

1 General

1.1 RELATED SECTIONS

- .1 Section 01 56 00 – Temporary Barriers and Enclosures
- .2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- .1 The work covered by this Contract includes the replacement of sanitary collection piping, manholes and manhole adjustments including sanitary lateral piping. The work includes trenching, manhole installation, connection to existing underground piping as shown on the drawings.
 - .1 The work also includes flushing the existing system.
- .2 The Contractor shall supply all materials, labour and equipment required for construction of the sanitary collection system including earthworks, site development, and underground piping work as required to furnish a complete operational collection system.
- .3 The Contractor shall provide commissioning services for completed system.
- .4 Only items covered in the Unit Table will be measured for payment. All other items necessary to complete the work will be considered incidental to the project and will not be measured separately for payment.

1.3 FAMILIARIZATION WITH SITE

- .1 Before submitting a bid, it is recommended that bidders visit the site to review and verify the form, nature and extent of the work, materials needed, the means of access, and the temporary facilities required to perform the Work, and all information necessary for the proper carrying out of the work covered by this Specification. Submission of bill will be deemed that Contractor is conversant with site conditions.

1.4 CODES AND STANDARDS

- .1 Perform work in accordance with the National Building Code of Canada (of latest edition as adopted by the province and municipality of the work location) and any other code of the provincial or local application, including all amendments up to bid closing date, provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

1.5 INTERPRETATION OF DOCUMENTS

- .1 Supplementary to the Summary of Work of the contract, the Division 01 sections take precedence over the technical specification sections in other Divisions of the Specification Manual.

1.6 JOB MEETINGS

- .1 The Contractor shall schedule an initial job meeting prior to commencement of the Work at which time the schedule and method of execution of the Work is to be reviewed. The Departmental Representative, Contractor and all subcontractors are required to be present at this meeting.
- .2 The Contractor is required to attend, with the Departmental Representative, a minimum of one (1) project meeting per month. The Departmental Representative reserves the right to schedule additional meetings as deemed necessary at any point during the project.
- .3 The Contractor shall ensure that any equipment suppliers are present at all meetings as necessary.
- .4 Representatives from all suppliers, subcontractors, and/or other parties involved in the project shall be authorized to act on the party for which they represent.
- .5 The Contractor will preside at meetings, keep minutes of such meetings and file two (2) copies with the Departmental Representative within one (1) week after such meeting, and distribute copies of Minutes to all parties in attendance. Copies shall be distributed within three (3) days after meeting.

1.7 JOB MANAGEMENT

- .1 Employ at the job site, for the duration of construction operations, a competent and experienced staff consisting of:
 - .1 A superintendent for organizing and scheduling of job operations for all trades and general direction of the work, including continuous inspection of all work in compliance with these specifications as well as all design drawings.
 - .2 A labour foreman working under the direction of the superintendent to direct all operations involving labourers employed on this project by the Contractor.
- .2 All other trades on this project shall have a superintendent-foreman in charge of their respective operations who will be responsible to the Contractor's superintendent.

1.8 PROJECT SCHEDULE

- .1 The Contractor shall be required to submit a construction schedule within five (5) days of contract award, to the Departmental Representative for review and approval.

- .2 The Contractor shall be responsible for obtaining all materials and labour in sufficient quantities and at the appropriate times to ensure the project is completed in accordance with the approved schedule. Once the work has started, it shall proceed to completion without unnecessary interruptions.
- .3 The work to be carried out under this contract must be completed within the time limits set out in the terms of the contract.
- .4 The Departmental Representative is to notify the Contractor in writing of acceptance of the Construction Schedule. Comply with the Construction Schedule at all times. If, for any reason the Construction Schedule is not followed, immediately notify the Departmental Representative of the changes and submit a revised schedule for acceptance. Upon written acceptance by the Departmental Representative, this schedule will become the Construction Schedule.

1.9 PERMITS AND FEES

- .1 The Contractor is responsible for obtaining and paying for all appropriate permits. Any additional costs resulting from inspections by any public utilities or corporations shall be the responsibility of the Contractor.
- .2 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.
- .4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.
- .5 Submit to Departmental Representative, copy of quarry permit, if applicable, prior to start of quarry operations.
- .6 Comply with all requirements, recommendations and advise by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance of related work.

1.10 DIVISION OF WORK

- .1 The specifications and drawings are organized for convenience only. Neither the organization of the specifications into divisions, sections and parts nor the arrangement of drawings shall control the Contractor in dividing the work among subcontractors and suppliers or in establishing the extent of the work to be performed by a trade.
- .2 Extras, based on grounds of difference in interpretation of specifications and drawings as to which trade is to provide work, shall not be considered.
- .3

1.11 CONTRACTOR USE OF PREMISES

- .1 Coordinate use of premises under direction of Departmental Representative.
- .2 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .3 Repair or replace portions of existing works which have been altered during construction operations to match existing or adjoining work, as directed by Departmental Representative.
- .4 Access to all exits must be maintained during normal working hours and where work shall be performed outside of the normal working hours as defined by the Departmental Representative.
- .5 Limited on site parking is permitted for construction work force at the construction site.
- .6 Do NOT unreasonably encumber the site with materials and equipment. Move materials and/or equipment as directed by the Departmental Representative which interferes with Potato Research Centre's operations, or with operations of other contracts at the site.
- .7 Maintain the access road to the site and to the existing structures for the duration of the Contract. Access for emergency vehicles is to be kept open at all times.
- .8 Maintain access to the existing fire hydrants.
- .9 Provide temporary road improvements and alternative means where the Potato Research Centre's daily operations are negatively impacted.
- .10 The Contractor shall make every effort to limit the generation of dust and shall spray water on dust generating activities.
- .11 The Contractor shall make a continuous effort to clean haul roads of mud and dirt coming from the construction site.
- .12 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.12 OCCUPANCY AND USE OF EXISTING FACILITIES

- .1 The Departmental Representative will occupy premises of existing facilities during entire construction period. All connections to existing infrastructure as part of the new installation shall be done in such a way or at such a time that operation of the existing collection system is not compromised.
- .2 The Contractor is to coordinate with the Departmental Representative to ensure that all activities as part of the construction of the new collection system do not interfere with

operation of the existing collection system or any other usage of the site or existing facility by the Departmental Representative.

1.13 SUPPLY OF EQUIPMENT

- .1 All equipment, buildings, earthwork, and any other equipment required to make a complete functional system shall be supplied by the Contractor as part of this Contract.
- .2 There are no equipment items being supplied by the Departmental Representative as part of this system.

1.14 EXISTING SERVICES

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where work involves breaking into or connecting to existing services, give Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to tenant operations.
- .3 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
- .4 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility including power and communications services. Adhere to approved schedule and provide notice to affected parties.
- .5 Provide temporary services when directed by Departmental Representative to maintain critical building and tenant systems.
- .6 Provide adequate bridging over trenches which cross sidewalks or roads to permit normal traffic.
- .7 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .8 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .9 Record locations of maintained, re-routed and abandoned service lines.
- .10 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.15 DOCUMENTS REQUIRED AT SITE

- .1 Maintain at the job site, a minimum of one (1) copy of each of the following documents:
 - .1 Contract Drawings,
 - .2 Specifications,
 - .3 Addenda,
 - .4 Minutes of Meetings for all meetings conducted during the project,
 - .5 Reviewed Shop Drawings,
 - .6 List of Outstanding Shop Drawings,
 - .7 Change Orders,
 - .8 Other modifications to Contract,
 - .9 Field Test Reports,
 - .10 Copy of approved Work Schedule,
 - .11 Health and Safety Plan and other safety related documents,
 - .12 Copies of all permits required to complete the Work, and
 - .13 Other documents as specified.

1.16 SETTING OUT WORK

- .1 Do all detail surveys necessary for the work, including locating and maintaining working points, and establishing lines and elevations. Perform all layout work, and carefully preserve benchmarks, reference points and stakes.
- .2 Provide such mast, scaffolds, batter boards, lines, straight edges, templates and other devices as may be necessary to facilitate layout, construction and inspection of the work. Whenever necessary, suspend work for such reasonable time as may be necessary to permit the Departmental Representative to check or inspect any portion of the work. The Contractor will not be allowed any extra compensation or time for completion because of this suspension of work.
- .3 Elevations for various grades and features of the specified works to be referenced and properly related to a benchmark, which will be approved by the Departmental Representative.
- .4 Verify all grades, lines, levels, and dimensions shown on the drawings and report any errors or inconsistencies to the Departmental Representative before commencing work. Provide and maintain well built batter boards at all points to facilitate the progress of the work. Establish all other grades, lines, levels required to facilitate the work.

