliminary geotechnical field investigation. In this process, multiple test pits are excavated on a site using a backhoe or excavator. The physical characteristics of the in-situ soils can be documented, and samples of the materials can be collected for further observation and laboratory analysis. The presence and approximate depth of groundwater can also be determined during a test pit investigation if it is near the surface.

Dynamic Cone Penetrometer (DCP) Test

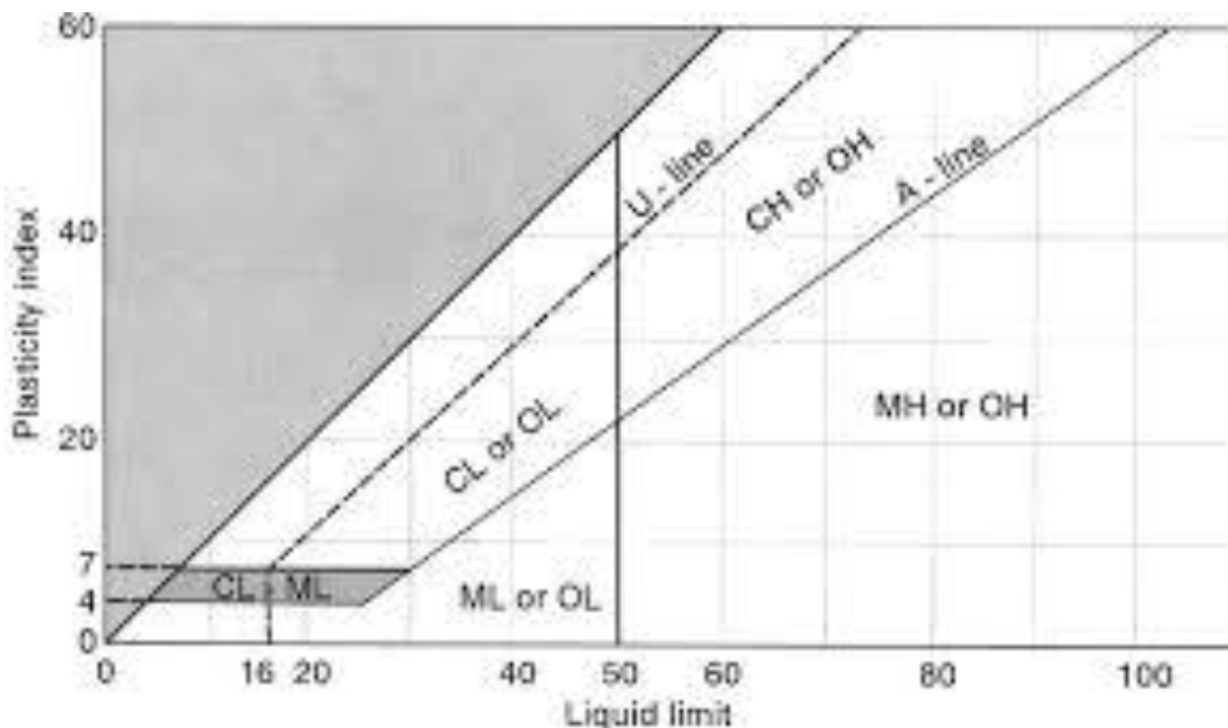
Dynamic Cone Penetration Tests involve driving a cone tipped probe of known geometry using a calibrated weight free falling a known distance. The number of blows required to drive the probe a given distance is recorded and the data is used to evaluate the strength of the soils. The test procedure is similar to a SPT Test; however, a soil sample cannot be retrieved due to the closed end tip on the probing device. The blow counts obtained from DCP tests are commonly used to determine an equivalent SPT N Value for a given soil or fill material present at depth.

Atterberg Limits

Atterberg Limits describe the range of water content or moisture content (w), called plasticity index $I_p = w_L - w_p$ over which a soil displays plastic behavior, where w_L and w_p are determined by ASTM Methods D423 & D424. The level of plasticity of a soil is defined as follows:

Low Degree of Plasticity	$w_L < 30$
Medium Degree of Plasticity	$30 < w_L < 50$
High Degree of Plasticity	$50 < w_L$

Atterberg limits can also be used to further determine soil texture and estimate particle size distribution and in cohesive and/or organic soils by plotting the plasticity index vs. the liquid limit as shown below.



Borehole & Test Pit Log Symbols Key Descriptions & Glossary of Technical Terms

Bedrock Description & Evaluation

Bedrock is the lithified rock that is typically found below in-situ sediments and soil deposits that are commonly referred to as regolith or overburden materials. Bedrock can be characterized by its mineralogical and/or chemical composition, and the process under which it has formed as an igneous, metamorphic, or sedimentary deposit. Bedrock can be further described by its physical characteristics (color, strength, odor, etc.) and any distinct geological features (bedding planes, striations, joint spacing/orientation, fractures, vein deposits, etc.) that are visible in a specimen. Any signs of visible weathering are also important to note in a bedrock sample, as it can influence the bearing capacity and geotechnical design requirements, particularly in the uppermost extents of the deposit that may have been exposed directly to glacial loading and movement in the past. Common terminology used to describe weathering and strength are described below:

Terminology	Description / Typical Observation
Highly Weathered	Significant decomposition and discoloration of rock visible, easily broken by hand around edges, signs of clay deposits and/or chemical weathering in most or all joints
Moderately Weathered	Discoloration often visible, rock is notably weakened at upper surface and along joints, minor to moderate deposits and/or chemical weathering visible in most joints
Slightly Weathered	Slight discoloration may be visible, locally soft areas in rock when compared to fresh rock, minor discoloring along joints
Unweathered	No indication of discoloration or fluid movement along exposed surfaces of rock beds
Weak	Crumbles with blow of pick end of rock hammer
Moderately Weak	Crumbles with moderate blow of rock hammer
Moderately Strong	Will indent 5 mm with moderate to strong blow of pick end of rock hammer
Strong	Specimen can be broken with a single strong blow of rock hammer
Very Strong	Requires several strong blows with rock hammer to break specimen

Rock Quality Designation (RQD) is a measure of the degree of fractures in rock cores, defined as the ratio of the accumulated lengths (minimum 100 mm) of sound rock over the total core length. The table below includes the terminology that is used in the description of bedrock samples based on the measured RQD of a bedrock sample collected and analyzed in a geotechnical field instigation.

% RQD	Rock Quality Description
0% - 25%	Very Poor – Severely Fractured & Broken
25% - 50%	Poor – Regular Jointing Along Bedding Planes
50% - 75%	Fair – Blocky Structure with Some Bedding Planes Intact
75% - 90%	Good – Majority of Bedding Plans & Structures Intact
90% - 100%	Very Good – Little to No Jointing or Weathering

More detailed evaluation of bedrock strength and bearing capabilities can be completed using the Rock Mass Rating (RMR) system where the Uniaxial Compressive Strength, RQD, Spacing of Discontinuities, Condition of Discontinuities, Orientation of Discontinuities, and Groundwater Conditions are assessed to determine an RMR Value ranging from 0-100.

Rock Mass Rating	Rock Quality Description	Rock Mass Rating	Rock Quality Description
0 – 20	Very Poor	60 – 80	Good
20 – 40	Poor	80 - 100	Very Good
40 - 60	Fair		

Borehole & Test Pit Log Symbols Key

Descriptions & Glossary of Technical Terms

Symbols for Geotechnical Parameters of Soil & Bedrock *As per the Canadian Foundation Engineering Manual 4th Edition (2006)*

Symbol	Term	Symbol	Term	Symbol	Term
Φ	Angle of Internal Friction	K_a	Active Earth Pressure Coefficient	ρ_{field}	Density Field Moisture Content
C_u	Undrained Shear Strength	K_p	Passive Earth Pressure Coefficient	ρ_{dry}	Dry Density
σ_c	Uniaxial Compressive Strength	K_o	Coefficient of Earth Pressure at Rest	ρ_{sat}	Saturated Density
σ_t	Tensile Strength	P_a	Active Earth Thrust	γ_{field}	Field Unit Weight
τ	Shear Stress	P_p	Passive Earth Thrust	γ'	Effective Unit Weight
ν	Poisson's Ratio	p_a	Active Earth Pressure	γ_{sat}	Saturated Unit Weight
e	Void Ratio	p_p	Passive Earth Pressure	k_s	Modulus of Subgrade Reaction
n	Porosity	w_L	Liquid Limit	I_p	Plasticity Index
w	Water/Moisture Content	w_p	Plastic Limit	I_L	Liquidity Index
k	Hydraulic Conductivity	w_s	Shrinkage Limit	I_c	Consistency Index
δ_{concrete}	Interface Friction Angle Concrete	δ_{steel}	Interface Friction Angle Steel	δ_{wood}	Interface Friction Angle Wood

Borehole & Test Pit Log Symbols Key

Descriptions & Glossary of Technical Terms

Glossary of Technical Terms *As per the Canadian Foundation Engineering Manual 4th Edition (2006)*

Soil – The portion of the earth’s crust which is fragmented, or such that some individual particles of a dried sample can be readily separated by agitation in water, including boulders, cobbles, gravel, sand, silt, clay, and organic matter.

Poorly Graded Soil – A soil that has a predominance of particles of one size.

Well Graded Soil – A soil that has a wide range of sized particles.

Shape & Surface Conditions of Particles – Description of particle geometry (e.g., platy, elongated, equidimensional, angular, sub-angular, sub-rounded, rounded, etc.)

Rock – a natural aggregate of minerals that cannot readily be broken by hand.

Fill – Artificial (man-made or man-placed) deposits consisting of soil, rock, rubble, industrial wastes, organic materials, or any combination of these, which are transported and placed on the natural surface of soil or rock. Fills may or may not be compacted.

Groundwater – Free water in the ground.

Groundwater Level – The top surface of free water in the ground.

Perched Groundwater – Free water in the ground extending to a limited depth.

Artesian Groundwater – A confined body of water under a pressure that gives a level of hydrostatic pore pressure (phreatic elevation) that is higher than the top surface of the soil unit in which the pore water pressure exists. Flowing artesian corresponds to the condition where the phreatic elevation is higher than the ground surface.

Hydrostatic Pore Pressure – A pore water pressure varying as pressure in a non-moving free-standing column of water.

Frost Susceptible Soil – Soil in which significant ice segregation will occur resulting in frost heave, or heaving pressures, when requisite moisture and freezing conditions exist.

Frost Action – The phenomenon occurring when water in soil is subjected to freezing, which, because of the water-ice phase change or ice lens growth, results in a total volume increase, and/or the build-up of expansive forces under confined conditions, and the subsequent thawing that leads to the loss of soil strength and increased compressibility.

Adfreezing – The adhesion of soil to a foundation unit resulting from the freezing of soil water.

Allowable Bearing Pressure – In working stress design it is the maximum pressure that may be applied to a soil or rock by the foundation unit considered in design under expected loading and subsurface conditions towards achieving desired performance of the foundation system. In limit state design, allowable bearing pressure commonly corresponds to serviceability limit state for settlement not exceeding 25 mm towards achieving desired performance of the foundation.

Bearing Surface – The contact surface between a foundation unit and the soil or rock upon which it bears or is supported.

Geotechnical Resistance at Serviceability Limit State (SLS) – The reaction of the soil or rock at the deformation associated with a SLS condition.

Borehole & Test Pit Log Symbols Key

Descriptions & Glossary of Technical Terms

Geotechnical Resistance at Ultimate Limit State (ULS) – The geotechnical ultimate resistance of soil or rock corresponding to a failure mechanism (limit state) predictive from theoretical analysis using unfactored geotechnical parameters obtained from test or estimated from assessed values.

Factored Geotechnical Resistance at Ultimate Limit State (ULS) – The product of the geotechnical resistance factor and the geotechnical ultimate (nominal) soil or rock resistance.

Factored Geotechnical Bearing Resistance – The calculated ultimate (nominal) bearing resistance, obtained using characteristic ground parameters multiplied by the recommended geotechnical resistance factor.

Factor of Safety – In working stress design, the ratio of maximum available resistance to the resistance mobilized under the applied load.

Rock Quality Designation – A measure of the degree of fractures in rock cores, defined as the ratio of the accumulated lengths (minimum 100 mm) of sound rock over the total core length.

Foundation – A system or arrangement of structural members through which the loads from a building are transferred to supporting soil or rock.

Shallow Foundation – A foundation unit that provides support for a building by transferring loads to soil or rock located close to the lowest part of the building.

Deep Foundation – A foundation unit that provides support for a structure by transferring loads either by toe-bearing to soil or rock at considerable depth below the structure, or by shaft resistance in the soil or rock in which it is placed. Piles and caissons are the most common types of deep foundations.

Pile – A Slender deep foundation unit, made of materials such as wood, steel, or concrete, or combinations thereof, which is either premanufactured and placed by driving, jacking, jetting, or screwing, or cast-in-place in a hole formed by driving, excavating, or boring. Cast-in-place bored piles are commonly referred to as caissons in Canada.

Pier – A deep foundation unit with a large diameter to length ration, usually a large diameter bored pile or caisson.