1.17 RECORD OF CONSTRUCTION

- .1 As work progresses, maintain accurate records to show all deviations from the contract drawings, with particular reference to work which will be concealed. Prior to the inspection of the work, for the issuance of the Final Certificate of Completion, provide the Departmental Representative with one set of white prints of the drawings with all deviations shown neatly thereon.

- .2 Provide "as-built" cross sections of any excavation, or fill work.

1.18 PAYMENT

- .1 Payment for all work under this contract to be according to the "Articles of Agreement".
- .2 Dimensional changes as directed by the Departmental Representative to suit existing conditions, but not resulting in additional work or materials, will not be considered as extra to the Contract.

1.19 WORKERS COMPENSATION

- .1 Contractor and all sub-contractors must be registered under the Workers Compensation Act and provide evidence of good standing.

1.20 PROTECTION AND REPAIR

- .1 Repair any damages resulting from operations under this contract.

1.21 LOCATION OF EQUIPMENT AND FIXTURES

- .1 Location of equipment, fixtures or any appurtenances indicated are to be considered approximate.

1.22 DISPOSAL OF DEBRIS

- .1 Debris, including construction materials not incorporated in the work, oil products and containers, and other materials of this nature will be disposed of in suitable locations off the site. Disposal is the responsibility of the Contractor.

1.23 ASBESTOS DISCOVERY

- .1 Demolition of spray or trowel-applied asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered in course of work, stop work and notify Departmental Representative immediately. Do not proceed with relevant work until written instructions have been received from Departmental Representative.
- .2 Removal of asbestos containing materials contained within the Hazardous Materials Disposal forms part of the work of this contract.

1.24 WORK COORDINATION

- .1 Contractor is responsible for coordinating the work of the various trades and pre-determining where the work of such trades interfaces with each other.

- .2 Develop coordination drawings when deemed required illustrating potential interference between work of various trades and distribute to all affected parties.
 - .1 Pay particular close attention to overhead work and within or near to building structural elements.
 - .2 Coordination drawings to identify all building elements, service lines, rough-in points and indicate from where various services are coming.
 - .3 Review coordination drawings at purposely called meetings. Have subcontractors sign-off on drawings and publish minutes of each meeting.
 - .4 Plan and coordinate work in such a way to minimize quantity of service line offsets.
 - .5 Submit copy of coordination drawings and meeting minutes to Departmental Representative.
- .3 Submission of shop drawings and ordering of prefabricated equipment or prebuilt components shall only occur once coordination meeting for such items has taken place between trades and all conditions affecting the work of the interfacing trades has been made known and accounted for.
- .4 Public Works and Government Services Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be resolved by him at no extra cost to the Contract.

1.25 OTHER CONTRACTS

- .1 Other contracts for work at the Potato Research Centre may be in progress, or future contracts may be tendered during the period of construction of this contract.
- .2 Cooperate with other Contractors in carrying out their respective works and carry out all instructions from the Departmental Representative in this regard.
- .3 Connect properly and coordinate work with that of other Contractors. If any part of the work under this Contract depends for its proper execution or result upon the work of another Contractor, report promptly to the Departmental Representative, in writing, any defects in the work of such other Contractors as may interfere with the proper execution of the work of this Contract.
- .4 Hold joint Health and Safety meetings at least every two(2) weeks and adopt the more stringent Health and Safety requirements whenever conflicts occur.

1.26 BILINGUAL NOTIFICATIONS

- .1 Factory embossed or recessed symbols illustrating equipment operation is an acceptable alternate to lettering.
- .2 Items supplied with factory-embossed or recessed lettering in one official language with an applied sticker or decal representing the second official language is not acceptable unless the Departmental Representative gives prior approval before any such items are ordered.
- .3 Public Works and Government Services Canada will not be responsible for re-stocking or re-ordering costs incurred by the Contractor as a result of his failure to ensure bilingual designation on such items.
- .4 The Contractor is responsible for ensuring that all trades are made aware of these requirements.

1.27 SITE CONDITIONS

- .1 Protect and/or maintain existing site conditions or areas not directly affected by work under this contract.

1.28 PROGRESSIVE CLEANING

- .1 Maintain site in tidy condition, free from accumulation of waste products and debris.
- .2 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .3 Waste Management:
 - .1 Refer to Section 01 74 21 – Construction/Demolition Waste Management and Disposal.

1.29 ACCEPTANCES

- .1 Notify Departmental Representative in writing when work is complete and ready for final inspection.
 - .1 Make a check of all work and correct all discrepancies, defects and outstanding work before sending notification.
- .2 Accompany Departmental Representative during final inspection.
- .3 Rectify all defects, faults and outstanding items identified by Departmental Representative during inspection.

- .4 Be aware that the Final Certificate of Completion will not be issued until such time that the Contractor has fully completed and turned over all specified as-built project documents, training and maintenance manuals, test results and any guarantee/warranty certificates as issued by any manufacturer.

2 Products

2.1 NOT USED.

END OF SECTION

1 General

1.1 SCOPE OF WORK

- .1 The Contractor shall supply all materials, labour and equipment required for construction of the Works described herein and as indicated on the drawings.

1.2 GENERAL SURFACE RESTORATION

- .1 Contractor shall make every effort to keep to a minimum, disturbances to the general public as a result of his operation. In this regard, he shall so organize his work that general surface restoration procedures are maintained closely behind the excavation, pipe installation and backfilling operations in each area of the work.
 - .1 Trenches across existing roadways shall be restored with 450 mm of granular sub-base material and 150 mm of granular base course material.
 - .2 Any existing roadways, access roads and parking areas which are paved shall be repaired or reinstated. Pavement type and thickness to match existing.
 - .3 Any existing roadways, access roads and parking areas which are gravel surfaced shall be repaired or reinstated to match existing.
 - .4 Existing grassed areas on rights-of-way or boulevards shall be restored as closely as practicable to their original location and condition. Topsoil and seeding shall be in accordance with Section 32 92 24 – Landscaping.
 - .5 Existing fences, shrubbery, ornamental trees, etc. on rights-of-ways shall be restored by the Contractor as closely as practicable to their original location and condition.
 - .6 All of the above restoration by the Contractor shall be considered incidental to the work, and no additional payment will be made for same.

1.3 DUST CONTROL

- .1 The Contractor shall make every effort to control dust during the course of construction. The Contractor shall be responsible for periodically sweeping dust and dirt from adjacent streets as required. In addition, the Contractor shall be responsible for having a watering truck available at all times for wetting down adjacent streets to supplement the sweeping. The adequacy of dust control will be determined by the Departmental Representative. If the Contractor fails to provide adequate dust control, the Departmental Representative will do so. Any costs incurred by the Departmental Representative for dust control will be invoiced to the Contractor or deducted from the final Progress Claim. No separate payment will be made for dust control.

1.4 SUPPLY OF MATERIALS

- .1 The Contractor shall supply all materials required for the construction of the Works unless otherwise noted.

1.5 LAYOUT

- .1 The Contractor assumes full responsibility for and executes complete layout of work to locations, lines and elevations indicated.
- .2 Supply stakes and other survey markers required for laying out work.
- .3 Provide devices needed to lay out and construct work.
- .4 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.

1.6 USE OF HYDRANTS AND WATER

- .1 The supply of water, as and when required, is the Contractor's responsibility.
- .2 Use of hydrants by the Contractor shall not be permitted.
- .3 The Contractor shall at all times keep all hydrants, water valves, stop cocks, manholes and drainage systems clear and accessible.

1.7 OTHER UTILITIES

- .1 The Contractor will be responsible for protection and repair of all aerial or underground services and utilities. The Contractor shall also be responsible for contacting the appropriate agencies to mark locations of their services prior to beginning excavations. The Contractor is responsible for contacting the gas utility, if required. The Contractor is responsible for all service charges levied as a result of inspection services provided by the utilities.

1.8 TESTING OF MAINS

- .1 All gravity sewer mains 600 mm or less shall be tested.
 - .1 Storm sewer cross laterals are also to be tested.
 - .2 Video inspection shall be done on all concrete storm sewer mains 600 mm or less that do not pass air testing.
- .2 All mains to be tested:
 - .1 Sanitary Sewer: air test and video inspection.
 - .2 Storm Sewer: air test and video inspection.
- .3 Video Inspection:
 - .1 Video inspection done between 9 and 12 months after completion shall be Warranty Video Inspections.
 - .2 Video inspection reports shall include the video record on DVD appropriately marked and dated as well as the written report.
 - .3 All new gravity sewer mains 600 mm or less shall be video inspected between 9 and 12 months after completion. Concrete storm sewer mains 600 mm or less

- that do not pass air testing shall be video inspected once upon completion, and video inspected a second time between 9 and 12 months after completion.
- .4 Gravity mains that are put into service as they are installed cannot be air tested and therefore these mains shall be visually inspected during installation, video inspected once upon completion, and video inspected a second time between 9 and 12 months after completion.
 - .5 Gravity mains greater than 600 mm cannot be air tested and therefore these mains shall be visually inspected during installation, video inspected once upon completion, and video inspected a second time between 9 and 12 months after completion.

1.9 PROPERTY PINS

- .1 The Contractor shall take particular care to protect property pins during the course of construction. Should any property pins be disturbed by the Contractor, he shall have them replaced by a registered New Brunswick Land Surveyor at no additional cost to the Public Works and Government Services Canada or the property owner.

1.10 BARRICADES, BARRICADE UPRIGHTS, TRAFFIC DELINEATION DEVICES

- .1 The Contractor shall provide all light (sawhorse) barricades for protection of the public from the construction activity. Supply of erection and maintenance of barricades shall not be measured for payment but shall be considered incidental to the work.
- .2 The Contractor shall provide all barricade uprights (for heavy barricades); traffic cones and traffic channelizer barrels to control and/or delineate traffic as required in Item 12 Construction and Detour Signing. All delineation devices shall meet NBDTI specifications. Supply, erection and maintenance of barricade uprights, traffic cones and channelizer barrels shall not be measured for payment but shall be considered incidental to the work.
- .3 The Contractor will submit for approval, the type of barricades to be used under section 01 33 00.

1.11 REPAIR AND ABANDONMENT OF EXISTING MAINS AND SERVICE LATERALS

- .1 The Contractor shall provide all labour, materials and equipment to repair all existing sewers damaged as a result of construction. Piping materials used for repair work shall be similar to those damaged or an approved equal. No additional payment will be made for such repairs.
- .2 All services that are abandoned during construction shall be plugged permanently by concrete; brick and mortar, cap or plug; or a method approved by the Departmental Representative.

1.12 CONSTRUCTION AND DETOUR SIGNING

- .1 The installation and maintenance of all construction and/or detour signing shall be the responsibility of the Contractor. All required signs shall be maintained during non-work hours as well as during hours of construction.
- .2 All required signs shall be installed BEFORE construction begins and shall remain in place for the duration of the construction period.
- .3 Signs such as "Road Work (Men Working)" signs and "Signaller Ahead" signs that are only required when workers and/or traffic control persons are present shall remain in place while these conditions exist. These signs shall be covered or turned during non-work hours or when there are no workers or traffic control persons present.
- .4 The Contractor will be required to maintain access to all developed properties.
- .5 Traffic control persons (flag persons) shall be supplied by the Contractor and shall be trained in proper traffic control procedures.
- .6 From time to time the Contractor, at the discretion of the Departmental Representative, may be required to install additional signing.
- .7 The Contractor shall comply with the traffic safety requirements of the New Brunswick Occupational Health and Safety Act.
- .8 The Contractor will follow the latest edition of the NBDTI Work Area Traffic Control Manual.

1.13 SCHEDULE

- .1 Once work has been initiated no stoppage will be permitted without authorization by the Departmental Representative.

1.14 TEMPORARY POWER

- .1 Provide and pay for temporary power required during construction for temporary lighting and the operation of power tools.

1.15 LOCAL ACCESS

- .1 Provide access for local traffic at all times during construction.

1.16 GENERAL PROTECTION

- .1 All employees for the Contractor shall wear the following safety clothing while on the construction site:
 - .1 Hard hats (CSA approved) to be worn at ALL times except when in a vehicle.
 - .2 Safety boots (CSA approved) to be worn at ALL times.
 - .3 Long pants and a shirt are required at ALL times.
 - .4 Safety vests, safety T-shirts or orange coveralls must be worn.
 - .5 Orange coveralls are not acceptable for night-time operations or for traffic control persons.
- .2 The Contractor shall comply with all requirements under the Occupational Health and Safety Act and its Regulations. A copy of the Act and Regulations can be obtained by contacting the WHSCC (reference: Regulation 91-191.). The Departmental Representative requires that the contractor comply with these minimum standards.
- .3 W.H.M.I.S. - Workplace Hazardous Materials Information Systems & Hazardous Products Act - Government of Canada:
 - .1 Regulations under the Hazardous Products Act and the regulations regarding the handling and storage of hazardous materials must also be complied with (reference: Regulation 88-221). These regulations stipulate that employees must be trained in the proper handling of workplace hazardous material. The Departmental Representative requires that the contractor also comply with these regulations.
 - .2 The successful Contractor or vendor must provide all MSDS sheets to the Departmental Representative prior to shipment and use of all hazardous materials.

1.17 PROTECTION OF TREES

- .1 The Contractor must protect all trees outside the work area from deliberate injury. Tearing of the root structure or damage to the trunk and foliage with the backhoe bucket or any other equipment will not be tolerated.
- .2 A minimum of 24 hours notice shall be provided by the Contractor. Any costs incurred by the Departmental Representative as a result of damage to trees shall be deducted from the progress claims.

1.18 DEWATERING

- .1 Excavations shall be de-watered at all times.

1.19 MEASUREMENT AND PAYMENT

- .1 Where the Contract allows for payment on a unit price basis, only those items listed in the Schedule of Contract Unit Prices in the Bid Form will be measured for payment. Any items of work, materials or equipment not listed will be considered incidental to the

Work. Costs associated with this incidental work will be included with the items for which the Work is required.

1.20 SPILL MANAGEMENT

- .1 The Contractor shall ensure that equipment used during the construction be mechanically sound, having no leaking fuel tanks or hydraulic systems, and that all necessary precautions be taken to prevent the discharge or loss of any contaminant on the work site including but not limited to creosote, hydrocarbons, biocides, paint or concrete.

2 Products

2.1 NOT USED.

3 Execution

3.1 NOT USED.

END OF SECTION

1 General

1.1 RELATED SECTIONS

- .1 Section 01 11 00 - Summary of Work.
- .2 Section 01 35 43 - Environmental Procedures.

1.2 ACCESS AND EGRESS

- .1 Design, construct and maintain temporary "access to" and "egress from" work areas, including stairs, runways, ramps or ladders, and scaffolding, independent of finished surfaces and in accordance with relevant municipal, provincial and other regulations.

1.3 USE OF SITE AND FACILITIES

- .1 Execute work with least possible interference or disturbance to normal use of premises. Make arrangements with Departmental Representative to facilitate work as stated.
- .2 Maintain existing services to the site and the existing wastewater collection system and provide for personnel and vehicle access as required.
- .3 The Contractor is responsible for providing sanitary facilities at the site for construction crew. Facilities shall be kept clean.

1.4 TRANSPORTATION TO AND FROM SITE

- .1 Transportation of equipment to and from the site shall be conducted only between 0700 hrs and 2000 hrs unless otherwise approved by the Departmental Representative.

1.5 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING SANITARY COLLECTION SYSTEM

- .1 Execute work with least possible interference or disturbance to existing sanitary collection system, and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.

1.6 EXISTING SERVICES

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours notice for necessary interruption of mechanical or electrical service throughout course of Work. Keep duration of interruptions to a minimum.
- .3 Provide for personnel and vehicular traffic.

- .4 Construct barriers in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

1.7 SPECIAL REQUIREMENTS

- .1 Carry out noise-generating work Monday to Friday between 0700 hrs and 2000 hrs.
- .2 Submit schedule in accordance with Section 01 32 18 - Construction Progress Schedules - Bar (GANTT) Chart.
- .3 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .4 Keep within limits of work and avenues of ingress and egress.
- .5 Ingress and egress of Contractor vehicles is limited to the site entrance off of Lincoln Road as shown on the Drawings.
- .6 Maintain Lincoln Road open to two lanes of traffic from 0700 hrs to 0900hrs and 1600 hrs to 1800 hrs Monday to Friday. Traffic may be reduced to one lane at other times. Road occupancy permit is required by the City of Fredericton as well as a minimum of 72 hrs advanced notification of road work activities.

1.8 FACILITY SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions.

2 Products

2.1 NOT USED.

3 Execution

3.1 NOT USED.

END OF SECTION

1 General

1.1 ADMINISTRATIVE

- .1 Coordinate project meetings with the Departmental Representative throughout the progress of the Work.
- .2 Coordinate with all applicable subcontractors and suppliers to ensure that a representative is present at all meetings. Representatives shall be authorized to act on behalf of the party each represents.