Shaft Resistance – The resistance mobilized on the shaft side of a deep foundation. Upward acting is called positive shaft resistance. Downward acting is called negative shaft resistance or negative skin friction.

Downdrag – The transfer of load (dragload) to a deep foundation unit by means of negative skin friction when soil settles in relation to the foundation unit.

Overconsolidation Ratio (OCR) - The ration between the preconsolidation pressure and the current effective overburden stress.

SCHEDULE F - INSURANCE REQUIREMENTS

- F.1** Prior to the Effective Date of this Agreement, and on each anniversary date thereof and on the anniversary date of the insurance policy if different from the anniversary of the beginning construction of the Project until the Agreement has been fulfilled, the Ultimate Recipient shall provide evidence sufficient to the Province of Commercial General Liability Insurance in a limit of five million (\$5,000,000.00) dollars inclusive with the specifics as outlined in section F.2
- F.2** Prior to the Effective date, the Ultimate Recipient shall provide and maintain the following insurance policies in force during this Agreement. All policies shall be issued by insurers maintaining a minimum A.M. Best "A-" rating licensed to carry on business in Canada:
- a) Commercial General Liability insurance with an insured limit as shown in preceding paragraph F.1 for the limit of not less than the amount shown on a per occurrence basis covering bodily injury, death and damage to property, including loss of use, and in the annual aggregate for products liability and completed operations. All coverages as noted below shall be included in the Commercial Liability coverage, but it shall not be limited to them:
 - i. premises, property and operations liability;
 - ii. products liability and completed operations;
 - iii. blanket contractual liability;
 - iv. contingent employers' liability;
 - v. personal injury liability;
 - vi. non-owned licensed motor vehicle (automobile) liability;
 - vii. sudden and accidental pollution liability;
 - viii. water craft coverage (if applicable); and
 - ix. fire fighting expense liability;
 - x. owner's and contractors protective liability;
 - xi. cross liability;
 - xii. operation of attached machinery;
 - xiii. employees as additional Insureds;
 - xiv. broad form property damage;
 - xv. tenant's legal liability in an amount adequate to cover a loss to premises of the Province;
 - xvi. All insurance shall be maintained continuously while this Agreement is in force. All general liability or umbrella or excess insurance shall remain in force with respect to Completed Operations coverage until the end of the guarantee period, if any, or 36 months, whichever is the greater. All property policies shall be maintained continuously until ten (10) days after the date of the Ultimate Recipient's final application for payment or Substantial Completion Date, such date being at the full and complete discretion of the Province; and
 - xvii. No hazardous operations exclusion will be permitted. However, if any part of the Project includes blasting, shoring, excavating, underground work, underpinning, demolition, pile driving or caisson work, working in water or from a floating platform or vessel, it shall be the obligation of the Ultimate Recipient to ensure that the trade doing such part of the Project has liability insurance similar to that required by this Agreement, but including coverage for risks arising out of such part of the Project.

This insurance shall be in the name of the Ultimate Recipient, and the Province and its Ministers, elected and appointed officials, officers, employees and agents, as an additional insured to the extent of the Ultimate Recipient's legal liability for claims for property damage, bodily injury, including death and personal injury, arising from the operations of the Ultimate Recipient, its employees, agents and contractors;

- b) If the Project consists of or involves in any way work of a professional nature, such as engineering, engineering design, construction management, architectural work or any other professional service identified, then Professional (Errors & Omissions) Liability Insurance with an insured limit of not less than Two Million Dollars (\$2,000,000.00) per claim and in the annual aggregate covering legal liability for economic losses arising from the performance of work provided under this Agreement shall be secured. The policy will be maintained for a period of not less than six (6) years following the expiration or early termination of this Agreement if required by the type of work performed in the opinion of the Oversight Committee;

- c) If the Project involves any environmental issues or requirements for environmental studies, then Environmental Insurance Liability with minimum limits of Five Million Dollars (\$5,000,000.00) per claim must be purchased and maintained for the duration of the Project;
- d) Automobile liability coverage (Standard Automobile Policy) on all vehicles, the subject of this Agreement, owned, leased, operated or licensed in the name of the Ultimate Recipient, in an amount not less than Two Million Dollars (\$2,000,000.00) dollars;
- e) If the Project consists of or involves in any way work in or on boats or marine craft of any type, whether powered or not powered, or if the Project involves any use of aircraft, then the Ultimate Recipient shall provide evidence of such insurance particulars and amount and with an insurer all as required by the Province designed specifically for marine and water exposures or those related to airports or aviation. Said requirements shall be no less in terms of overall limits, based on the size of the contracts. The Province specifically reserves the right to modify this paragraph to include marine specific insurance such as protection and indemnity or hull insurance among others to be identified, should such work be contracted and prior to the start of any work under the Agreement.
- f) If the Project consists of or involves in any way work in or with software, computer systems, software installation or development, the Province specifically reserves the right to modify this paragraph to include technology related coverages including cybercrime and technology errors and omissions among other to be identified.

F.3 In addition to the insurance requirements contained in sections F.1 and F.2 herein, the Ultimate Recipient shall also provide evidence to the Province, of the following insurance prior to the Effective Date, and on each anniversary date thereof until the Agreement has been fulfilled:

- a) If the Project consists of a renovation to an existing building or structure, then the Ultimate Recipient shall provide evidence of Course of Construction Property Insurance, that is all risk, replacement cost blanket limit, with an agreed amount endorsement and includes boiler and machinery coverage where applicable in the opinion of the Oversight Committee. Said Property coverage will include completed operations coverage for 24 months after completion to the full value of the building or structure as required by the Province. Property Insurance for explosion, collapse and underground exposure shall be included along with loss of use.
- b) If the Project consists of new building or structure, then the Ultimate Recipient shall provide evidence of Course of Construction Property Insurance, that is all risk, replacement cost blanket limit, with an agreed amount endorsement and includes boiler and machinery coverage where applicable in the opinion of the Oversight Committee. Said coverage will include completed operations coverage for 24 months after completion to the full value of the building or structure as required by the Province.

F.4 In all insurance policies required under paragraphs F.1, F.2 and F.3 herein:

- a) There shall be an endorsement stating that the insurer will provide 30 days' notice to the Province's Risk Manager (or the acting or assistant) of cancellation or material change in coverage;
- b) The insurer shall acknowledge that the policy is primary and any other insurance policies that may be in effect or any other sources of recovery including the Government of Prince Edward Island Self Insurance and Risk Management Fund shall not contribute in any way to any judgments, awards, payments, or cost or expenses of any kind whatsoever made as a result of actual or alleged claims. The Ultimate Recipient shall provide the Province with current certificates of insurance, in a form and content reasonably acceptable to the province, evidencing the required insurance policies hereunder within ten (10) days of the Effective Date and on each renewal of the insurance policies thereafter. Umbrella or Excess insurance may be used to achieve the required insured limits above. Default of delivery or receipt by the Province shall not be construed as acknowledgement or concurrence that there has been compliance with the terms of this Agreement. The Province shall have the right, but not the obligation to review the originals of any insurance required by this Agreement at any reasonable time and in an office of its choice.

- 5 For each Contract entered into with a Third Party, the Ultimate Recipient must require the Third Party to maintain during the term of the Contract the insurance coverage as is required of the Ultimate Recipient under this Schedule F (Insurance Requirements), according to the scope of the work and terms and conditions of the Contract. For greater certainty, the Ultimate Recipient must also require the Third Party to comply with all the requirements applicable to such insurance coverage as are set out in this Schedule F (Insurance Requirements).
- F.6** If the Ultimate Recipient fails to maintain the required insurance described herein, the Province may, but has no obligation to, pay the premium therefore and obtain reimbursement from the Ultimate Recipient. The Ultimate Recipient has required insurance shall be primary except to the extent of claims arising from the negligence of the Province.
- F.7** Nothing in this Schedule F (Insurance Requirements) shall be construed to limit the liability of any insurer of any insurance required under Schedule F (Insurance Requirements). For further clarification, the Ultimate Recipient shall waive any limitation of rights of recovery where an insurer of any policy listed in Schedule F (Insurance Requirements) is responding, is expected, or is waiting to respond to a claim and the insurer shall not be limited in its liability by reason of this Schedule F (Insurance Requirements), except to the limit established.
- F.8** The Ultimate Recipient shall maintain continuously adequate protection of all his or her work from damage and shall take reasonable precautions to protect the Province's property from all injury arising in connection with this Agreement. He or she shall make good any damage or injury to his or her work and shall make good any damage or injury to the property of the Province resulting from the lack of reasonable protective precautions. He or she shall not be responsible, however, for any damage or injury to his or her work and to the property of the Province which may be directly due to errors in the Agreement.



PO Box 2000, Charlottetown
 Prince Edward Island
 Canada C1A 7N8

**Environment,
 Energy and
 Climate Action**

**Environnement,
 Énergie et
 Action climatique**



C.P. 2000, Charlottetown
 Île-du-Prince-Édouard
 Canada C1A 7N8

PERMIT NO: QA24-010

PRINCE EDWARD ISLAND WATERCOURSE / WETLAND AND BUFFER ZONE ACTIVITY PERMIT

In accordance with the authority provided by Sections 2, 3 and 6 of the Prince Edward Island Watercourse and Wetland Protection Regulations, permission is granted to:

Name: **Town of Stratford**

Address: **234 Shakespeare Dr, Stratford PE**

Postal Code: **C1B2V8**

to undertake an activity in a watercourse / wetland and adjacent buffer zone, namely:

Wetland Enhancement or Maintenance

on and adjacent the Kelly Pond, a tributary to the Northumberland Straight situated on Provincial Property Number(s): 329193 at Stratford in Queens County, PEI with coordinates of 46.21557° latitude and -63.10061° longitude.

This permit is, by order of the Minister, effective on **Saturday, June 1, 2024**
and expires on **Monday, September 30, 2024**

and is subject to the full implementation of and compliance with the following terms and conditions:

- [A] That all reasonable measures (in the opinion of the Minister) must be taken to minimize the siltation of the watercourse.**
- [B] That the death of fish or any permanent alteration to, or destruction of fish habitat is prohibited unless the work, undertaking, or activity is authorized by DFO and the work undertaking or activity is carried on in accordance with the conditions established by DFO.**
- [C] That it is the applicant's responsibility to obtain any other necessary forms of approval or permission (ie: permits, etc.) from other government agencies including federal, provincial, and municipal departments or private landowners before the work commences.**
- [D] That the issuance of this permit or approval does not imply any warranty against damages due to weather and / or climate change. Government shall not be liable for any claims, demands, losses, costs, damages, actions, suits or proceedings of every nature and kind whatsoever arising out of or resulting from the issuance of this permit or approval as a result of weather or climate change.**
- [E] That the installation of environmental protection measures (e.g. silt fencing, silt booms, etc) must be an initial step in the construction sequence, and these and other erosion/sediment control measures (e.g floating booms, mulching, erosion control blankets, seeding, etc) must be installed and maintained to prevent siltation of the watercourse/wetland.**
- [F] That all fuel and other toxic substances must be stored a minimum of 15 metres from any watercourse/wetland.**
- [G] Equipment refuelling for heavy machinery take place a minimum of 15 metres from any watercourse or wetland boundary.**
- [H] That all dredge spoils must remain within the footprint of the lands adjacent to Kelly's Pond.**

PERMIT NO: QA24-010

[I] That to the extent possible, additional soil erosion/sedimentation control measures must be implemented as required by the proponent/contractor. Upon project completion, all disturbed soil within the project area should be stabilized with heavy mulch or native vegetation.

[J] That the proponent must ensure that a copy of this Regulatory Approval is maintained on the job site at all times for reference and inspection purposes.

[K] Install effective erosion and sediment control measures prior to beginning works, undertakings and activities and regularly inspect and maintain the erosion and sediment control measures and structures during all phases of the works, undertakings and activities.

[L] Regularly monitor the watercourse for signs of sedimentation during all phases of the works, undertakings and activities and take corrective action if required and keep the erosion and sediment control measures in place until all disturbed ground has been permanently stabilized.

[M] Schedule work to avoid wet, windy, and rainy periods (and heed weather advisories) that may result in high flow volumes and/ or increase erosion and sedimentation.

[N] Maintain an appropriate depth and flow (i.e., base flow and seasonal flow of water) for the protection of fish habitat and dewater gradually to reduce the potential for stranding fish.

[O] Do not deposit any deleterious substances in the water body and develop and immediately implement a response plan to avoid deleterious substances from entering a waterbody.

[P] Stop works, undertakings and activities in the advent of a spill of a deleterious substance and immediately report any spills (e.g., sewage, oil, fuel or other deleterious material), whether near or directly into a water body.

[Q] That heavy equipment/machinery must arrive on site in a clean, washed condition and be maintained free of fluid leaks and the contractor must have on site at all times a minimum 190L Emergency Spill Response Kit while working within the 15-meter buffer.

[R] Ensure clean-up measures are suitably applied so as not to result in further alteration of the bed and/or banks of the watercourse.

[S] Conduct all in-water works, undertakings and activities in isolation of open or flowing water to reduce the introduction of sediment into the watercourse, install turbidity curtain during works, undertakings and activities.