1.2 PRE-CONSTRUCTION MEETING

- .1 Within 15 days after award of Contract, request an on-site meeting of parties in contract to discuss and resolve administrative procedures and responsibilities. Senior representatives of the Departmental Representative, Contractor, major Subcontractors will be in attendance.
- .2 Establish time and location of meeting and notify parties concerned a minimum of five (5) days before meeting.
- .3 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .4 Agenda to include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with Section 01 32 18 – Construction Progress Schedules – Bar (GANTT) Chart.
 - .3 Schedule of submission of shop drawings, design drawings, samples, colour chips. Submittals shall be in accordance with Section 01 33 00 – Submittal Procedures.
 - .4 Requirements for temporary facilities, site security, storage sheds, utilities, fences in accordance with Section 01 53 00 – Temporary Facilities.
 - .5 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
 - .6 Record drawings in accordance with Section 01 33 00 – Submittal Procedures.
 - .7 Maintenance manuals in accordance with Section 01 78 00 – Contract Closeout.
 - .8 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00 – Contract Closeout.
 - .9 Monthly progress claims, administrative procedures, photographs, hold backs.
 - .10 Appointment of inspection and testing agencies or firms.
 - .11 Insurances, transcript of policies.

1.3 PROGRESS MEETINGS

- .1 During course of Work, schedule monthly progress meetings. Schedule an additional progress meeting two (2) weeks prior to project completion. The Departmental

Representative reserves the right to schedule additional progress meetings throughout the course of the Work.

- .2 Contractor, Subcontractors involved in Work and Departmental Representative are to be in attendance.
 - .3 Agenda to include the following:
 - .1 Review and approval of minutes of previous meeting.
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts.
 - .4 Problems which impede construction schedule.
 - .5 Review of off-site fabrication delivery schedules.
 - .6 Corrective measures and procedures to regain projected schedule (if necessary)
 - .7 Revision to construction schedule.
 - .8 Progress schedule during succeeding work period.
 - .9 Review of submittal schedules: expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review of proposed changes for affect on construction schedule and on completion date.
 - .12 Other business.
-
- 2 Products
 - 2.1 NOT USED.
 - 3 Execution
 - 3.1 NOT USED.

END OF SECTION

1 General

1.1 DEFINITIONS

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, expected cost, and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): graphic display of schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized project management system.
- .3 Baseline: original approved plan (for project, work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Friday, inclusive, will provide five-day work week and define schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of work periods (not including holidays or other nonworking periods) required to complete activity or other project element. Usually expressed as workdays or workweeks.
- .6 Master Plan: summary-level schedule that identifies major activities and key milestones.
- .7 Milestone: significant event in project, usually completion of major deliverable.
- .8 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision-making throughout project life cycle.
- .9 Project Planning, Monitoring and Control System: overall system operated by the Departmental Representative to enable monitoring of project work in relation to established milestones.

1.2 REQUIREMENTS

- .1 Ensure Master Plan and Detail Schedules are practical and remain within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.

1.3 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit to the Departmental Representative, within 10 working days of Award of Contract, a Bar (GANTT) Chart as Master Plan for planning, monitoring and reporting of project progress.
- .3 Submit Project Schedule to the Departmental Representative within five (5) working days of receipt of acceptance of Master Plan.

1.4 PROJECT MILESTONES

- .1 Project milestones to be included (but not limited to) as targets for Project Schedule.
 - .1 Kickoff meeting;
 - .2 Completion of all yard piping and inground structures, and connection to existing sanitary collection system;
 - .3 Substantial completion;
 - .4 Commissioning.

1.5 MASTER PLAN

- .1 Structure schedule to allow orderly planning, organizing and execution of Work as Bar Chart (GANTT).
- .2 The Departmental Representative will review and return revised schedules within five (5) working days.
- .3 Revise impractical schedule and resubmit within five (5) working days.
- .4 Accepted revised schedule will become Master Plan and be used as baseline for updates.

1.6 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule derived from Master Plan.
- .2 Ensure detailed Project Schedule includes as minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Permits.
 - .3 Mobilization.
 - .4 Excavation.
 - .5 Yard Piping.
 - .6 Work along Lincoln Road.
 - .7 Work along primary access.
 - .8 Work along secondary access.

- .9 Tie-in.
- .10 Restoration.
- .11 Testing, and Commissioning.

1.7 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on weekly basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule, narrative report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.
- .3 Submit updated Project Schedule and accompanying reports/documentation to the Departmental Representative.

1.8 PROJECT MEETINGS

- .1 Conduct project meetings in accordance with Section 01 31 00 – Project Meetings.
- .2 Discuss Project Schedule at regular site meetings, identify activities that are behind schedule and provide measures to regain slippage. Activities considered behind schedule are those with projected start or completion dates later than current approved dates shown on baseline schedule.
- .3 Weather-related delays with their remedial measures will be discussed and negotiated.

2 Products

2.1 NOT USED.

3 Execution

3.1 NOT USED.

END OF SECTION

1 General

1.1 ADMINISTRATIVE

- .1 Submit to the Departmental Representative submittals listed for review. Submit promptly and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units, converted values are acceptable. Present converted values in SI Metric Units followed by original value and units in parentheses. Review submittals prior to submission to the Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .5 Notify the Departmental Representative in writing at time of submission, identifying deviations from requirements of Contract Documents and stating reasons for deviations.
- .6 Verify that field measurements and affected adjacent Work are coordinated.
- .7 The Contractor's responsibility for errors and omissions in submission is not relieved by the Departmental Representative's review of submittals.
- .8 The Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by the Departmental Representative's review.
- .9 Submittal Format: paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved, by Departmental Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and be returned for resubmission.
- .10 Make changes or revision to submissions which Departmental Representative may require, consistent with Contract Documents and resubmit as directed by Departmental Representative. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.
- .11 Keep one reviewed copy of each submission on site.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.
- .3 Allow ten (10) working days for the Departmental Representative's review of each submission.
- .4 Adjustments made on shop drawings by the Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Departmental Representative prior to proceeding with Work.
- .5 Make changes in shop drawings as the Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify the Departmental Representative in writing of revisions other than those requested.
- .6 Accompany submissions with transmittal letter containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data, and sample.
 - .5 Other pertinent data.
- .7 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.

- .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
 - .11 Process flow diagrams.
 - .12 Process and instrumentation diagrams.
-
- .8 After the Departmental Representative's review, distribute copies.
 - .9 Submit electronic copy of shop drawings for each requirement requested in specification Sections and as the Departmental Representative may reasonably request.
 - .10 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by the Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
 - .11 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by the Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory verifying that material, product or system identical to material, product or system to be provided has been tested in accordance with specified requirements.
 - .2 Testing must have been within 3 years of date of contract award for project.
 - .12 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by the Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract, complete with project name.
 - .13 Submit electronic copies of manufacturer's instructions for requirements requested in specification Sections and as requested by the Departmental Representative.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
 - .14 Submit electronic copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by the Departmental Representative.
 - .1 Documentation of the testing and verification actions taken by Manufacturer's Representative to confirm compliance with manufacturer's standards or instructions.
 - .15 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by the Departmental Representative.

- .16 Delete information not applicable to project.
- .17 Supplement standard information to provide details applicable to project.
- .18 If upon review by the Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, electronic copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

1.3 SAMPLES

- .1 Submit for review samples as requested in respective specification Sections. Label samples with origin and intended use.
- .2 Deliver samples prepaid to the Departmental Representative's business address.
- .3 Notify the Departmental Representative in writing, at time of submission, of deviations in samples from requirements of Contract Documents.
- .4 Where colour, pattern or texture is criterion, submit full range of samples.
- .5 Adjustments made on samples by the Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to the Departmental Representative prior to proceeding with Work.
- .6 Make changes in samples which the Departmental Representative may require, consistent with Contract Documents.
- .7 Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.

1.4 CERTIFICATES

- .1 Immediately after award of Contract, submit WorkSafe NB status.

1.5 RECORD DRAWINGS

- .1 After award of Contract, the Departmental Representative will provide a set of white prints and one set of specifications for the purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by the Departmental Representative. Changes to the work by way of addenda issued by the Departmental Representative will be recorded on the original drawings by the Departmental Representative.
- .2 Record locations of concealed components of mechanical and electrical services.
- .3 Identify drawings as "Project Record Copy." The progress of recording and preparing record drawings shall be reported at each job meeting.

- .4 Upon completion of work and prior to final inspection, submit record documents to
 Departmental Representative.

- 2 Products

- 2.1 NOT USED.

- 3 Execution

- 3.1 NOT USED.

END OF SECTION

1.1 RELATED WORK

- .1 Section 01 33 00 – Submittal Procedures.

1.2 DEFINITIONS

- .1 COSH: Canada Occupational Health & Safety Regulations made under Part II of the Canada Labour Code.
- .2 Competent Person means a person who is:
 - .1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace.
 - .2 Knowledgeable about provisions of occupational health and safety statutes and regulations that apply to the work.
- .3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
- .4 PPE: personal protective equipment.
- .5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.

1.3 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Submit site-specific Health & Safety Plan prior to commencement of Work.
 - .1 Submit within ten (10) working days of notification of Bid Acceptance. Provide three (3) copies.
 - .2 Departmental Representative will review Health & Safety Plan and provide comments.
 - .3 Revise the Plan as appropriate and resubmit within ten (10) working days after receipt of comments.
 - .4 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
 - .5 Submit revisions and updates made to the Plan during the course of Work.
 - .6 Submit name of designated Health and Safety Site Representative and support documentation specified in the Safety Plan.

- .7 Submit copy of Letter of Good Standing from Worksafe NB or other Department of Labour organization.
- .1 Submit update of Letter of Good Standing whenever expiration date occurs during the period of Work.
- .8 Submit copies of reports or directions issued by federal or provincial Health and Safety inspectors.
- .9 Submit copies of incident reports.
- .10 Submit WHMIS Material Safety Data Sheets (MSDS).

1.4 COMPLIANCE REQUIREMENTS

- .1 Comply with the Occupational Health and Safety Act for the Province of New Brunswick, and the General Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II (entitled Occupational Health and Safety), and the Canada Occupational Safety and Health Regulations (COSH) as well as any other regulations made pursuant to the Act.
 - .1 The Canada Labour Code can be viewed at:
[www.http://laws.justice.gc.ca/en/L-2/](http://laws.justice.gc.ca/en/L-2/)
 - .2 COSH can be viewed at:
[www.http://laws.justice.gc.ca/eng/SOR-86-304/n e.html](http://laws.justice.gc.ca/eng/SOR-86-304/n e.html).
- .3 A copy may be obtained at: Canadian Government Publishing Public Works & Government Services Canada Ottawa, Ontario, K1A 0S9. Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F.
- .4 Observe construction safety measures of:
 - .1 National Building Code – Part 8.
 - .2 Municipal by-laws and ordinances.
- .5 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.
- .6 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide Clearance Certificate from WorkSafe NB.
- .7 Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.

1.5 RESPONSIBILITY

- .1 Be responsible for Health and Safety of persons on site, safety of property on site, and for protection of persons and the environment adjacent to the site to the extent that they may be affected by the conduct of the Work.

- .2 Comply with and enforce compliance by all workers, subcontractors and other persons granted access to Work Site with safety requirements of Contract Documents, applicable federal, provincial, and local by-laws, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.6 SITE CONTROL AND ACCESS

- .1 Control the Work and entry points to Work site. Approve and grant access only to Workers and authorized persons. Immediately stop and remove non-authorized persons.
- .2 Isolate Work Site from other areas of the premises by use of appropriate means.
 - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work to create a safe environment.
 - .2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access. Use professionally made signs with bilingual message in both official languages or international known graphic symbols.
- .3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.
- .4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.

1.7 PROTECTION

- .1 Provide temporary facilities for protection and safe passage of public pedestrians and vehicular traffic around and adjacent to work site.
- .2 Provide safety barricades, lights and signage on work site as required, providing a safe working environment for workers.
- .3 Carry out work placing emphasis on health and safety of the public, facility personnel, and construction workers as well as protection of the environment.
- .4 Should an unforeseen or peculiar safety related hazard or condition become evident during performance of the work, immediately take measures to rectify the situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.8 FILING OF NOTICE

- .1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning Work.
- .2 Departmental Representative will assist in locating address if needed.

1.9 PERMITS

- .1 Post permits, licenses at work site.
- .2 Where a particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying out application portion of Work.
- .3 Obtain permits, licenses and compliance certificates, at appropriate times and frequency as stipulated by authorities having jurisdiction.

1.10 HAZARD ASSESSMENTS

- .1 Perform site specific health and safety hazard assessment of the Work and its site.
- .2 Carry out initial assessment prior to commencement of Work with further assessments as needed during progress of work, including when new trades and subcontractors arrive on site.
- .3 Record results and address in Health and Safety Plan.
- .4 Keep documentation on site for entire duration of the Work.
- .5 Implement and carry out a health and safety hazard assessment program as part of the work. Program to include:
 - .1 Initial hazard assessments carried out immediately upon notification of contract award and prior to commencement of work.
 - .2 On-going hazard assessments performed during the progress of work identifying new or potential health risks and safety hazards not previously known. As a minimum hazard assessments shall be carried out when:
 - .1 New subtrade work, new subcontractor (s) or new workers arrive at the site to commence another portion of the work.
 - .2 The scope of work has been changed by Change Order.
 - .3 Potential hazards or weakness in current health and safety practices are identified by Departmental Representative or by an authorized safety representative.
- .6 Each hazard assessment to be made in writing. Keep copies of all assessments on site for duration of work. Upon request, make available to Departmental Representative for inspection.

1.11 PROJECT/SITE CONDITIONS

- .1 Following are potential health, environmental and safety hazards at the site:

- .1 Working near trenches.
 - .2 Working in trenches.
 - .3 Working with heights.
 - .4 Working on slopes.
 - .5 Unstable working surfaces.
 - .6 Inclement weather.
 - .7 Working with asbestos.
 - .8 Working around traffic and pedestrians.
- .2 Facility ongoing operations:
- .1 The Contractor will cooperate with users of existing facilities. Maintain access to the existing buildings and consult with the Departmental Representative for site access limitations.
 - .2 Should interferences occur, take directions from Departmental Representative.
 - .3 Do not unreasonably encumber site with materials.
 - .4 Move stored products or equipment which interfere with operations.
 - .5 Comply with all regulations and authorities having jurisdiction over the work, whether on land.

1.12 SAFETY MEETINGS

- .1 Prior to commencement of work, attend Health and Safety meeting conducted by Departmental Representative. Have Contractor's Site Superintendent in attendance. Departmental Representative will advise of time and location.
- .2 Provide site safety orientation sessions to all workers and other authorized persons prior to granting them access to work site. Brief persons on site conditions and on the minimum site safety rules in force at site.
- .3 Conduct site-specific occupational health and safety meetings during the entire work as follows:
 - .1 Formal meetings on a minimum monthly basis.
 - .2 Informal tool box meetings on a regular basis from a predetermined schedule.
 - .3 Keep workers informed of anticipated hazards, on safety practices and procedures to be followed and of other pertinent safety information related to:
 - .1 Progress of Work,
 - .2 New sub-trades arriving on site, and
 - .3 Changes in site and project conditions.
- .4 Record and post minutes of meetings. Make copies available to Departmental Representative upon request.

1.13 HEALTH AND SAFETY PLAN

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization.
- .2 Health and Safety Plan shall include the following components:
 - .1 List of health risks and safety hazards identified by hazard assessment.
 - .2 Control measures used to mitigate risks and hazards identified.
 - .3 On-site Contingency and Emergency Response Plan as specified below.
 - .4 On-site Communication Plan as specified below.
 - .5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.
 - .6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational Health and Safety purposes.
- .3 On-site Contingency and Emergency Response Plan shall include:
 - .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
 - .2 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.
 - .3 Emergency Contacts: name and telephone number of officials from:
 - .1 General Contractor and Subcontractors.
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
 - .4 On-site Communication Plan:
 - .1 Procedures for sharing of Work related safety information to workers and subcontractors, including emergency and evacuation measures.
 - .5 Address all activities of the Work including those of subcontractors.
 - .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor arrive at Work Site.
 - .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted, and may request re-submission of the Plan with correction of deficiencies or concerns.
 - .8 Post copy of the Plan and updates prominently on Work site.

1.14 SAFETY SUPERVISION

- .1 Employ Health and Safety Site Representative responsible for daily supervision of health and safety of the Work.
- .2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:
 - .1 Implement, monitor and enforce daily compliance with Health and Safety requirements of the Work.
 - .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.

- .3 Conduct site safety orientation session to persons granted access to Work Site.
- .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.
- .5 Stop the Work as deemed necessary for reasons of health and safety.