[T] That all work must take place as outlined in your Watercourse, Wetland and Buffer Zone Activity Permit Application and supporting documents dated February 13, 2024.

[U] That all recommended measures from the DFO letter of advice 24-HGLF-00052 are implemented.

[V] That any materials used in construction of the Culvert and/or approaches must not be obtained within 15 metres of the watercourse/wetland.

[W] That a minimum of 2/3 of the natural width of the watercourse must remain unobstructed at all times to ensure adequate fish passage.

[X] That the culvert used for the crossings must have at least the minimum size opening of 1.5m required to avoid any restriction of water flow.

[Y] That the base of the culvert must be placed not less than 6 inches below stream bed elevation at a slope not exceeding 0.5%.

[Z] That in-stream work may only be carried out between June 1 and September 30 of any calendar year.



PO Box 2000, Charlottetown
Prince Edward Island
Canada C1A 7N8

Environment,
Energy and
Climate Action

Environnement,
Énergie et
Action climatique



C.P. 2000, Charlottetown
Île-du-Prince-Édouard
Canada C1A 7N8

PERMIT NO: QA24-010

If you have any questions regarding the foregoing permit conditions, please contact
Shawn Banks (902-314-2737) or Shawn Hill (902-394-1472).

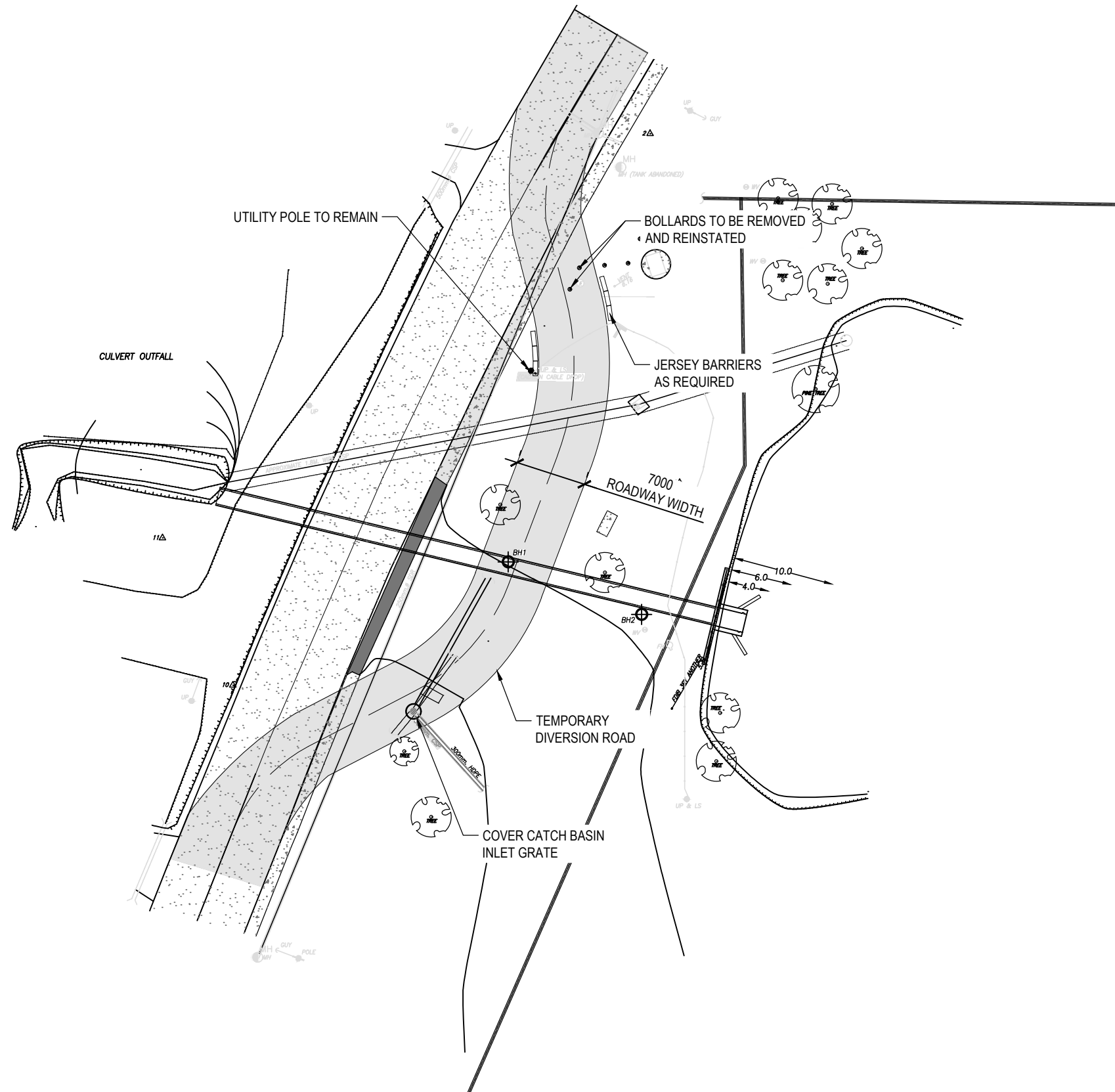
Date issued: Monday, March 11, 2024

Signed:

David Dowling
Environment Officer



THIS IS A SCHEMATIC DRAWING ONLY



1 DIVERSION ROAD
SK-1 1:500



DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE
Tel 902 368 5100 PO Box 2000
Fax 902 368 5395 Charlottetown
<http://www.gov.pe.ca/> Prince Edward Island
Canada C1A 7N8

ALL WORK SHALL BE CONDUCTED IN ACCORDANCE WITH THE 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

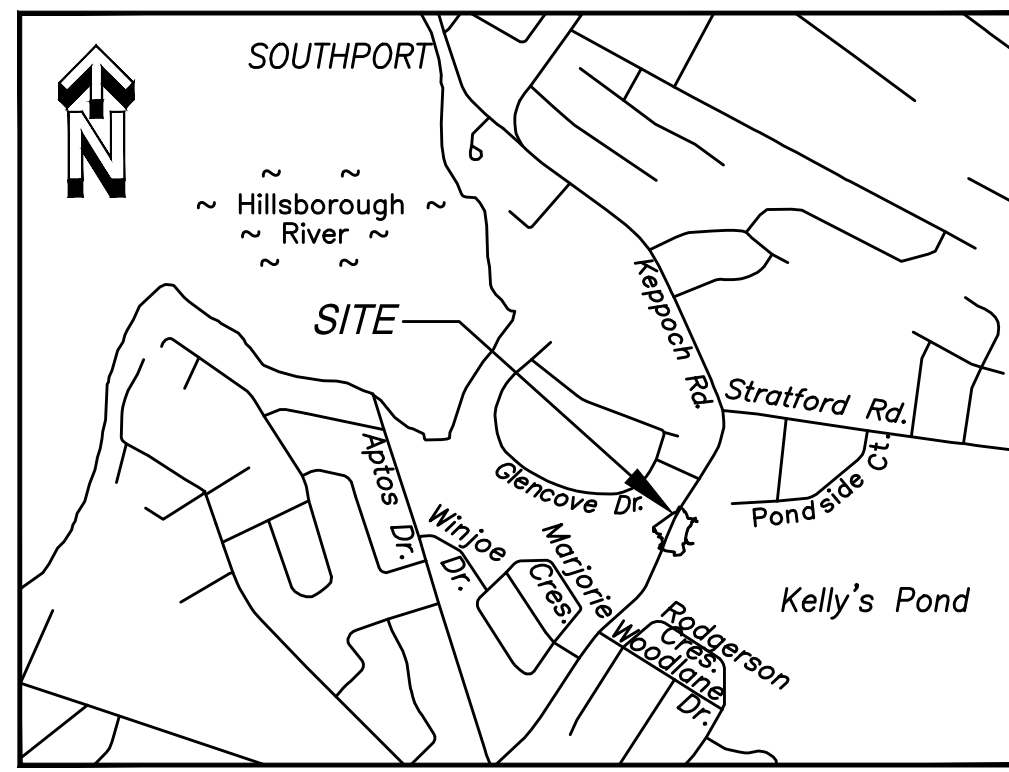
SURVEY BY: T.I. SCALE: AS NOTED
DRAWN BY: K. MACEACHERN COUNTY: ----
APPROVED BY: D. EVANS
PROJECT No.: NUMBER

No.	REVISIONS	DATE

STATIONING:
CONTROL SECTION:

JOB: KEPPOCH ROAD
SHEET NAME: PLAN - NEW

SHEET No. SK 1 OF 1

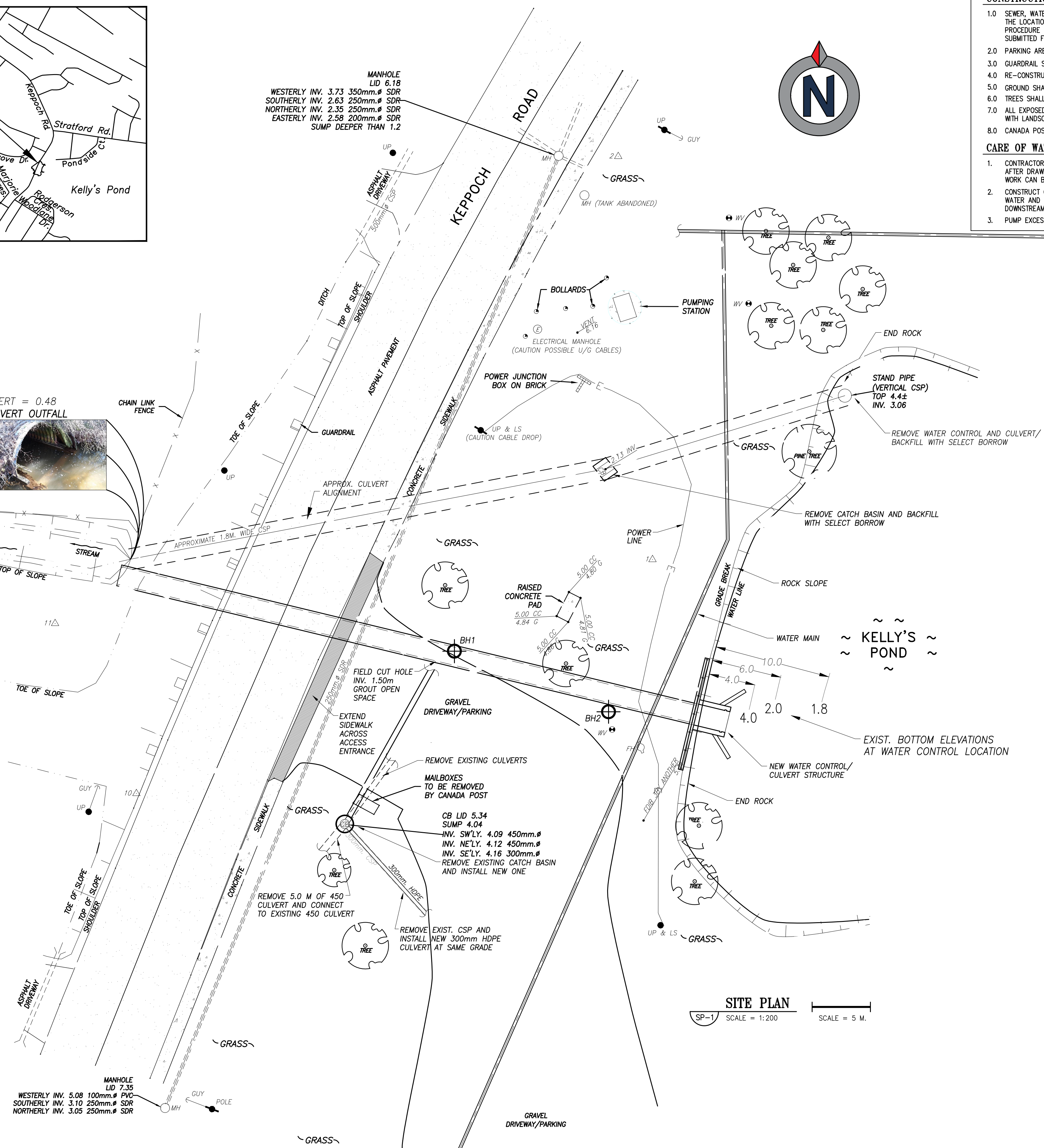


MANHOLE
LID 6.19
WESTERLY INV. 3.73 350mm.# SDR
SOUTHERLY INV. 2.63 250mm.# SDR
NORTHERLY INV. 2.35 250mm.# SDR
EASTERLY INV. 2.58 200mm.# SDR
SUMP DEEPER THAN 1.2



INVERT = 0.48
CULVERT OUTFALL

EROSION AND SEDIMENT CONTROL MEASURE IS REQUIRED DOWNSTREAM OF THE LOWEST WORK AREA. 24" DIAMETER SILT SOCK MAY BE A SUITABLE PRODUCT. A MARINE TYPE 2 SILT BOOM COULD ALSO BE USED IF FLOWS ARE LOW.