- .3 Health and Safety Site Representative must:
 - .1 Be a qualified and competent person in occupational health and safety.
 - .2 Have site-related working experience specific to activities of the Work.
 - .3 Be on Work Site at all times during execution of the Work.
 - .4 All supervisory personnel assigned to the Work shall also be competent persons.
 - .5 Inspections:
 - .1 Conduct regularly scheduled safety inspections of the Work on a minimum bi-weekly basis. Record deficiencies and remedial action taken.

1.15 TRAINING

- .1 Use only skilled workers on Work Site who are effectively trained in occupational Health and Safety procedures and practices pertinent to their assigned task.
- .2 Maintain employee records and evidence of training received. Make data available to Departmental Representative upon request.
- .3 When an unforeseen or peculiar safety-related hazard or condition occurs during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.16 MINIMUM SITE SAFETY RULES

- .1 Notwithstanding requirement to abide by federal and provincial health and safety regulations, ensure the following minimum safety rules are obeyed by persons granted access to Work Site:
 - .1 Wear appropriate PPE pertinent to the Work or assigned task, minimum being hard hat, safety footwear, safety glasses and hearing protection.
 - .2 Immediately report unsafe condition at site, near-miss accident, injury and damage.
 - .3 Maintain site and storage areas in a tidy condition free of hazards causing injury.
 - .4 Obey warning signs and safety tags.
- .2 Brief persons of disciplinary protocols to be taken for non-compliance.

1.17 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.
- .3 Departmental Representative will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.

1.18 INCIDENT REPORTING

- .1 Investigate and report the following incidents to Departmental Representative:
 - .1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.
 - .2 Medical Aid injuries.
 - .3 Property damage in excess of \$10,000.00.
 - .4 Interruptions to facility operations resulting in an operational loss to a Federal department in excess of \$5,000.00.
- .2 Submit report in writing.

1.19 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep WHMIS MSDS for all products delivered to site.
 - .1 Post on site.
 - .2 Submit copy to Departmental Representative.

1.20 CONFINED SPACES

- .1 Abide by occupational health and safety regulations regarding work in confined spaces.

1.21 SITE RECORDS

- .1 Maintain on Work Site copy of safety related documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.
- .2 Upon request, make available to Departmental Representative or authorized Safety Officer for inspection.

1.22 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on Work Site in accordance with Acts and Regulations of Province having jurisdiction.

- .2 Post other documents as specified herein, including:
 - .1 Site-Specific Health and Safety Plan.
 - .2 WHMIS data sheets.

END OF SECTION

1 General

1.1 RELATED SECTIONS

- .1 Section 31 23 10 – Excavating, Trenching and Backfilling.

1.2 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.
- .3 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.

1.3 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00 – Submittal Procedures.

1.4 FIRES

- .1 Fires and burning of rubbish on site are not permitted.

1.5 DISPOSAL OF WASTES

- .1 Do not bury rubbish and waste materials on site.
- .2 Remove from property for disposal, all waste materials not incorporated into the work.
- .3 All waste products shall be disposed of at an approved waste handling facility. Wherever possible, waste products are to be recycled at an approved facility.
- .4 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner, into waterways, storm or sanitary sewers.

1.6 REFUELLING

- .1 Refuelling or maintenance of any equipment or machinery within 100 m of any watercourse or within the engineered wetland bed site is strictly forbidden.

1.7 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- .4 Provide control devices such as filter fabrics, sediment traps and settling ponds to control drainage and prevent erosion of adjacent lands. Maintain in good order for duration of work.

1.8 SITE CLEARING AND PLANT PROTECTION

- .1 Protect trees and plants on site and adjacent properties where indicated.
- .2 Wrap in burlap, trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of two (2) metres.
- .3 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Minimize stripping of topsoil and vegetation.
- .5 Restrict tree removal to areas indicated or designated by the Departmental Representative.

1.9 WORK ADJACENT TO WATERWAYS

- .1 Do not operate construction equipment in waterways.
- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or debris in waterways.
- .4 Design and construct temporary crossings to minimize erosion to waterways.
- .5 Do not skid logs or construction materials across waterways.

- .6 At borrow sites, design and construct temporary crossings to minimize erosion to waterways in strict conformance with provincial and federal environmental regulations.

1.10 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this Contract.
- .2 Control emissions from equipment and plant to local authorities' emission requirements.
- .3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area by providing temporary enclosures.
- .4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.
- .5 Have appropriate emergency spill response equipment and rapid clean-up kit on site located adjacent to hazardous materials storage area. Provide personal protective equipment required for clean-up.
- .6 Report, spills of petroleum and other hazardous materials as well as accidents having potential of polluting the environment to Federal and Provincial Department of the Environment.
 - .1 Notify Departmental Representative and submit a written spill report to Departmental Representative within 24 hours of occurrence.

1.11 EQUIPMENT

- .1 Equipment which is to be used in the execution of the work shall be maintained in a manner that will not be detrimental to the environment and in compliance with the Canadian Environmental Protection Act (CEPA). Equipment which is in violation shall be removed from the site until such time as it does comply with the above requirements.

1.12 STORAGE AND HANDLING

- .1 Store and handle all hazardous substances in accordance with the Environmental Management Plan.
- .2 Store and handle hazardous materials in accordance with applicable federal and provincial laws, regulations, codes and guidelines. Store in location that will prevent spillage into the environment.
- .3 Label containers to WHMIS requirements and keep MSDS data sheets on site for all hazardous materials.
- .4 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when storage began.

- .5 Store and handle flammable and combustible materials in accordance with National Fire Code.
- .6 Transport hazardous materials in accordance with Federal Transportation of Dangerous Goods Regulations and applicable Provincial Regulations.

1.13 HISTORICAL/ARCHAEOLOGICAL CONTROL

- .1 There have been no identified historical or archaeological items or features identified on the site. However, the Contractor shall be responsible for notifying the Departmental Representative should any artifacts be discovered through the course of completing the Work.
- .2 Conduct work as directed by the Departmental Representative to ensure the protection and preservation of any historical or archaeological artifacts discovered.

1.14 CLEANUP

- .1 Leaks or spills of hazardous substances, regardless of the quantity or whether indoors or outdoors, shall be stopped and cleaned up immediately and be prevented from entering storm or sanitary sewer systems or contaminating soil or water.
- .2 All spilled substances and materials contaminated by the spill will be collected in leak-proof containers or double bagged for disposal off property. Disposal shall be in a manner which is acceptable to the local authority having jurisdiction over disposal of such substances.

1.15 REPORTING

- .1 All releases of hazardous substances into the environment (e.g., ground, water, drains, sewer systems, ditches, roads, parking areas, etc.) shall be reported to the Departmental Representative as soon as possible.
- .2 In the case of environmental emergencies, immediately notify the Departmental Representative and the appropriate emergency response department or agency in accordance with the Environmental Management Plan.

1.16 INSPECTION AND NOTIFICATION

- .1 From time to time the project site may be inspected to ensure compliance with federal, provincial and local environmental requirements.
- .2 All spills reported under paragraph 1.17.1 of this section are subject to inspection by the regulatory authorities and the Departmental Representative to confirm cleanup and disposal have been carried out satisfactorily.
- .3 The Departmental Representative will notify Contractor in writing of observed noncompliance with federal, provincial or municipal environmental laws or regulations,

permits, and other elements of Contractor's Environmental Protection Plan. After receipt of such notice, the Contractor shall inform the Departmental Representative of proposed corrective action and take such action for approval by the Departmental Representative.

- .4 The Departmental Representative will issue a stop order of Work until satisfactory corrective action has been taken.
- .5 No time extensions will be granted or equitable adjustments allowed to Contractor for such suspensions.

2 Products

2.1 NOT USED

3 Execution

3.1 NOT USED

4 Measurement and Payment

4.1 PAYMENT

- .1 No separate payment shall be made to environmental protection measures indicated in this section.

END OF SECTION

1 General

1.1 SECTION INCLUDES

- .1 Inspection and testing, administrative and enforcement requirements.
- .2 Tests and mix designs.
- .3 Mill tests.

1.2 RELATED SECTIONS

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 61 00 – Common Product Requirements.

1.3 INSPECTION/TESTING AGENCIES

- .1 Inspection/Testing Agencies will be selected by the Departmental Representative for certain portions of the Work and paid by the Departmental Representative. Particular requirements for inspection and testing to be carried out by agencies are specified under various sections.
- .2 Provide equipment required for access and assistance in executing inspection and testing by the appointed agencies.
- .3 Engagement of inspection/testing agencies does not relax the responsibility of the Contractor to perform Work in conformance with the Contract Documents.
- .4 If defects are revealed during inspection or by tests, additional testing will be requested by the Departmental Representative to ascertain the full extent of the defect. Contractor to pay costs of reinspection and/or retesting required to verify acceptability of rework.

1.4 PROCEDURES

- .1 Notify the Departmental Representative two (2) days in advance of the requirement for tests in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.5 REJECTED WORK

- .1 Remove defective Work, whether the result of poor workmanship, use of defective products or damage and whether incorporated in the Work or not, which has been

rejected by the Departmental Representative as failing to conform to the Contract Documents. Replace or re-execute in accordance with the Contract Documents.

- .2 If in the opinion of the Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with the Contract Documents, the Departmental Representative may deduct from the Contract Price the difference in value between the Work performed and that called for by the Contract Documents, the amount of which shall be determined by the Departmental Representative.

1.6 REPORTS

- .1 Submit two (2) copies of inspection and test reports to the Departmental Representative within an acceptable time after completion of such test.

1.7 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs, as may be required, within an acceptable time of such information being required by the Departmental Representative.
- .2 The cost of tests and mix designs beyond those called for in the Contract Documents or beyond those required by the law of the Place of Work shall be appraised by the Departmental Representative and may be authorized as recoverable.

2 Products

2.1 NOT USED.

3 Execution

3.1 NOT USED.

4 Measurement and Payment

4.1 PAYMENT

- .1 No separate payment will be made for items included in this section.

END OF SECTION

1 General

1.1 SECTION INCLUDES

- .1 Access, construction aids, parking, offices and security.

1.2 ACCESS

- .1 Provide and maintain adequate access to project site.
- .2 Maintain access roads for duration of contract and make good damage resulting from Contractor's use of road.

1.3 MEASUREMENT FOR PAYMENT

- .1 No measurement for payment will be made for this section. Include associated costs in bid items.

1.4 CONTRACTOR'S SITE OFFICE

- .1 Be responsible for and provide own site office, if required, including electricity, heat, lights and telephone. Locate site office as directed by Departmental Representative.

1.5 SANITARY FACILITIES

- .1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.
- .2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.6 POWER

- .1 Arrange, pay for and maintain temporary electrical power supply in accordance with governing regulations and ordinances.
- .2 Supply and install all temporary facilities for power such as pole lines and underground cables to approval of local power supply authority.

1.7 WATER SUPPLY

- .1 Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances.

1.8 INSTALLATION AND REMOVAL

- .1 Provide construction facilities in order to execute work expeditiously. Remove from site all such work after use.

1.9 SCAFFOLDING

- .1 Provide and maintain scaffolding, ladders, platforms and other temporary works as required.

1.10 HOISTING

- .1 Provide, operate (by qualified operators) and maintain cranes for moving workers, materials and equipment.

1.11 SITE STORAGE/LOADING

- .1 Confine work and operations of employees by Contract documents. Do not unreasonably encumber premises with products.
- .2 Do not load any part of work with a weight or force that will endanger the work.

1.12 SECURITY

- .1 Provide and pay for responsible security for site and contents.
- .2 Contractor to make own arrangements for security of his equipment, materials, damages resulting from fire and theft.

1.13 EQUIPMENT, TOOL, AND MATERIALS STORAGE

- .1 Provide and maintain, in a clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials for security and protection.
- .2 Locate materials not required to be stored in weatherproof sheds, on site in a manner to cause least interference with work activities.
- .3 Store pipe as recommended by manufacturer and in a manner which will keep pipe interior free of debris and foreign substances. Pipe is to be checked for debris prior to installation.
- .4 Store equipment as recommended by manufacturer and in a manner that will keep equipment from becoming damaged or otherwise compromised prior to being installed.

1.14 BARRICADES

- .1 Provide and maintain sufficient barricades, fencing, notices, warning signs, light signals, etc. for the protection of adjoining property and to warn others and workmen engaged on the job of the dangers caused by work.
- .2 Types and location of barricades, etc. to be in accordance with local regulations and to the satisfaction of the Departmental Representative.
- .3 The presence of such barricades, lights, etc. shall not relieve the Contractor of the responsibility for any damages.

1.15 CONSTRUCTION SIGN AND NOTICES

- .1 Contractor or subcontractor advertisement signboards are not permitted on site.
- .2 Only notices of safety or instructions are permitted on site.
- .3 Safety and Instruction Signs and Notices:
 - .1 Signs and Notices for safety instruction shall be in both official languages. Graphic symbols shall conform to CAN/CSA-Z321-96 (R2006).
- .4 Maintenance and Disposal of Site Signs:
 - .1 Maintain approved signs and notices in good condition for duration of project and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.16 REMOVAL OF TEMPORARY FACILITIES

- .1 Remove temporary facilities from site when directed by Departmental Representative.

2 Products

2.1 NOT USED.

3 Execution

3.1 NOT USED.

END OF SECTION

1 General

1.1 RELATED SECTIONS

- .1 Section 01 11 00 – Summary of Work.

1.2 INSTALLATION AND REMOVAL

- .1 Provide temporary controls in order to execute Work expeditiously.
- .2 Remove from site all such work after use.

1.3 MEASUREMENT FOR PAYMENT

- .1 No measurement for payment will be made for this section. Include associated costs in bid items.

1.4 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, and open edges of floors and roofs.

1.5 ACCESS TO SITE

- .1 Provide and maintain access roads, ramps and construction runways as may be required for access to Work.

1.6 FIRE ROUTES

- .1 Maintain access to property including overhead clearances for use by emergency response vehicles.

1.7 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

- .1 Protect surrounding private and public property from damage during performance of Work.
- .2 Be responsible for damage incurred.

1.8 PROTECTION OF BUILDING FINISHES

- .1 Provide protection for finished and partially finished building finishes and equipment during performance of Work.
- .2 Provide necessary screens, covers, and hoardings.

2 Products

2.1 NOT USED.

3 Execution

3.1 NOT USED.

END OF SECTION

1 General

1.1 SECTION INCLUDES

- .1 Reference standards, manufacturer's instructions.
- .2 Product quality, availability, storage, handling, protection, transportation.
- .3 Workmanship, coordination, remedial work, and work in progress.

1.2 REFERENCE STANDARDS

- .1 Within the text of the specifications, reference may be made to the following standards:
 - .1 American Concrete Institute (ACI).
 - .2 American National Standards Institute (ANSI).
 - .3 American Society for Testing and Materials (ASTM).
 - .4 Canadian General Standards Board (CGSB).
 - .5 Canadian Institute of Steel Construction (CISC).
 - .6 Canadian Standards Association (CSA).
 - .7 Factory Mutual Engineering Corporation (FM).
 - .8 National Building Code (NBC).
 - .9 Underwriters' Laboratories of Canada (ULC).

1.3 QUALITY

- .1 Products, materials, equipment and articles (referred to as Products throughout the specifications) incorporated in the Work shall be new, not damaged or defective, and of the best quality (compatible with specifications) for the purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.

1.4 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store Products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Remove and replace damaged Products at own expense to satisfaction of Departmental Representative.

1.5 TRANSPORTATION

- .1 Pay costs of transportation of Products required in the performance of Work.

1.6 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in the specifications, install or erect Products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.

1.7 WORKMANSHIP

- .1 Workmanship shall be the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Departmental Representative if required Work is such as to make it impractical to produce required results.
- .2 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the Departmental Representative, whose decision is final.

1.8 COORDINATION

- .1 Ensure coordination in laying out Work. Maintain continuous supervision. The Contractor is responsible for laying out and grade control for all work after initial layout by Departmental Representative.

1.9 REMEDIAL WORK

- .1 Perform remedial work required to repair or replace the parts or portions of the Work identified as defective or unacceptable. Coordinate adjacent affected Work as required.

1.10 PROTECTION OF WORK IN PROGRESS

- .1 Adequately protect Work completed or in progress. Work damaged due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Departmental Representative, at no increase in Contract Price.

2 Products

2.1 NOT USED.

3 Execution

3.1 NOT USED.

END OF SECTION

1.1 GENERAL

- .1 Carry out work placing maximum emphasis on the areas of:
 - .1 Waste reduction;
 - .2 Diversion of waste from landfill; and
 - .3 Material recycling.

1.2 RELATED SECTIONS

- .1 Section 01 35 43 - Environmental Procedures.