SITE PLAN
SCALE = 1:200 SCALE = 5 M.

CONSTRUCTION NOTES:

- SEWER, WATER AND POWER LINES SHALL BE MAINTAINED DURING CONSTRUCTION. THE LOCATION OF THE UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR. PROCEDURE FOR MAINTENANCE OF UTILITIES DURING CONSTRUCTION SHALL BE SUBMITTED FOR APPROVAL.
- PARKING AREA AND DRIVEWAY SHALL BE RESTORED TO ORIGINAL CONDITION.
- GUARDRAIL SHALL BE REINSTALLED UPON COMPLETION OF WORK.
- RE-CONSTRUCT DISTURBED CONCRETE SIDEWALK AND TACTILE WARNING PLATE.
- GROUND SHALL BE SLOPED FROM EDGE OF SIDEWALK (6%) TO POND.
- TREES SHALL BE REMOVED OFFSITE.
- ALL EXPOSED SURFACES SHALL BE COVERED WITH 150 TOPSOIL AND HYDRO-SEEDING WITH LANDSCAPER CHOICE OR EQUIVALENT.
- CANADA POST TO RELOCATE MAILBOXES BEFORE THE WORK BEGINS.

CARE OF WATER:

- CONTRACTOR SHALL BE RESPONSIBLE TO SHAPE POND BOTTOM DURING AND AFTER DRAINDOWN TO ENSURE SUFFICIENT DRAINAGE OF POND, SUCH THAT THE WORK CAN BE COMPLETED.
- CONSTRUCT COFFER DAM OR OTHER TEMPORARY WORKS AS REQUIRED TO CONTROL WATER AND PROVIDE SUITABLE WORK AREA AT NEW WATER CONTROL STRUCTURE AND DOWNSTREAM END OF NEW CULVERT.
- PUMP EXCESS RUNOFF AROUND SITE.

LEGEND:

SYMBOLS:

- NO. Δ SURVEY CONTROL POINT
- CATCH BASIN
- MH SEWER MANHOLE
- WV WATER VALVE
- POLE
- BOLLARD
- ELECTRICAL MANHOLE
- TREE

LINETYPES:

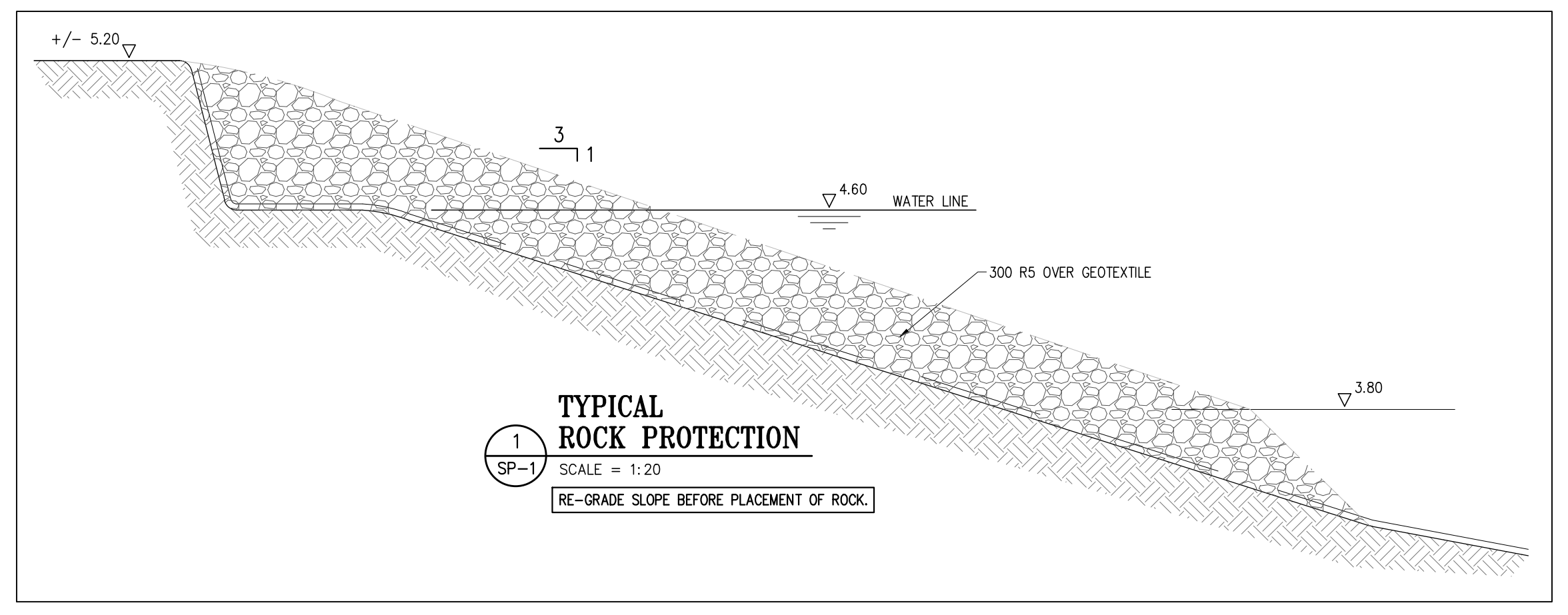
- - - CONTOUR (0.3M. INTERVAL)
- TOP OF SLOPE
- GRADE BREAK
- GUARD RAIL
- - - STORM OR SANITARY SEWER
- CHAIN LINK FENCE

ABBREVIATIONS:

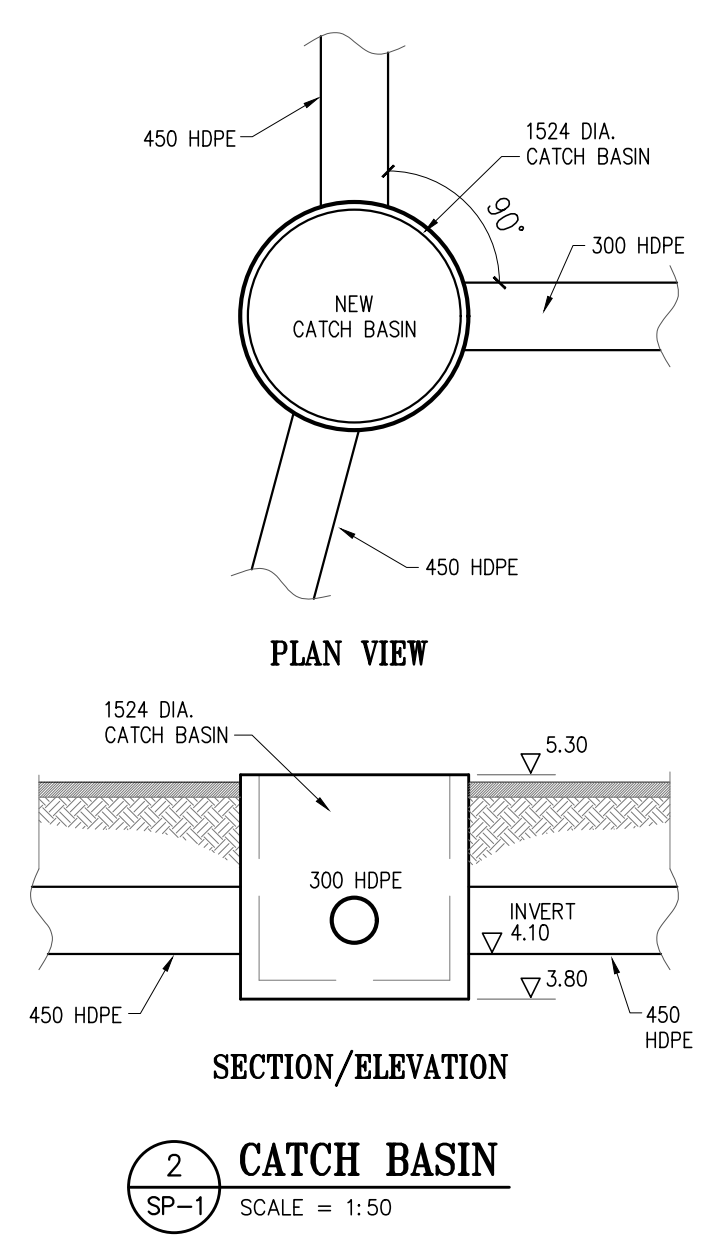
- BS BOTTOM OF SLOPE
- BTM BOTTOM
- CB CATCH BASIN
- CC CONCRETE CEMENT
- CL CENTRELINE
- CSP CORRUGATED STEEL PIPE
- DWY DRIVEWAY
- EP EDGE OF PAVEMENT
- FL FLOWLINE
- G GROUND
- GB GRADE BREAK
- INV INVERT
- LS LIGHT STANDARD
- PA PLANTINGS
- SSMH SANITARY SEWER MANHOLE
- SW SIDEWALK
- TC TOP OF CURB
- TG TOP OF GUTTER
- TS TOP OF SLOPE
- WL WATERLINE
- WV WATER VALVE

NOTES:

- THIS SURVEY USES NAD83(CSRS) EPOCH 2010.0 VERSION 7 PEI DOUBLE STEREOGRAPHIC PROJECTION COORDINATES.



TYPICAL ROCK PROTECTION
SCALE = 1:20
RE-GRADE SLOPE BEFORE PLACEMENT OF ROCK.



CATCH BASIN
SCALE = 1:50

Project:
KELLY'S POND
STRATFORD, PE
SITE PLAN AND DETAILS

Date: MARCH 07, 2024
Scale: AS NOTED
Job no.:
Project no.:
Drawn by: MGM
Checked by: GAL / MEE

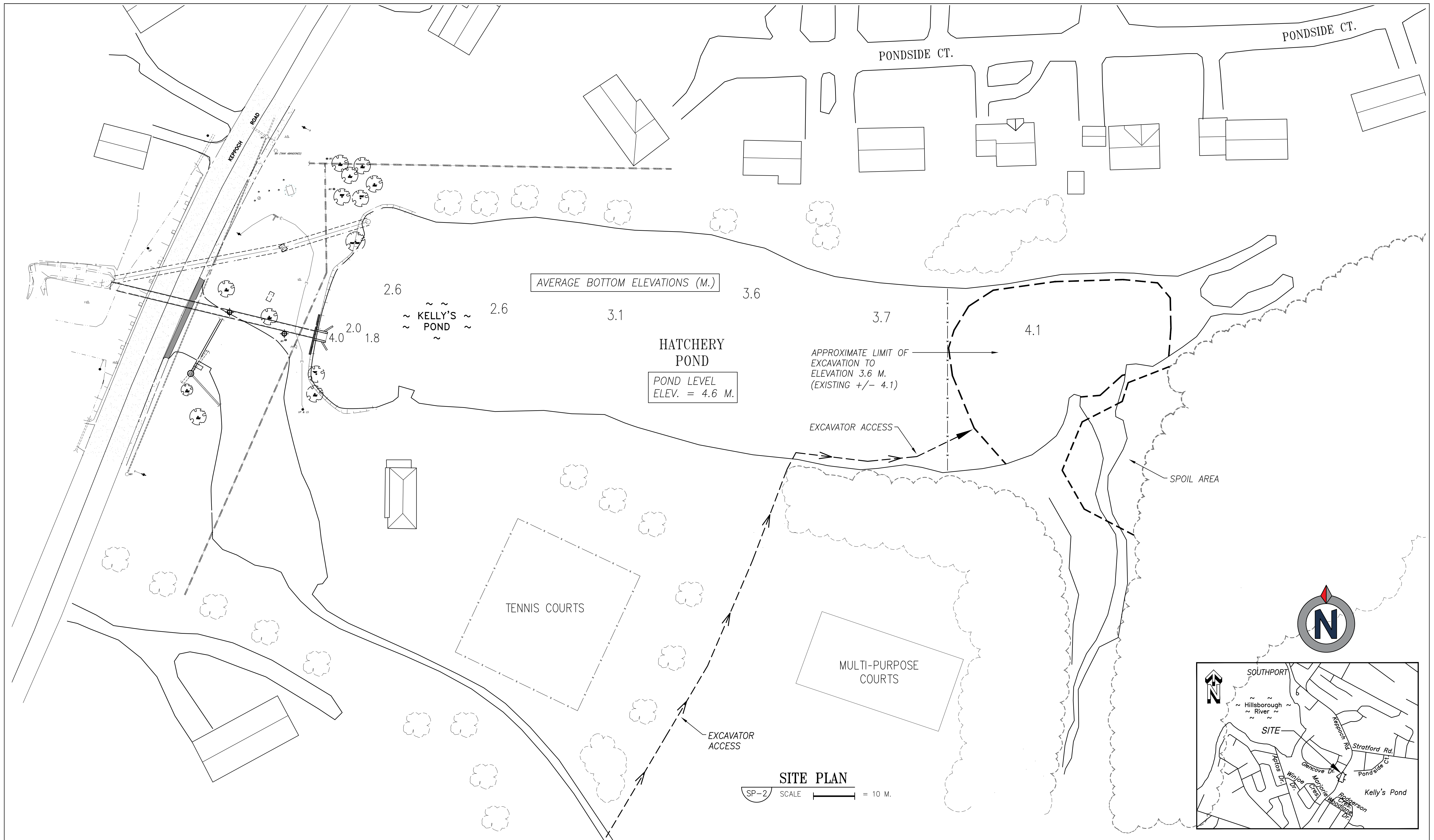


NO.	REVISIONS	NAME	DATE
7	REVISED - ISSUED FOR TENDER		03/07/24
6	REVISED - ISSUED FOR TENDER		05/09/23
5	REVISED - ISSUED FOR TENDER		04/19/23
4	ISSUED FOR TENDER		03/20/23
3	ISSUED FOR PERMIT		02/24/23
2	ISSUED FOR FINAL REVIEW		10/04/22
1	ISSUED FOR REVIEW		09/06/22

Gary Associates Limited
Structural and Welding Consultants
Lokesh Garg, P.Eng.
President
3 Greenleaf Dr., Charlottetown
Prince Edward Island C1A 8E7
Phone: (902) 566-5456, Fax: (902) 566-3598
email: lokeshgarg201@gmail.com

McCullough Environmental Engineering
43 ROGERS AVE.
Amherst, Nova Scotia
B4H 2J7,
C. (902) 664-4858
www.mccullough-ee.com

Drawing no.: **SP-1**



SITE PLAN
 SP-2 SCALE 1" = 10 M.

Project:
KELLY'S POND
 STRATFORD, PE
 SITE PLAN - DREDGING

Date: **MARCH 07, 2024**
 Scale: **AS NOTED**
 Drawn by: **MGM**
 Checked by: **GAL / MEE**

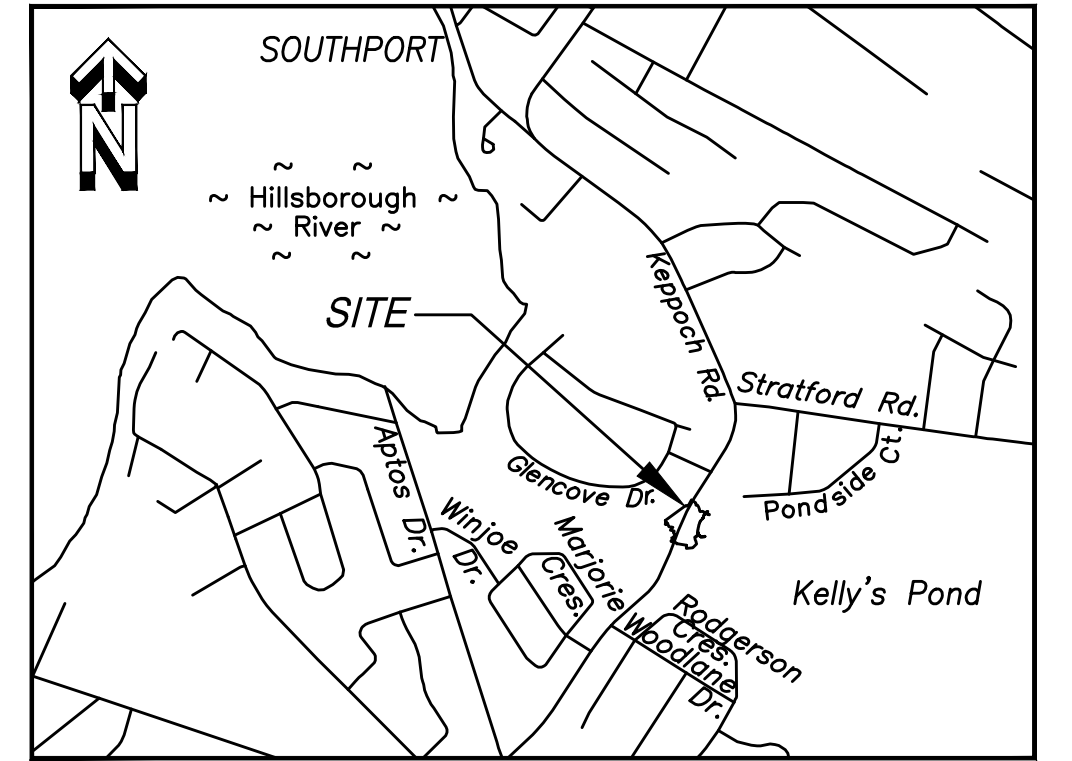
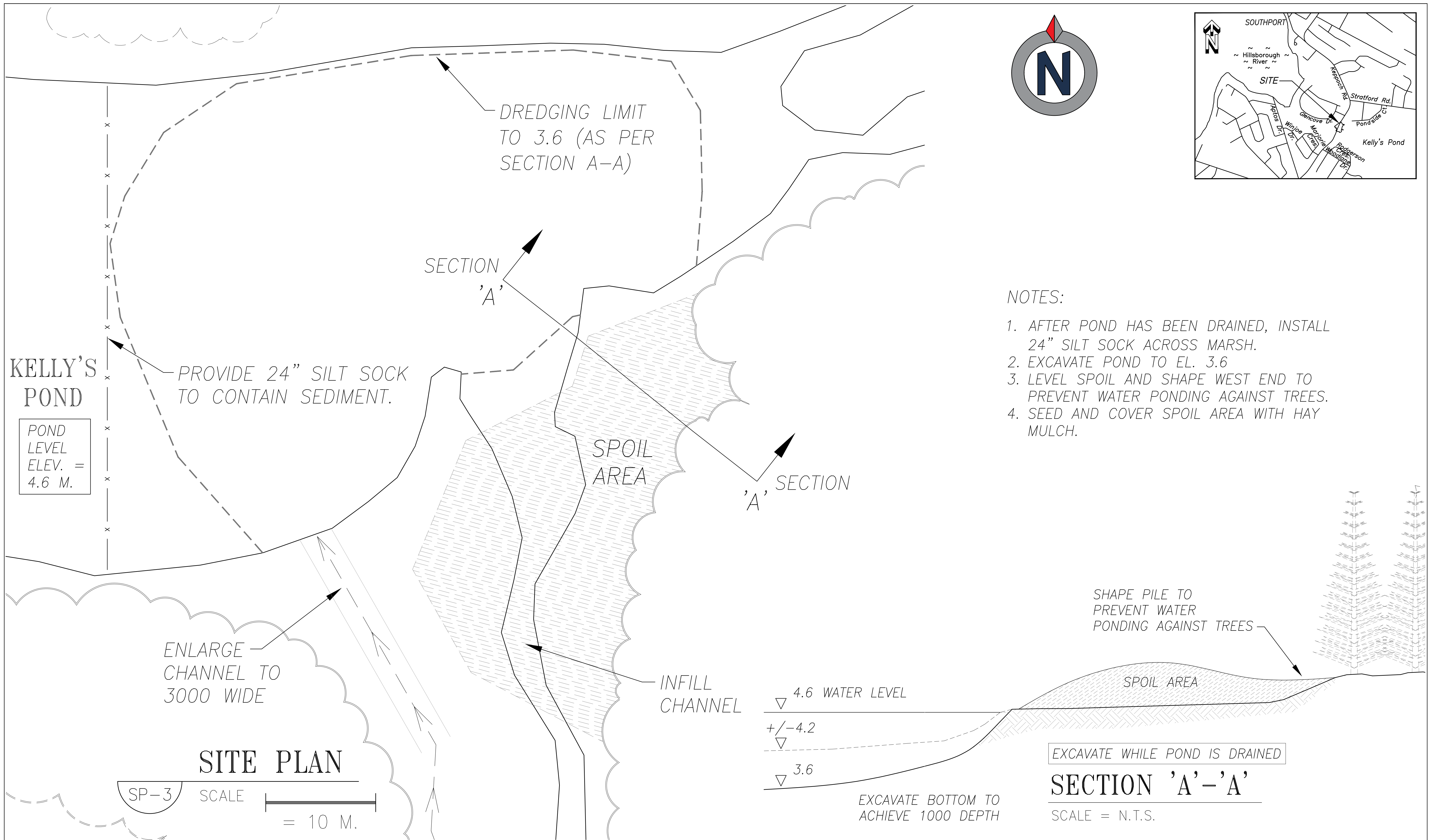
Job no:
 Project no:
 R. Brian McCullough
 No. 827
 DATE: **10/21/24**
 LICENSED PROFESSIONAL ENGINEER
 PROVINCE OF PRINCE EDWARD ISLAND

NO.	REVISIONS	NAME	DATE
3	REVISED FOR TENDER		03/07/24
2	ISSUED FOR TENDER		01/22/24
1	ISSUED FOR REVIEW		01/08/24

GAL Engineers
Gary Associates Limited
 Structural and Welding Consultants
 Lokesh Garg, M.Sc., P.Eng.
 President
 3 Greenleaf Dr., Charlottetown
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 Phone: (902) 566-5456, Fax: (902) 566-3598
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McCullough Environmental Engineering
 43 ROGERS AVE.
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 C. (902) 664-4858
 www.mccullough-ee.com

Drawing no.:
SP-2



Project:
KELLY'S POND
STRATFORD, PE
SITE PLAN - DREDGING DETAILS

Date: MARCH 07, 2024
Scale: AS NOTED
Job no.:
Project no.:
Drawn by: MGM
Checked by: GAL / MEE

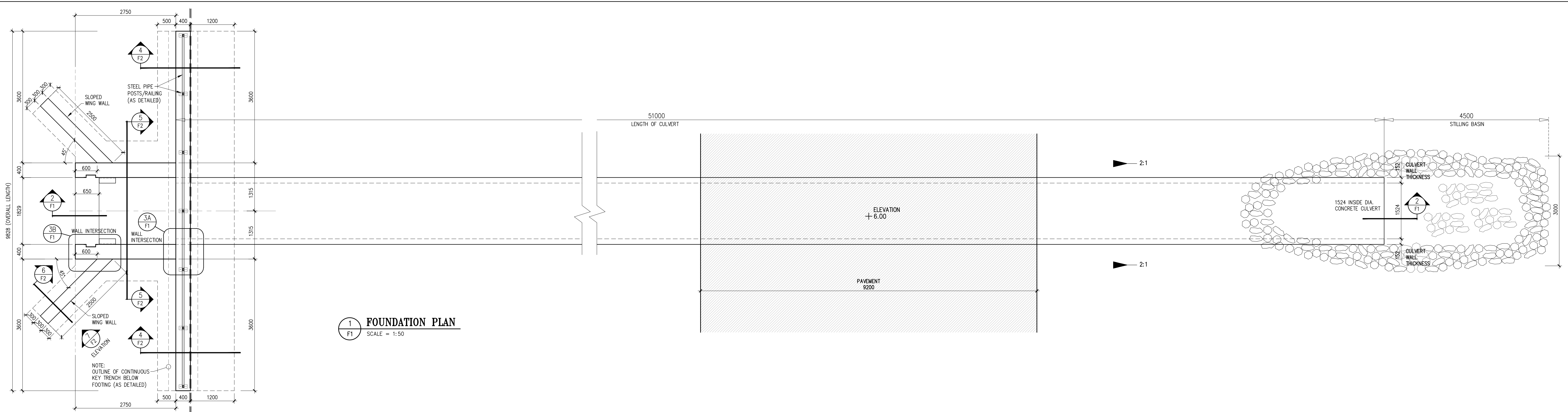
THE ASSOCIATION OF PROFESSIONAL ENGINEERS OF THE PROVINCE OF PRINCE EDWARD ISLAND
VALID FOR THE YEAR 2024
R. Brian McCullough
No. 827
DATE: Mar 11/24
LICENSED PROFESSIONAL ENGINEER
PROVINCE OF PRINCE EDWARD ISLAND

NO.	REVISIONS	NAME	DATE
2	ISSUED FOR TENDER		03/07/24
1	ISSUED FOR REVIEW		03/04/24

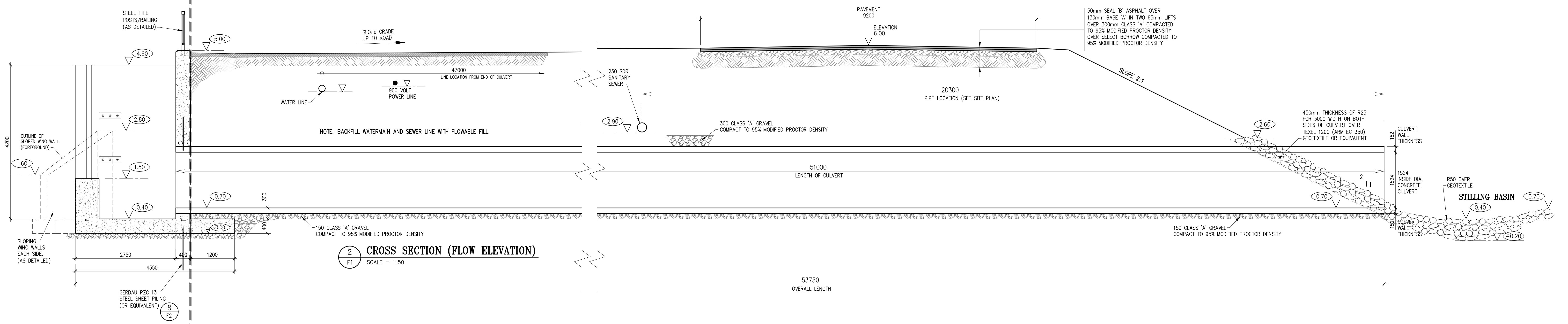
GAL
ENGINEERS
Lokesh Garg, M.Sc., P.Eng.
President
3 Greenleaf Dr., Charlottetown
Prince Edward Island C1A 8E7
Phone: (902) 566-5456, Fax: (902) 566-3598
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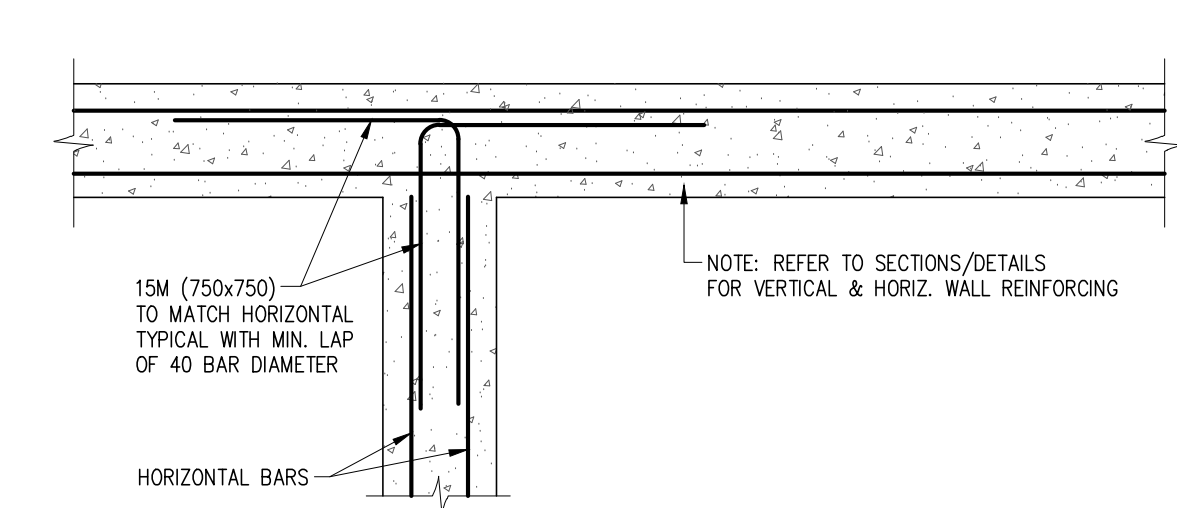
Drawing no.:
SP-3



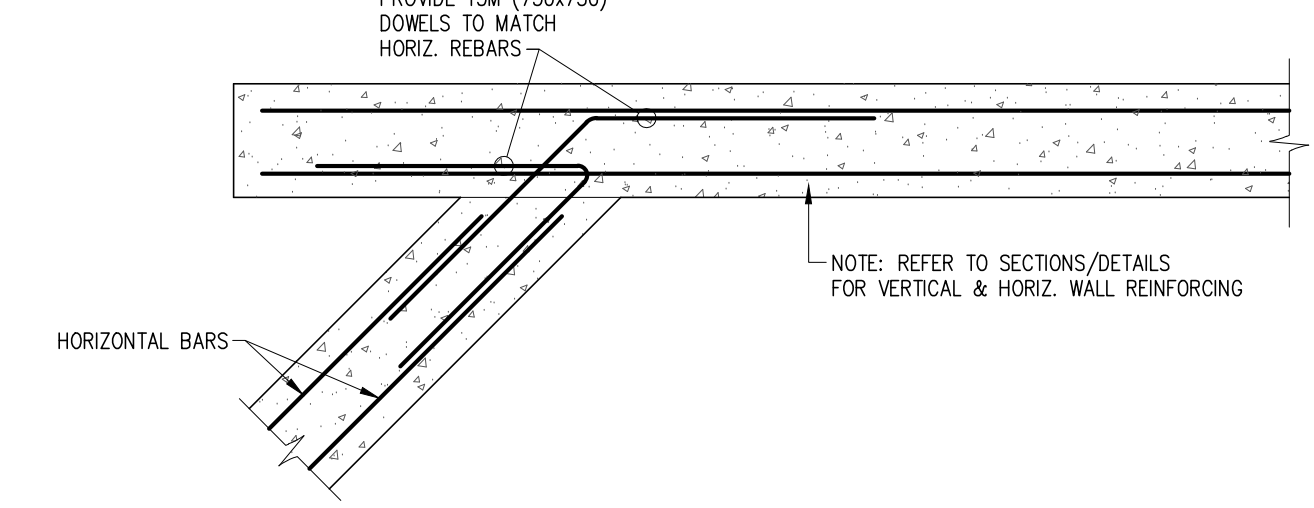
1 FOUNDATION PLAN
SCALE = 1:50



2 CROSS SECTION (FLOW ELEVATION)
SCALE = 1:50



3A TYPICAL PLAN DETAIL AT INTERSECTION OF (PERPENDICULAR) WALLS
SCALE = 1:20



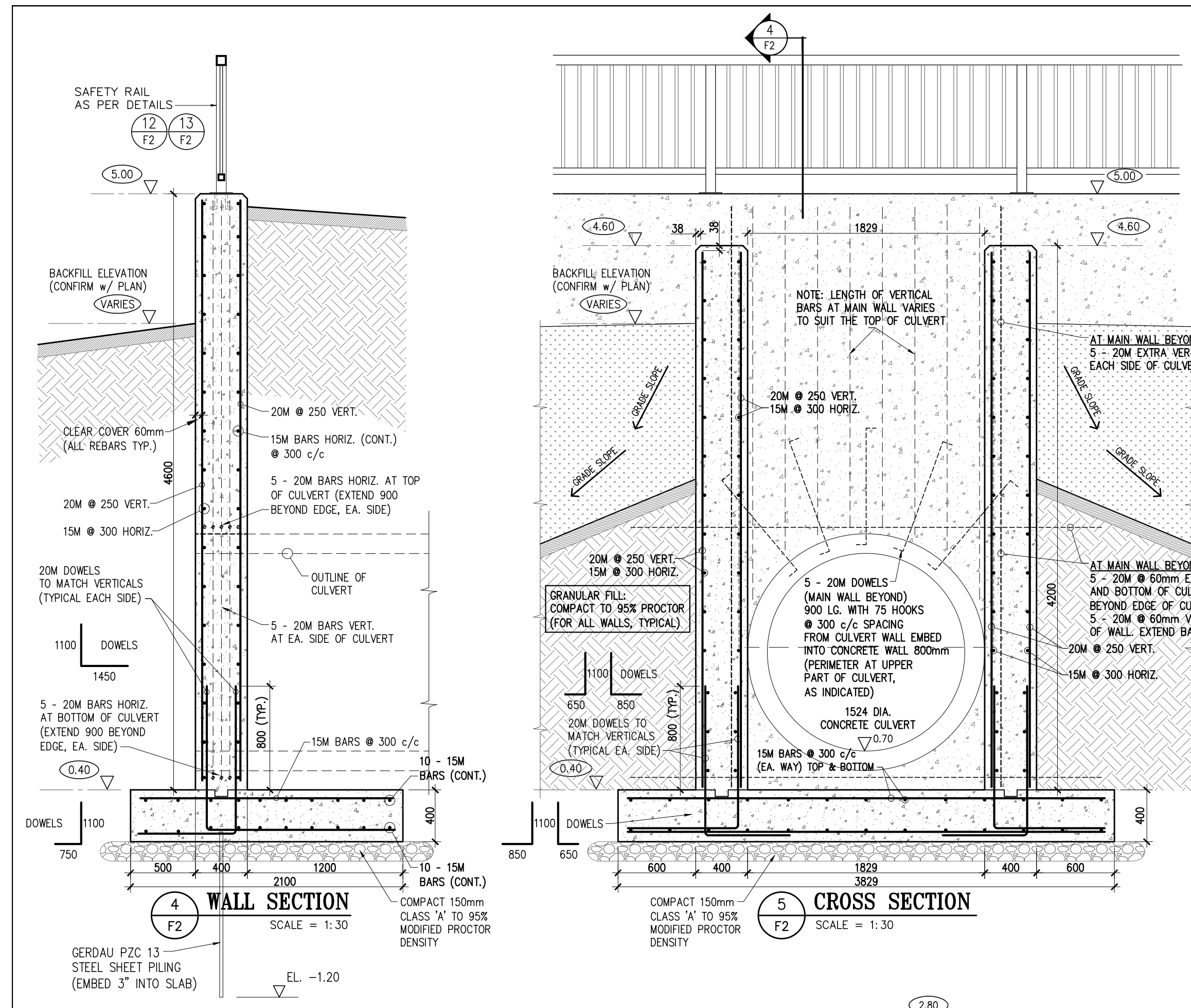
3B TYPICAL PLAN DETAIL AT INTERSECTION OF (ANGLED) WALLS
SCALE = 1:20

- REINFORCED CONCRETE GENERAL NOTES:**
- ALL CONCRETE = 35 Mpa AT 28 DAYS.
 - ALL CONCRETE SHALL CONFORM TO CSA A23.1/A23.2 CLASS C-1 EXPOSURE.
 - ALL CONCRETE SHALL BE READY-MIX AND CONFORM TO CSA CAN3-A23.1/A23.2.
 - ALL TESTING SHALL CONFORM TO CSA A23.2. RECORD THE TEST FOR SLUMP & COMPRESSIVE TESTS.
 - ALL CONCRETE CURING MEMBRANES SHALL CONFORM TO CSA CAN3-A23.1/A23.2.
 - NO CONCRETE SHALL BE PLACED WITHOUT PRIOR KNOWLEDGE AND APPROVAL OF THE STRUCTURAL CONSULTANT.
 - CONCRETE COVER OVER REINFORCING STEEL:
 - FORMED SURFACE AGAINST THE SOIL = 100mm
 - SURFACE EXPOSED TO WEATHER = 70mm
 - ALL FOOTINGS SHALL HAVE A MINIMUM FROST PROTECTION COVER OF 1500mm.
 - CHAMFER ALL EXPOSED EDGES OF CONCRETE 25x25.
 - PROVIDE WINTER PROTECTION FOR ALL CONCRETE WORKS AS PER CSA A23.2 WHEN OUTSIDE TEMPERATURE IS BELOW 10 DEG. C.

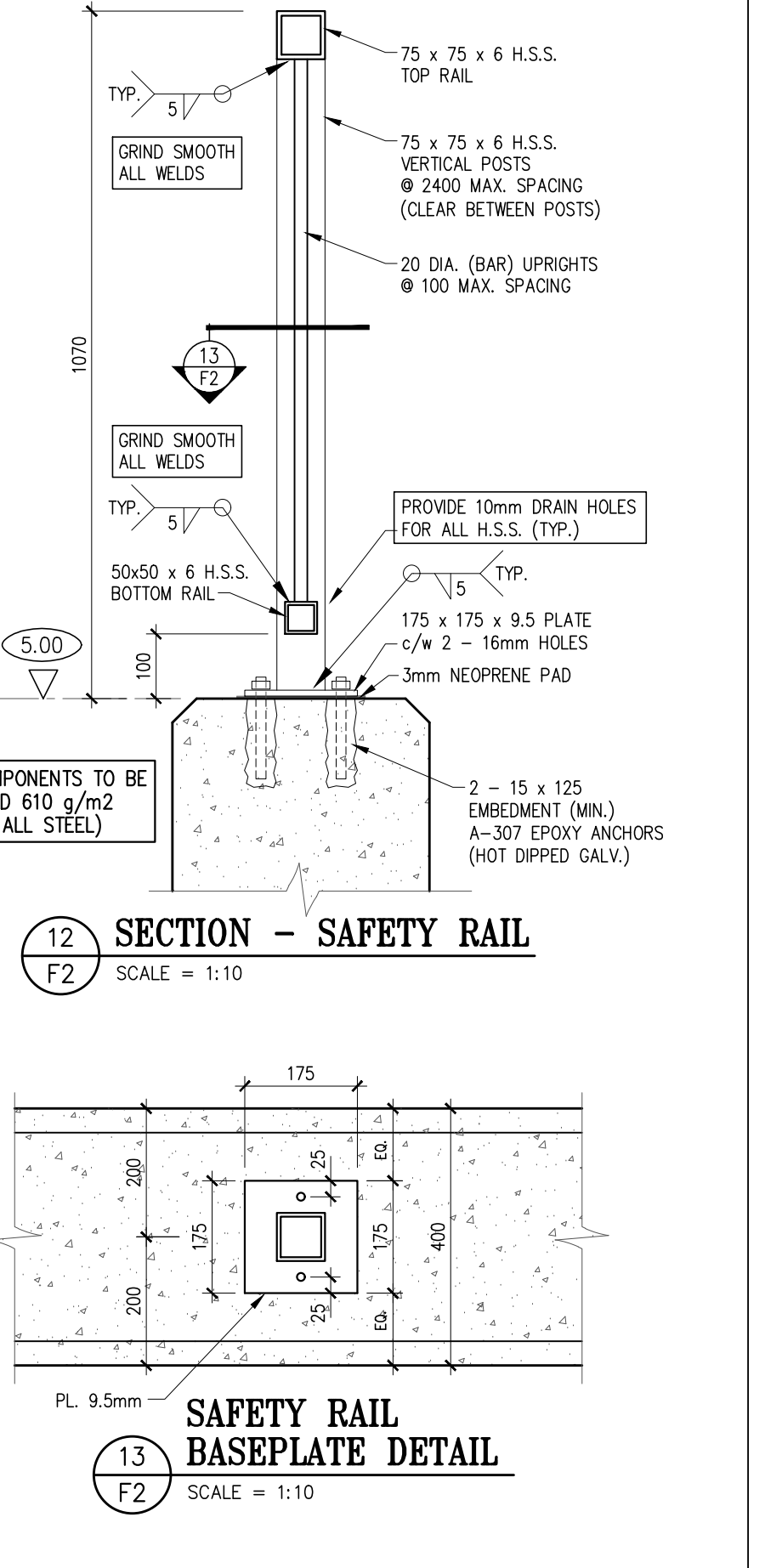
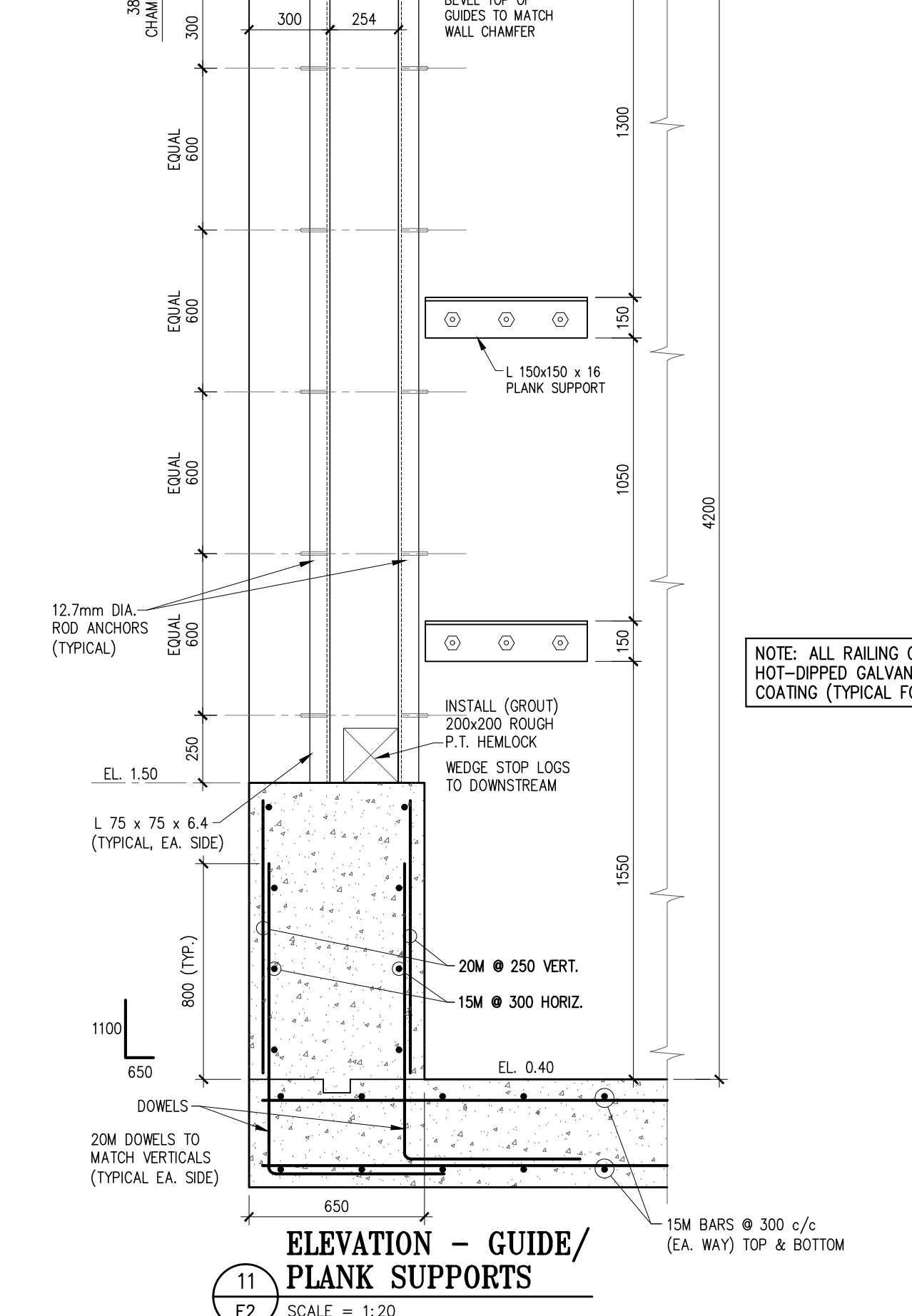
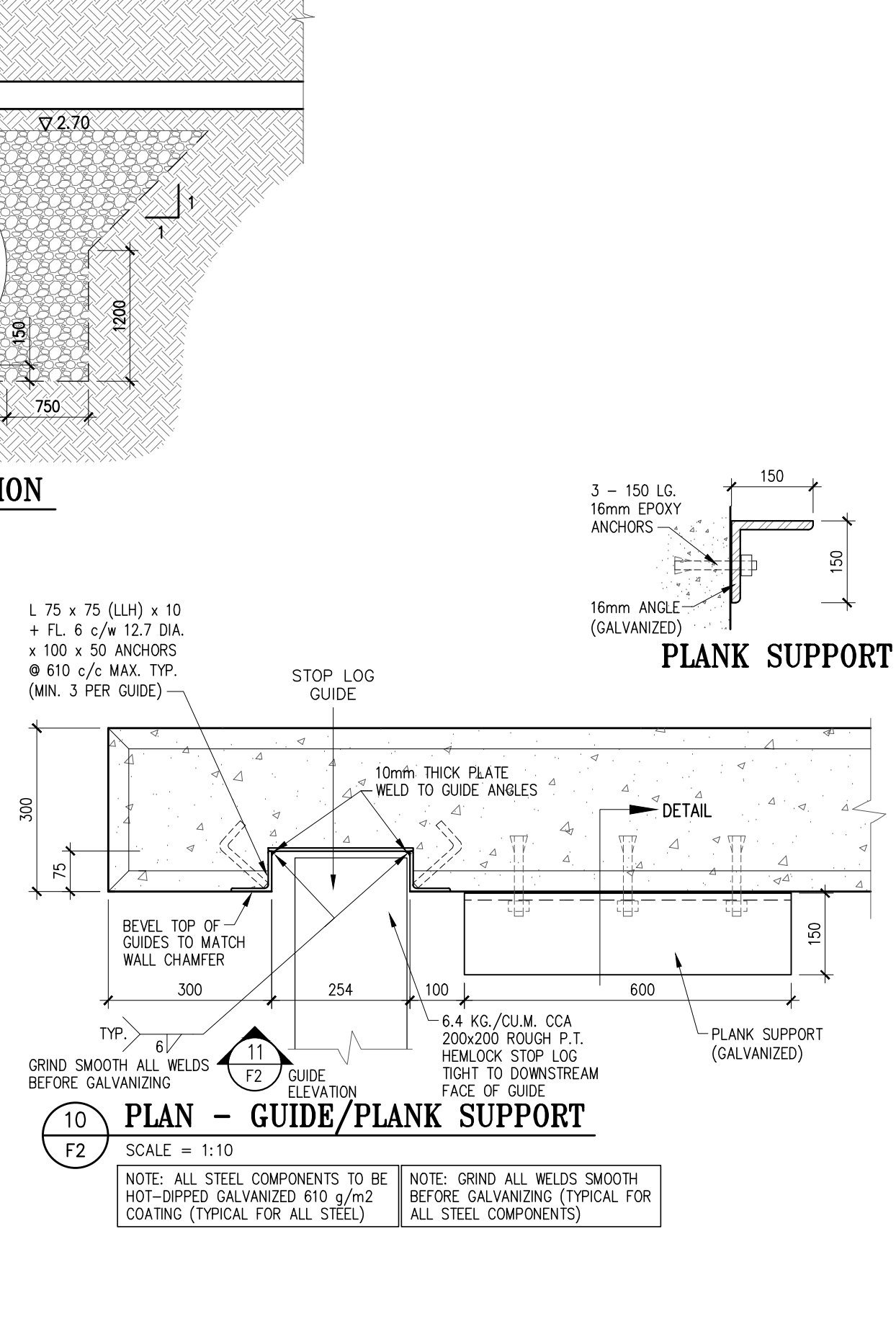
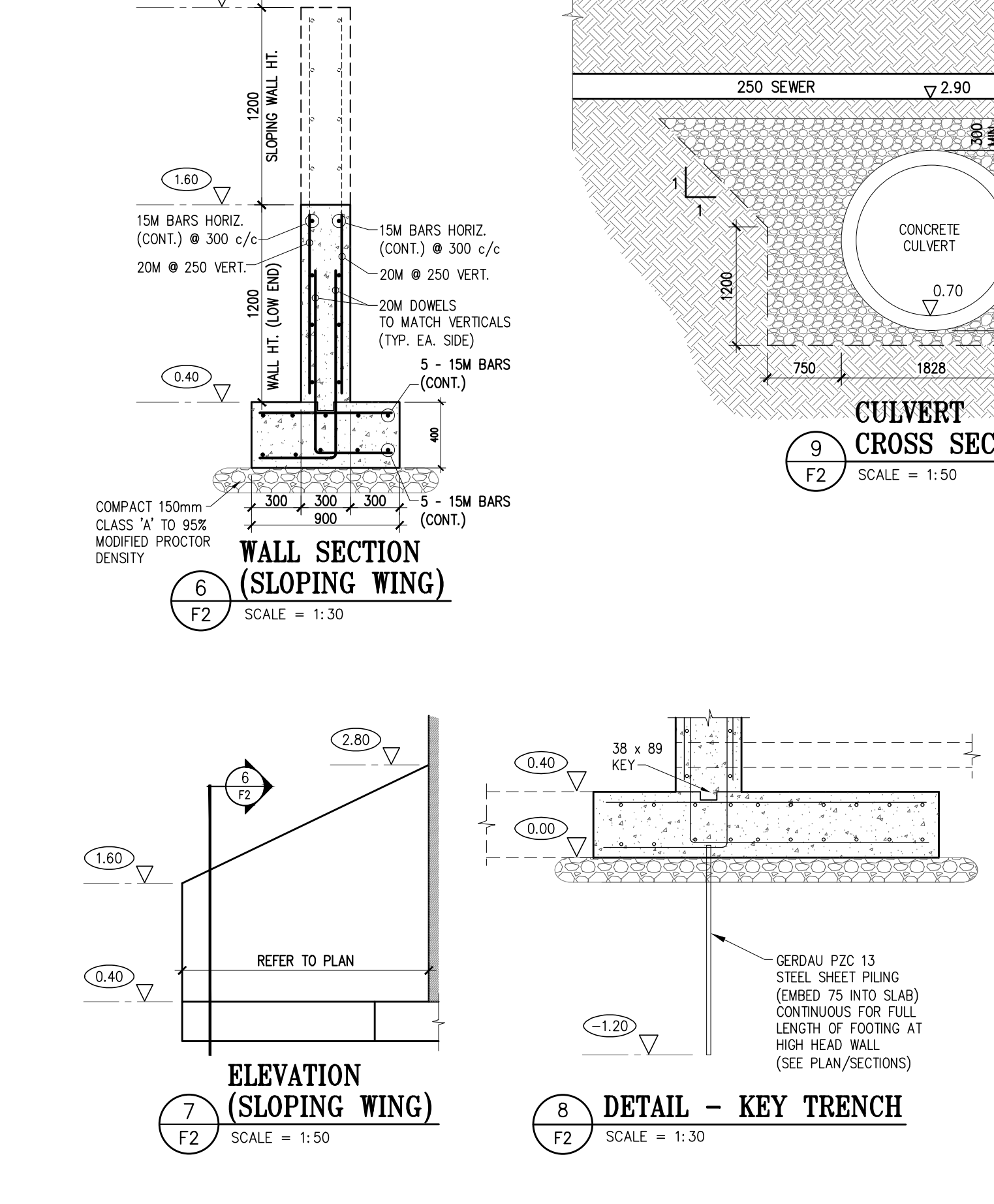
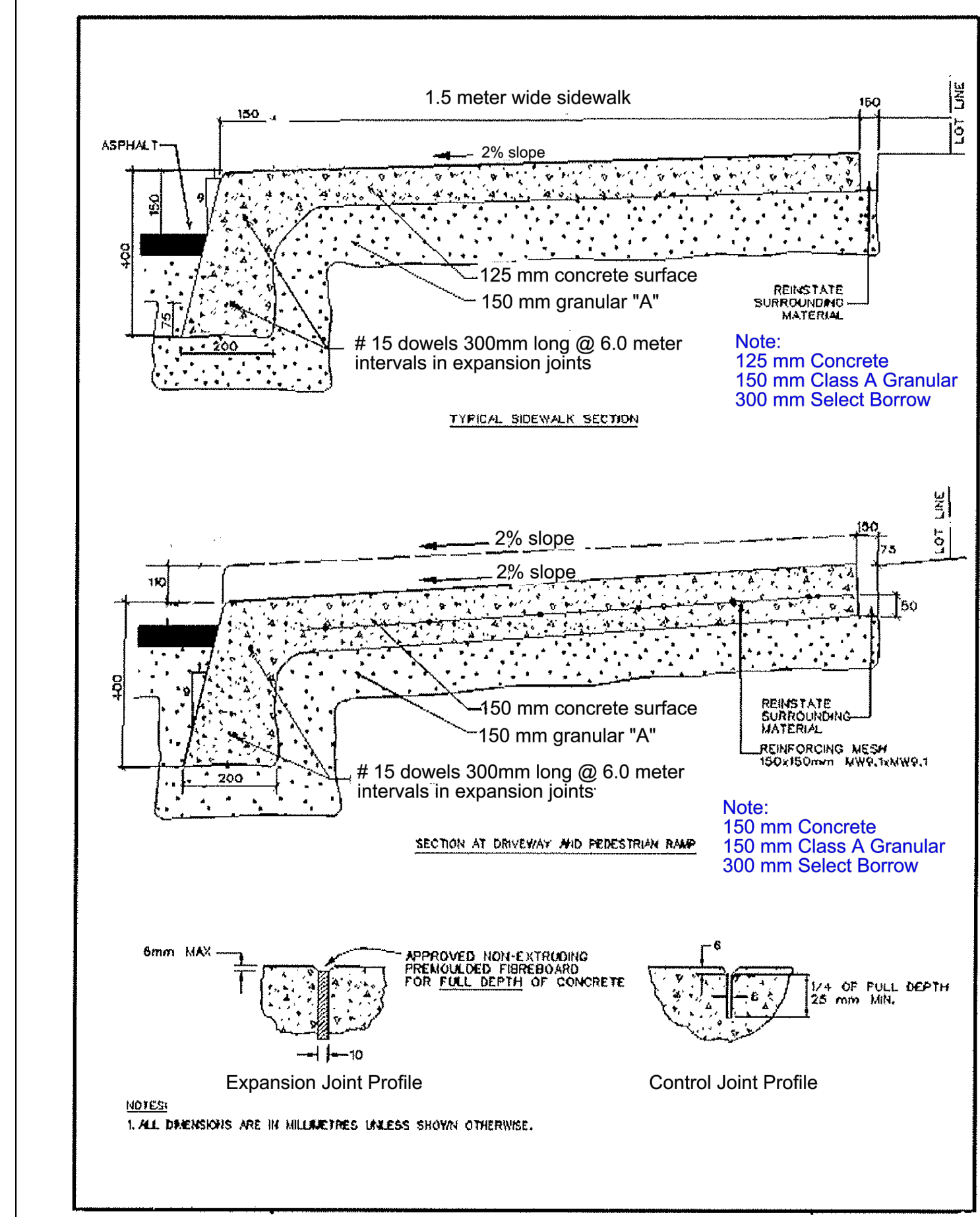
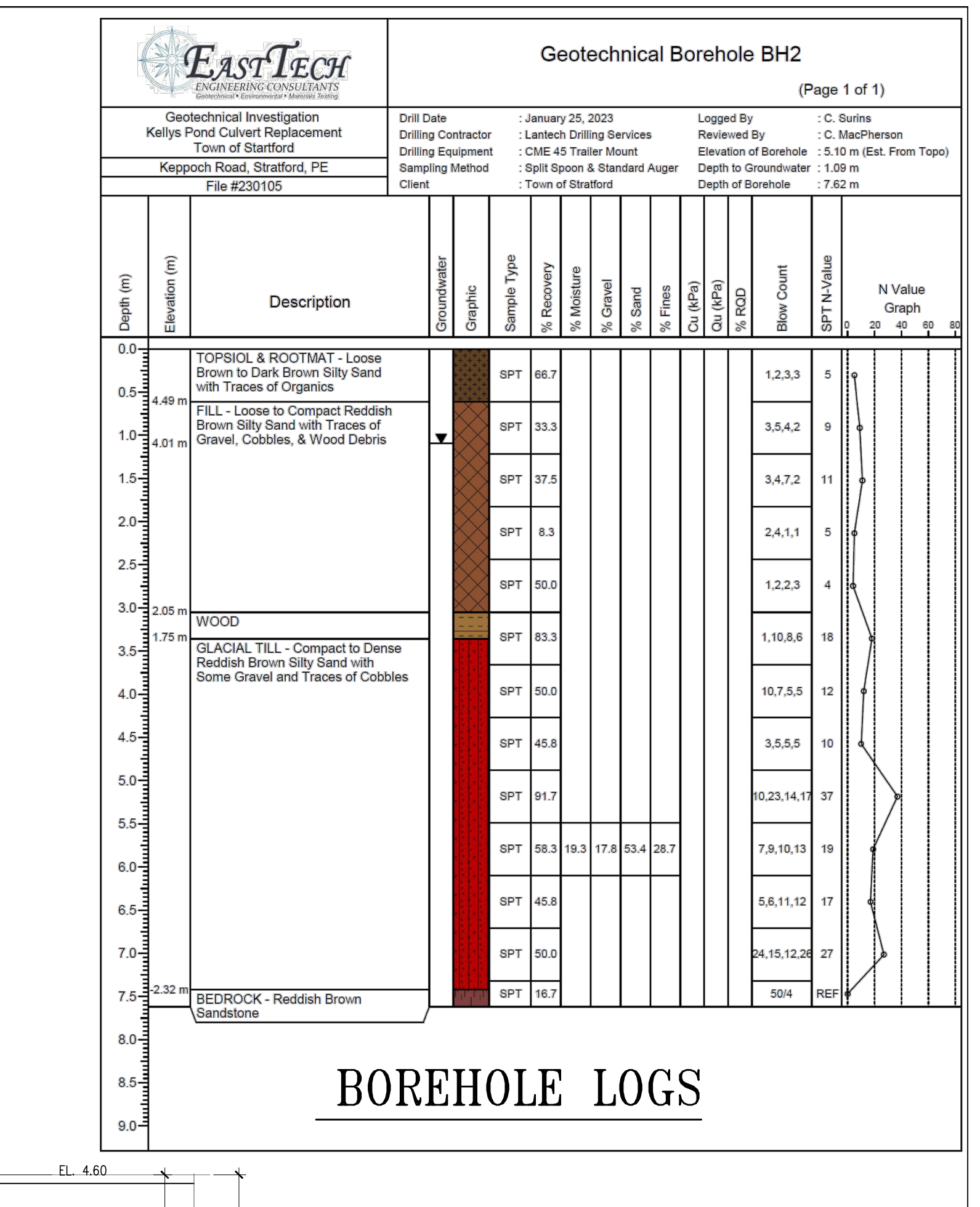
- REINFORCING STEEL - GENERAL NOTES:**
- ALL REINFORCING STEEL SHALL BE OF NEW BILLET CSA 630/18 AND HAVE A MINIMUM YIELD STRENGTH OF GRADE 400W.
 - ALL REINFORCING STEEL SHALL BE DETAILED, CUT BENT, FABRICATED AND PLACED IN ACCORDANCE WITH CSA CAN3-A23.1 AND SHALL BE INSPECTED BEFORE CONCRETE IS PLACED.
 - ALL REINFORCING STEEL SHALL BE LAPPED SUFFICIENT LENGTH TO DEVELOP BAR PER CSA 23.3.
 - THE CONTRACTOR SHALL PROVIDE CONTINUOUS SUPERVISION DURING THE PLACEMENT OF CONCRETE TO ENSURE THAT THE REINFORCING STEEL IS MAINTAINED IN ITS CORRECT POSITION.
 - LAP REQUIRED FOR REBARS: 40 x BAR DIA. (TYP.).
- FOUNDATION:**
- BEARING CAPACITY OF SOIL IS TAKEN AS 150 kPa.
 - PREPARE BASE FOR FOUNDATION AND SLAB AS PER SOILS REPORT.
 - SOIL CONSULTANT SHALL APPROVE THE FOUNDATION BASE BEFORE CONCRETE IS POURED.

- GENERAL NOTES:**
- ALL PROVINCIAL AND FEDERAL SAFETY GUIDELINES SHALL BE FOLLOWED.
 - BUOYANCY SAFETY FACTOR SHALL BE VERIFIED BY M.E.E. CONSULTANT.
 - ALL CODES TO CONFORM TO THE LATEST EDITION, AS APPLICABLE.

Project: KELLY'S POND STRATFORD, PE	Date: MARCH 07, 2024	Job no: -		7	REVISED - ISSUED FOR TENDER	03/07/24		McCullough Environmental Engineering 43 ROGERS AVE. Amherst, Nova Scotia B4H 2J7. C. (902) 664-4858 www.mccullough-ee.com	Drawing no: F1
	Scale: AS NOTED	Project no:		6	REVISED - ISSUED FOR TENDER	01/22/24			
FOUNDATION PLAN, CROSS SECTION (FLOW ELEVATION)	Drawn by: MGM	Checked by: GAL / MEE	5	REVISED - ISSUED FOR TENDER	04/19/23	4	ISSUED FOR TENDER	03/20/23	
	Checked by: GAL / MEE		4	ISSUED FOR TENDER	03/20/23	3	ISSUED FOR PERMIT	02/24/23	
			2	ISSUED FOR FINAL REVIEW	10/04/22	2	ISSUED FOR REVIEW	09/06/22	
			1	ISSUED FOR REVIEW	09/06/22	NO.	REVISIONS	NAME	DATE



Depth (m)	Elevation (m)	Description	Groundwater	Graphic	Sample Type	% Recovery	% Moisture	% Gravel	% Sand	% Fines	Cu (MPa)	Cu (PPH)	% FODD	Blow Count	SPT N-Value	N Value Graph
0.0	5.00	CRUSHED ASPHALT - With some Organics			SPT 33.3									58.87	17	
0.5	4.60	FILL - Compact Reddish Brown Silty Sand with Traces of Gravel & Cobbles			SPT 54.2									67.69	13	
1.0	4.20	FILL - Compact Reddish Brown Silty Sand with Traces of Gravel & Cobbles			SPT 33.3									75.84	12	
1.5	3.80	FILL - Loose Reddish Brown Silty Sand with Traces of Gravel, Cobbles, & Wood Debris			SPT 8.3									31.22	3	
2.0	3.40	FILL - Loose Reddish Brown Silty Sand with Traces of Gravel, Cobbles, & Wood Debris			SPT 12.5									24.31	4	
2.5	3.00	FILL - Loose Reddish Brown Silty Sand with Traces of Gravel, Cobbles, & Wood Debris			SPT 54.2									11.53	6	
3.0	2.60	FILL - Loose Reddish Brown Silty Sand with Traces of Gravel, Cobbles, & Wood Debris			SPT 91.7									65.75	12	
3.5	2.20	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT 54.2									36.44	10	
4.0	1.80	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT 68.7									58.91	15	
4.5	1.40	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT 37.5	19.6	14.2	57.0	28.8					7.88	18	
5.0	1.00	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT 62.5									22.57	16	
5.5	0.60	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT 79.2									20.17	16	33
6.0	0.20	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT 62.5									10.11	25	36
6.5	-0.20	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT 62.5									28.50	REF	
7.0	-0.60	GLACIAL TILL - Compact to Dense Reddish Brown Silty Sand with Some Gravel and Traces of Cobbles			SPT 4.2									501	REF	



Project: KELLY'S POND STRATFORD, PE	Date: MARCH 07, 2024	Job no.:		7	REVISED - ISSUED FOR TENDER	03/07/24		Garg Associates Limited Structural and Welding Consultants Lokesh Garg, M.Sc., P.Eng. President 3 Greenleaf Dr., Charlottetown Prince Edward Island C1A 8E7 Phone: (902) 566-5456, Fax: (902) 566-3598 email: lokeshgarg201@gmail.com	McCullough Environmental Engineering 43 ROGERS AVE. Amherst, Nova Scotia B4H 2J7. C. (902) 664-4858 www.mccullough-ee.com	Drawing no.:
	Scale: AS NOTED	Project no.:		8	REVISED - ISSUED FOR TENDER	01/22/24				
DETAILS	Drawn by: MGM	Checked by: GAL / MEE	9	ISSUED FOR TENDER	03/20/23					
				10	ISSUED FOR PERMIT	02/24/23				
			11	ISSUED FOR FINAL REVIEW	10/04/22					
			12	ISSUED FOR REVIEW	09/06/22					
			13	ISSUED FOR REVIEW	08/15/22					
			NO.	REVISIONS	NAME	DATE				