1.3 WASTE REDUCTION

- .1 Develop waste reduction strategy for work.
- .2 Structure program to prioritize actions, with waste reduction as first priority, followed by salvage and recycling effort, then disposal as solid waste.
- .3 Identify materials to be:
 - .1 Salvaged for resale by Contractor.
 - .2 Sent to recycling facility.
 - .3 Sent to waste processing/landfill site for their recycling effort.
 - .4 Disposed of in approved landfill site.
- .4 Reduce construction waste during installation work. Undertake practices which will minimize waste and optimize full use of new materials on site, such as:
 - .1 Use of a central cutting area to allow for easy access to off-cuts and cleanup of sawdust.
 - .2 Use of cut-offs for blocking and bridging elsewhere.
 - .3 Use of effective and strategically placed facilities on site for storage and staging of left-over or partially cut materials (such as plywood, dimension timber, etc.) to allow for easy incorporation into work whenever possible, avoiding unnecessary waste.
- .5 Develop other strategies and innovative procedures to reduce waste.

1.4 MATERIAL SOURCE SEPARATION PROCESS

- .1 Develop and implement material source separation process at commencement of work as part of mobilization and waste management at site.
- .2 Provide on-site facilities to collect, handle and store anticipated quantities of reusable, salvageable and recyclable materials.
- .3 Establish methods whereby hazardous and toxic waste materials, and their containers, encountered or used in the course of work are properly isolated, stored on site and disposed in accordance with applicable laws and regulations from authorities having jurisdiction.

1.5 DISPOSAL REQUIREMENTS

- .1 Dispose of waste only at approved waste processing facility or approved landfill sites by authority having jurisdiction.

- .2 Contact the authority having jurisdiction prior to commencement of work to determine what, if any, construction waste materials have been banned from disposal in landfills. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.
- .3 Collect, bundle and transport salvaged materials to be recycled in separated categories and condition as directed by recycling facility. Ship materials only to approved recycling facilities.
 - .1 Contractor will submit Hazardous waste materials disposal slips from approved facilities to the Departmental Representative.
- .4 Sale of salvaged items by Contractor to other parties not permitted on site.

1.6 REMOVAL

- .1 Remove in their entirety all materials and objects specified for removal including all fastenings. Carefully remove materials designated to be reused.

END OF SECTION

1 General

1.1 SECTION INCLUDES

- .1 Cleaning, project record documents, spare parts, and maintenance materials.
- .2 Take-over procedures.

1.2 RELATED SECTIONS

- .1 Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.3 SECTION INCLUDES

- .1 As-Built drawings;
- .2 As-Built specifications;
- .3 Reviewed shop drawings.

1.4 PROJECT RECORD DOCUMENTS

- .1 Departmental Representative will provide two white print sets of contract drawings and two copies of Specifications Manual specifically for "as-built" purposes.
- .2 Maintain at site one set of the contract drawings and specifications to record actual as-built conditions.
- .3 Maintain up-to-date, real time as-built drawings and specifications in good condition and make available for inspection by the Departmental Representative at any time during construction.
- .4 As-built drawings:
 - .1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set (also by use of red ink). Submit both sets (also by use of red ink). Submit both sets to Departmental Representative. All drawings of both sets shall be stamped "As-built Drawings" and be signed and dated by Contractor.
 - .2 Show all modifications, substitutions and deviations from what is shown on the contract drawings or in specifications.
 - .3 Record following information:

- .1 Horizontal and vertical location of various elements in relation to Geodetic Datum.
 - .2 Field changes of dimensions and detail.
 - .3 All design elevations, sections, and details dimensioned and marked-up to consistently report finished installation conditions.
 - .4 Any details produced in the course of the contract by the Departmental Representative to supplement or to change existing design drawings must also be marked-up and dimensioned to reflect final as-built conditions and appended to the as-built drawing document.
 - .5 All change orders issued over the course of the contract must be documented on the finished as-built documents, accurately and consistently depicting the changed condition as it applies to all affected drawing details.
- .5 As-built Specifications: legibly mark in red each item to record actual construction, including:
- .1 Manufacturer, trade name, and catalogue number of each product actually installed.
 - .2 Changes made by Addenda and Change Orders.
 - .3 Mark up both copies of specifications; stamp "as-built", sign and date similarly to drawings as per above clause.
- .6 Maintain As-built documents current as the contract progresses. Departmental Representative will conduct reviews and inspections of the documents on a regular basis. Frequency of reviews will be subject to Departmental Representative's discretion. Failure to maintain as-builts current and complete to satisfaction of the Departmental Representative shall be subject to financial penalties in the form of progress payment reductions and holdback assessments.
- 1.5 REVIEWED SHOP DRAWINGS
- .1 Compile 2 full sets of all reviewed shop drawings.
- 1.6 PROGRESSIVE CLEANING
- .1 Maintain the Work in tidy condition, free from dust and other contaminants and accumulation of waste and debris.

1.7 FINAL CLEANING

- .1 Remove waste materials and debris from the site at regularly scheduled times, or dispose of as required by Departmental Representative. Leave the Work clean and suitable for occupancy by Departmental Representative. Do not burn waste materials on site.
- .2 When the Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for the performance of the remaining work.

1.8 REINSTATEMENT

- .1 Reinstall any damages as a result of construction activity to original or better condition unless noted otherwise.

1.9 SUBSTANTIAL COMPLETION INSPECTION

- .1 Notify the Departmental Representative in writing when the project is Substantially Complete. The Departmental Representative will do an inspection and prepare a Deficiency List.
- .2 The Departmental Representative will issue Deficiency List to the Contractor and will allow Contractor time to rectify deficiencies. The Departmental Representative will check deficiency items to assure himself that the work is ready for Departmental Representative's acceptance.
- .3 Change Orders shall be completed before the Substantial Completion Inspection is made.

1.10 FINAL CERTIFICATE OF COMPLETION

- .1 After the deficiencies established at the time of the Substantial Completion Inspection are completed, as per previously established dates, the Departmental Representative and the Contractor shall check off all items listed. At this time, a Final Certificate of Completion will be issued.

1.11 DOCUMENTATION

- .1 Contractor shall provide an Operation and Maintenance Manual for any equipment installed.

2 Products

2.1 NOT USED.

3 Execution

3.1 NOT USED.

END OF SECTION

1 General

1.1 SECTION INCLUDES

- .1 Commissioning form to be completed for equipment, system and integrated system.

1.2 RELATED SECTIONS

- .1 Section 33 05 14 – Manholes and Catch Basins
- .2 Section 33 31 13 – Sanitary Utility Sewerage Piping

1.3 INSTALLATION/START-UP RECORDS

- .1 Use check lists for material installation. Material manufacturer's installation check lists are acceptable for use. As deemed necessary by Departmental Representative, supplemental additional data lists may be required. Document and sign check list verifying checks have been made; indicate deficiencies and corrective action taken. Return completed check lists to Departmental Representative. Check lists will be required during Commissioning and are to be included in Operation and Maintenance Manual (O&M) at completion of project.

1.4 COMMISSIONING FORM

- .1 Contractor is required to submit to Departmental Representative the Commissioning Request Form in Section 01 91 34 – Commissioning Form Supplement - Appendix A at least one (1) week prior to commencement of Commissioning.
- .2 Prior to obtaining approval from Departmental Representative for Commissioning date:
 - .1 System installation must be completed to the satisfaction of the Departmental Representative and according to the Manufacturers' instructions. Departmental Representative must be available to be at the site at the time of Commissioning.

1.5 COMMISSIONING REQUIREMENTS

- .1 Strategy for Use:
 - .1 Contractor will provide required shop drawing information and verify correct installation and operation of items.
 - .2 Provide Departmental Representative with originals.

2 Products

2.1 NOT USED.

3 Execution

PWGSC
PRC Sanitary Sewer Upgrades
Fredericton Potato Research Centre
Fredericton, NB
Project Number: R.058866.001

Section 01 91 33
COMMISSIONING FORM
Page 2

3.1 NOT USED.

END OF SECTION

COMMISSIONING REQUEST FORM (Please print or type.)			
Job Number:			
Job Name:			
Site Location:			
Company Name:			
Project Manager:	Name:		Fax:
	Phone:	Email:	
On-Site Contact:	Name:		
	Phone:	Email:	
Commissioning Request Date:	Yr/Mo/Da:		
Comments:			

Notes:

1. Allow a minimum of one (1) week advance notice for site commissioning.
2. The material has been installed as per the Manufacturer's instructions.
3. At time of commissioning, the Contractor and Departmental Representative must be present.

(For completion by Departmental Representative)	
Request Authorized by:	Name:
	Signature:
	Position:
Authorization Date:	Yr/Mo/Da: