

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 01 56 00 – Temporary Barriers and Enclosures

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this Contract comprises a remedial excavation of soil impacts at Lot 1S-A and Lot 1S-B, Shannon Park, Dartmouth, Nova Scotia.

- .2 Introduction:

The Site is located along the coast of the Halifax Harbour in Dartmouth, Nova Scotia, and is identified as PIDs No. 41323742 and 41393398 (Lot 1S-A and Lot 1S-B). The site is currently vacant, with the exception of a Nova Scotia Power Inc. (NSPI) electrical tower, located on the southern portion of the site, and has an overall area of approximately 4.02 hectares. Remaining areas of the site are generally vegetated (treed and grassed areas), with rock coverage along the shoreline. The site is currently not provided with municipal water or sewer services, although it is located in a serviced area. The selected land use was residential, to be conservative. The area is zoned CDD – Comprehensive Development District by Halifax Regional Municipality. The previous environmental site assessment (ESA) work completed at the Site identified petroleum hydrocarbons (PHCs), polycyclic aromatic hydrocarbons (PAHs) and metals concentrations in soil greater than the Canadian Council of Ministers of the Environment (CCME) Soil Quality Guidelines or Canada-Wide Standards (CWS) Tier 1 and Tier 2 guidelines.

- .3 Scope of Work:

Remediation will consist of excavation and transportation of the PHC, PAH, and metals impacted soil, exceeding applicable Tier 2 pathway specific guidelines, to an off-site disposal facility licensed to accept the COC contaminated soil at the concentrations present. Site details and an estimated volume of impacted soil are presented in the attached Dwgs: MAP-01 and MAP-02. As the depths of impacts exceeding the applicable regulatory guidelines vary across the site, it is assumed that the former parking area would require excavation from surface to approximately 1.6 metres below grade (mbg) or bedrock (metals, PAH, and PHC impacts), the former wharf area would require excavation to approximately 0.3 mbg (PHC impacts), and the former rail line area would require excavation to approximately 0.6 mbg (metals impacts). This is an estimate only and the exact volume won't be known until confirmatory sampling indicates that soil exceeding the Tier 2 guidelines has been removed. However, the tonnages shown on Drawing No. MAP-02 are to be used in determining the cost.

As the water table is generally deep in the former parking area, dewatering of the excavated area may not be necessary. However, groundwater and precipitation water (if any) entering the excavation, must be collected, analyzed and appropriately disposed off-site. It is also noted that the remedial zone around the former parking area is immediately adjacent to Tufts Cove. This will require that a berm of existing soil be left immediately adjacent to Tufts Cove, to prevent influx of marine water into the excavation.

- .4 The excavated areas will be backfilled with clean material with sufficient compaction efforts to reduce the risk of differential settlement of the excavated and backfilled areas. Following compaction, surface restoration and reclamation will be required.

1.3 CONTRACT METHOD

- .1 Construct Work under stipulated price contract.
- .2 Relations and responsibilities between Contractor and subcontractors assigned by Owner are as defined in Conditions of Contract. Assigned Subcontractors must, in addition:
 - .1 Purchase and maintain liability insurance to protect Contractor from claims for not less than limits of liability which Contractor is required to provide to Owner.

1.4 WORK BY OTHERS

- .1 Co-operate with other Contractors in carrying out their respective works and carry out instructions from Departmental Representative.
- .2 Co-ordinate work with that of other Contractors. If any part of work under this Contract depends for its proper execution or result upon work of another Contractor, report promptly to Departmental Representative, in writing, any defects which may interfere with proper execution of Work.

1.5 WORK SEQUENCE

- .1 Co-ordinate Progress Schedule with PSPC Departmental Representative during construction.
- .2 Maintain fire access/control.

1.6 CONTRACTOR USE OF PREMISES

- .1 Unrestricted use of site by Contractor for the purpose of remediation/excavation activities.
- .2 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.
- .3 Remove or alter existing work to prevent injury or damage to portions of existing work which remain.
- .4 Repair or replace portions of existing work which have been altered during construction operations to match existing or adjoining work, as directed by Departmental Representative.
- .5 At completion of operations condition of existing work: equal to or better than that which existed before new work started.

1.7 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 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 vehicular traffic.
- .3 Provide alternative routes for pedestrian and vehicular traffic.
 - .4 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
 - .5 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.
 - .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.

1.8 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy of each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders.
 - .5 Other Modifications to Contract.
 - .6 Field Test Reports.
 - .7 Copy of Approved Work Schedule.
 - .8 Health and Safety Plan and Other Safety Related Documents.
 - .9 Other documents as specified and required by applicable guidelines, regulations, and authorities having jurisdiction.

Part 2 Products

2.1 NOT USED

- .1 Not used.

Part 3 Execution

3.1 NOT USED

- .1 Not used.

END OF SECTION

Part 1 General

1.1 MEETING DEFINITION

- .1 Meetings required as part of project work are further defined in this Section and include:
 - .1 Preconstruction Meeting: within fifteen (15) days of award
 - .2 Weekly Progress Meetings: weekly during construction
 - .3 Safety Meetings: daily during construction
 - .4 Post Remediation and Closure Meeting: upon completion of remediation and backfilling

1.2 ADMINISTRATIVE

- .1 Responsibility of Contractor
 - .1 Schedule and administer project meetings throughout the progress of the work at the request of Departmental Representative and for the meetings defined in Section 1.1.
 - .2 Provide physical space and make arrangements for meetings.
 - .3 Prepare agenda for meetings unless otherwise specified.
 - .4 Distribute written notice of each meeting four days in advance of meeting date to Departmental Representative, Contractor Project Manager, PSPC Representative, INAC Representative.
 - .5 Provide Representative of Contractor, Subcontractor and suppliers in attendance that will be qualified and authorized to act on behalf of party each represents.
 - .6 Preside at meetings.
 - .7 Record the meeting minutes. Include significant proceedings and decisions. Identify actions by parties.
 - .8 Reproduce and distribute copies of minutes within three days after meetings and transmit to meeting participants.

1.3 PRECONSTRUCTION MEETING

- .1 Within 10 days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 PSPC Representative, Departmental Representative, INAC Representative, Contractor Project Manager, Contractor Major Subcontractors, Contractor Field Manager will be in attendance.
- .3 Contractor to establish time and location of meeting and notify parties concerned minimum five 5 days before meeting.
- .4 Contractor will chair meeting and take minutes. Meeting agenda will include:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Schedule of Work: in accordance with the schedule supplied by the Contractor as per Section 01 33 00.

- .3 Requirements for temporary facilities, site sign, offices, storage sheds, utilities, fences in accordance with Section 01 52 00- Construction Facilities.
- .4 Site security in accordance with Section 01 56 00- Temporary Barriers and Enclosures.
- .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 Take-over procedures, acceptance, warranties in accordance with Section 01 78 00- Closeout Submittals.
- .8 Monthly progress claims, administrative procedures, photographs, hold backs.
- .9 Appointment of inspection and testing agencies or firms.
- .10 Insurances, transcript of policies.
- .11 Regulatory review of requirements to complete work.

1.4 WEEKLY PROGRESS MEETINGS

- .1 Weekly during onsite construction activities.
- .2 Contractor, major Subcontractors involved in Work, PSPC Representative, and Departmental Representative are to be in attendance.
- .3 Contractor to notify parties a minimum of two (2) days in advance.
- .4 Contractor will record minutes of meetings and circulate to attending parties and affected parties not in attendance within four (4) days after meeting.
- .5 Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting.
 - .2 Health, safety and security concerns.
 - .3 Review of Work progress since previous meeting.
 - .4 Field observations, problems, conflicts.
 - .5 Problems which impede construction schedule.
 - .6 Corrective measures and procedures to regain projected schedule.
 - .7 Revision to construction schedule.
 - .8 Progress schedule, during succeeding work period.
 - .9 Review submittal schedules: expedite as required.
 - .10 Maintenance of quality standards.
 - .11 Review proposed changes for affect on construction schedule and on completion date.
 - .12 Other business.

1.5 SAFETY MEETINGS

- .1 Safety meetings shall include:
 - .1 Daily safety meetings: To be held on-site daily during construction and to include Contractor, all on-site staff, on-site Departmental Representative and Departmental Representative's authorized personnel. The Daily Safety Meeting

may be split into task or crew specific meetings as required. Record attendance and discussion topic(s) for daily safety meeting(s) and make available to Departmental Representative.

- .2 Weekly safety meeting: Contractor to preside over weekly meetings for all site personnel during construction. Contractor is to record minutes and attendance and post minutes and attendance list on-site and provide copy to Departmental Representative within three (3) days of the meeting. May be combined with Weekly Progress Meeting.

1.6 POST REMEDIATION AND CLOSURE MEETING

- .1 Within twenty (20) days after completion of construction, the Contractor will request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities. The meeting will be a meeting between all parties on-site.
- .2 Departmental Representative, Contractor, PSPC, INAC, major Sub-Contractors, field representatives and supervisors will be in attendance.
- .3 Establish time and contact information for the meeting and notify parties concerned minimum five (5) days before meeting.
- .4 Departmental Representative will chair the meeting and take minutes. Meeting will be informal and agenda to include, but is not limited to
 - .1 Contractual issues.
 - .2 Holdback release.
 - .3 Outstanding submittals.
 - .4 Outstanding reporting requirements.
 - .5 Lessons learned.
- .5 Record minutes of meetings and circulate to attending parties and affected parties not in attendance within five (5) business days.

1.7 SUBMITTALS

- .1 Provide submittals noted in Section 01 33 00 – Submittal Procedures to the Departmental Representative for review.

1.8 MEASUREMENT FOR PAYMENT

- .1 Work under this section will not be measured. Include all costs under the stipulated price in the Basis of Payment Schedule.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence 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 Where items or information is not produced in SI Metric units converted values are acceptable.
- .4 Submit requests for payment for review and for transmittal to Departmental Representative.
- .5 Submit requests for interpretation of Contract Documents and obtain instructions through the Departmental Representative.
- .6 Submit and process substitutions through Departmental Representative.
- .7 Submit and process task authorizations and change orders through Departmental Representative.
- .8 Deliver closeout submittals for review to Departmental Representative.
- .9 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated 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.
- .10 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .11 Verify field measurements and affected adjacent Work are co-ordinated.
- .12 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .13 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .14 Keep one reviewed copy of each submission on site.

1.2 SCHEDULE

- .1 Submit schedule that indicates expected completion dates for the following milestones.
 - .1 Pre-construction Meeting
 - .2 Mobilization of all required equipment to the Site
 - .3 Start of remedial excavations
 - .4 Completion of remedial excavations
 - .5 Completion of restoration of the Site

- .6 De-mobilization of all equipment from the Site
- .7 Post-construction Meeting

1.3 SAMPLES

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

1.4 GEOGRAPHIC INFORMATION SYSTEM (GIS) AND COMPUTER AIDED DESIGN (CAD) SUBMISSIONS

- .1 All GIS submissions are to be in map package format.
- .2 All CAD submissions to be in accordance with PSPC CAD formats.

1.5 MEASUREMENT FOR PAYMENT

- .1 Work under this section will not be measured. Include all costs under the stipulated Price in the Basis of Payment Schedule.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 01 56 00 – Temporary Barriers and Enclosure
- .3 Section 01 35 29.13 – Health, Safety and Emergency Response Procedures for Contaminated Sites
- .4 Section 02 50 00 – Site Remediation

1.2 MEASUREMENT PROCEDURES

- .1 Mobilization and Demobilization will be paid in accordance with lump sum price established for mobilizing all necessary equipment, materials, supplies, facilities, and personnel associated with the Works to the Site. Includes initial insurance and permits. Additional insurance and permits due to changes in scope, cost, and schedule as accepted by the Departmental Representative will be included in Contract amendments. Demobilization will be paid in accordance with lump sum price established for demobilizing all equipment and personnel associated with the Works from the Site. Includes decontaminating all equipment prior to removal from Site.

1.3 REFERENCE STANDARDS

- .1 Transportation and Dangerous Goods Act (1999)
- .2 Canadian Council of Ministers of the Environment (CCME) Documentation
- .3 Nova Scotia Environment Contaminated Sites Regulation (July 6, 2013)

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit, prior to start of work, plan detailing management of contaminated soils. Submit written documentation of weekly contaminated soil management inspections on a monthly basis.
- .3 Submittals for Weekly Progress Meetings: make submittals at least 24 hours prior to meeting:
 - .1 Updated progress schedule detailing activities. Include review of progress with respect to previously established dates for starting and stopping various stages of Work, major problems and action taken, injury reports, equipment breakdown, and material removal.
 - .2 Copies of transport manifests, trip tickets, and disposal receipts for waste materials removed from Site.
 - .3 Weekly copies of site entry and work area logbooks with information on worker and visitor access.

- .4 Other information requested by Departmental Representative or relevant to agenda for upcoming progress meeting.
- .4 Site Layout: within seven (7) days after date of Notice to Proceed and prior to mobilization to site, submit site layout drawings showing existing conditions and facilities, construction facilities and temporary controls provided by Contractor including following:
 - .1 Equipment and personnel decontamination areas.
 - .2 Means of ingress, egress and temporary traffic control facilities. Refer to Section 01 56 00- Temporary Barriers and Enclosures for traffic control.
 - .3 Equipment and material staging areas.
 - .4 Contaminated soil stockpile areas, if any.
 - .5 Exclusion Zones, Contaminant Reduction Zones, and other zones specified in Contractor's site-specific Health and Safety Plan.
 - .6 Grading, including contours, required to construct temporary facilities.
- .5 Equipment Decontamination Pad: submit equipment decontamination pad design to Departmental Representative for review prior to commencing construction.

1.5 REGULATORY REQUIREMENTS

- .1 Provide erosion and sediment control in accordance with Erosion and Sedimentation Control Plan.
- .2 Comply with federal, provincial, and local anti-pollution laws, ordinances, codes, and regulations when disposing of waste materials, debris, and rubbish.
- .3 Work to meet or exceed minimum requirements established by federal, provincial, and local laws and regulations which are applicable.
 - .1 Contractor: responsible for complying with amendments as they become effective.
- .4 In event that compliance exceeds scope of work or conflicts with specific requirements of contract notify Departmental Representative immediately.

1.6 SEQUENCING AND SCHEDULING

- .1 Do not commence Work involving contact with potentially contaminated materials until decontamination facilities are operational and approved by Departmental Representative.

1.7 EQUIPMENT DECONTAMINATION FACILITY

- .1 Prior to commencing work involving equipment contact with potentially contaminated materials, construct equipment decontamination pad to accommodate largest piece of on-site potentially contaminated equipment.
- .2 Construct equipment decontamination pad in accordance with this specification and Contractor's approved Equipment Decontamination Facility Design.
- .3 Provide, operate, and maintain necessary equipment, pumps, and piping required to collect and contain equipment decontamination wastewater and sediment and transfer same to approved storage facilities.

- .4 At minimum, complete the following steps during equipment decontamination:
 - .1 Mechanically remove loose waste solids, grit, dirt, and debris by manual methods without using steam or high-pressure water to minimize water usage and potential for generation of contaminated rinsate.
 - .2 Should decontamination not be achieved using the above, use high-pressure, low-volume, hot water or steam supplemented by detergents or solvents as appropriate and approved by Departmental Representative. Perform an assessment as directed by Departmental Representative, to determine effectiveness of decontamination.
 - .3 Collect and dispose of the removed solid material and contaminated soil consistent with other contaminated soil.
 - .4 Contain any rinsate if generated during the removal process, as contact water/wastewater.
- .5 Complete final decontamination of equipment, and materials which may have come in contact with potentially contaminated materials prior to removal from site.
- .6 Each piece of equipment may be inspected by Departmental Representative or designate after decontamination and prior to removal from site and/or travel on clean areas. Departmental Representative will have right to require additional decontamination to be completed, if deemed necessary.
- .7 Take appropriate measures necessary to minimize drift of mist and spray during decontamination, including provision of wind splash screens, as required.

1.8 SOIL STOCKPILING FACILITIES

- .1 Provide, maintain, and operate storage/stockpiling facilities as required.
- .2 Install geomembrane liner below proposed stockpile locations to prevent contact between stockpile material and ground.
- .3 Prevent any liquids from contaminated soil stockpiles from escaping the geomembrane lined areas. The geomembrane liner shall be raised at the edges to facilitate collection of any liquids draining from the soils. Liquids shall be contained for off-site disposal.
- .4 Cover all stockpiles with tarps capable of completely covering stockpiled material at all times, unless materials are being added to or taken from the stockpiles. Equip facility with tarps capable of covering stockpiled material until off site disposal of material.

1.9 WASTEWATER STORAGE TANK

- .1 Provide, operate, and maintain wastewater storage tanks to store wastewaters.
- .2 Wastewater includes wastewaters from Personnel Hygiene/Decontamination Facility; water collected from dewatering operations; and water collected from Equipment Decontamination Facility.
- .3 Store wastewaters from dewatering operations and Equipment Decontamination Facility in separate tank from wastewater from Personnel Hygiene/Decontamination Facility.

- .4 If toilet facilities are provided in Personnel Hygiene/Decontamination Facility, store wastewater from these toilets with wastewater from hand-basins, for ultimate disposal off site.
- .5 Discharges: comply with applicable discharge limitations and requirements; do not discharge wastewaters to site sewer systems that do not conform to or are in violation of such limitations or requirements; and obtain Departmental Representative's approval prior to discharge of wastewater.
- .6 Provide pumps and piping to convey collected wastewaters to designated wastewater storage tanks; provide wastewater storage tanks with minimum total live capacity such that effluent quality can be analyzed and approved prior to discharge to sanitary sewer system, if available.
- .7 Install wastewater storage tanks in locations approved by Departmental Representative.
- .8 Properly support tank[s] on temporary aboveground foundation[s].
- .9 Do not operate wastewater storage tanks until inspected and approved by Departmental Representative.
- .10 Notify Departmental Representative 72 hours minimum in advance of when wastewater storage tank is anticipated to be full.
 - .1 Do not discharge additional liquids to filled tank following sampling by Departmental Representative.
 - .2 Contractor will determine appropriate disposition of wastewaters based on sample analysis, for approval by the Departmental Representative.
- .11 Transport and dispose of wastewaters at off-site disposal facility as identified by Contractor and approved by Departmental Representative.
- .12 Payment for transporting and disposing of wastewater to off-site disposal facility will be included in the stipulated price, in the Basis of Payment Schedule.

1.10 DRUMS

- .1 Storage of Liquid Waste: 200 L steel drums meeting Transportation and Dangerous Goods Act, closable lids, complete with labels for marking contents and date filled.
- .2 Storage of Solid Waste: 200 L steel drums meeting Transportation and Dangerous Goods Act, closable lids, complete with labels for marking contents and date filled.

1.11 VEHICULAR ACCESS AND PARKING

- .1 Maintenance and Use:
 - .1 Prevent contamination of access roads. Immediately scrape up debris or material on access roads which is suspected to be contaminated as determined by Departmental Representative; transport and dispose of in appropriate off-site disposal facility. Clean access roads at least once per shift.
 - .2 Departmental Representative may collect soil samples for chemical analyses from traveling surfaces of constructed and existing access routes prior to, during, and upon completion of Work. Excavate and dispose of clean soil contaminated by Contractor's activities at no additional cost to Owner.

1.12 DUST AND PARTICULATE CONTROL

- .1 Execute Work by methods to minimize raising dust from construction operations.
- .2 Implement and maintain dust and particulate control measures as determined necessary by Departmental Representative during construction and in accordance with Province of Nova Scotia regulations.
- .3 Provide positive means to prevent airborne dust from dispersing into atmosphere. Use potable water for water misting system for dust and particulate control.
- .4 Use chemical means for water misting system for dust and particulate control only with Departmental Representative's prior written approval.
- .5 As minimum, use appropriate covers on trucks hauling fine or dusty material. Use watertight vehicles to haul wet materials.
- .6 Prevent dust from spreading to adjacent property sites.
- .7 Departmental Representative will stop work at any time when Contractor's control of dusts and particulates is inadequate for wind conditions present at site, or when air quality monitoring indicates that release of fugitive dusts and particulates into atmosphere equals or exceeds specified levels. Any stop work decision due to the contractor not meeting the specification requirements is not grounds for claims of extra cost or time.
- .8 If Contractor's dust and particulate control is not sufficient for controlling dusts and particulates into atmosphere, stop work. Contractor must discuss procedures that Contractor proposes to resolve problem. Make necessary changes to operations prior to resuming excavation, handling, processing, or other work that may cause release of dusts or particulates. Any stop work decision due to the contractor not meeting the specification requirements is not grounds for claims of extra cost or time.

1.13 POLLUTION CONTROL

- .1 Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious toxic substances and pollutants produced by construction operations.
- .2 Be prepared to intercept, clean up, and dispose of spills or releases that may occur whether on land or water. Maintain materials and equipment required for cleanup of spills or releases readily accessible on site.
- .3 Promptly report spills and releases potentially causing damage to environment to:
 - .1 Authority having jurisdiction or interest in spill or release including conservation authority, water supply authorities, drainage authority, road authority, and fire department.
 - .2 Owner of pollutant, if known.
 - .3 Person having control over pollutant, if known.
 - .4 Departmental Representative.
- .4 Contact manufacturer of pollutant if known and ascertain hazards involved, precautions required, and measures used in cleanup or mitigating action.

- .5 Take immediate action using available resources to contain and mitigate effects on environment and persons from spill or release.
- .6 Provide spill response materials including containers, adsorbent, shovels, and personal protective equipment. Make spill response materials available at all times in which hazardous materials or wastes are being handled or transported. Spill response materials: compatible with type of material being handled.
- .7 Volatile Organic Compounds (VOC) Control:
 - .1 In addition to requirements of Section 01 35 29.13- Health, Safety and Emergency Response Procedures for Contaminated Sites, monitor air quality for volatile organics at perimeter security fence as approved by Departmental Representative, every hour during contaminated materials excavation and management activities, and maintain log of air quality readings.
 - .2 If air quality monitoring indicates that release of volatile organics in air at site boundary exceeds Level C of Personnel Protective Equipment threshold for air quality, implement corrective actions to control volatile organics.
 - .3 If actions are not sufficient to control release of volatile organics within 1/2 hour of identification of air quality problem, suspend work resulting in excessive volatile organic emissions. Departmental Representative and Contractor to discuss additional methods that Contractor proposes to control release of volatile organics.
 - .4 Make necessary changes at no additional cost to Departmental Representative prior to resuming Work.
 - .5 In addition, if Departmental Representative's monitoring of ambient air at site perimeter indicates unacceptable concentrations of contaminants in air, modify operations to minimize such off-site impacts.

1.14 EQUIPMENT DECONTAMINATION

- .1 Commence Work involving equipment contact with potentially contaminated material only after Equipment Decontamination Facility is operational.
- .2 Decontaminate equipment after working in potentially contaminated work areas and prior to subsequent work or travel on clean areas.
- .3 Perform equipment decontamination on Contractor-constructed equipment decontamination pad.
- .4 At minimum, perform following steps during equipment decontamination: mechanically remove packed dirt, grit, and debris by scraping and brushing without using steam or high-pressure water to reduce amount of water needed and to reduce amount of contaminated rinsate generated. Use high-pressure, low-volume, hot water or steam supplemented by detergents or solvents as appropriate and as approved by Departmental Representative. Pay particular attention to tire treads, equipment tracks, springs, joints, sprockets, and undercarriages. Scrub surfaces with long handle scrub brushes and cleaning agent. Rinse off and collect cleaning agent. Air dry equipment in Clean Zone before removing from site or travelling on clean areas. Perform assessment as directed by Departmental Representative to determine effectiveness of decontamination.

- .5 Maintain inspection record on site which includes: equipment descriptions with identification numbers or licence plates; time and date entering decontamination facility; time and date exiting decontamination facility; and name of inspector with comment stating that decontamination was performed and completed.
- .6 Each piece of equipment will be inspected by Departmental Representative after decontamination and prior to removal from site and/or travel on clean areas. Departmental Representative will have right to require additional decontamination to be completed if deemed necessary.
- .7 Take appropriate measures necessary to minimize drift of mist and spray during decontamination including provision of wind screens.
- .8 Collect decontamination wastewaters and sediments which accumulate on equipment decontamination pad. Transfer wastewaters to designated wastewater storage tank or drums.
- .9 Transfer sediments to soil staging area, disposal transport vehicle, and/or drums.
- .10 Furnish and equip personnel engaged in equipment decontamination with protective equipment including suitable disposable clothing, respiratory protection, and face shields.
- .11 Have on hand sufficient pumping equipment, of adequate pumping capacity and associated machinery and piping in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment. Maintain piping and connections in good condition and leak-free.

1.15 WATER CONTROL

- .1 Maintain excavations free of water.
- .2 Protect site from puddling or running water. Provide water barriers as necessary to direct clean runoff around excavations, and protect site from soil erosion, as per the Erosion and Sedimentation Control Plan.
- .3 Prevent surface water runoff from leaving work areas.
- .4 Do not discharge decontaminated water, or surface water runoff, or groundwater which may have come in contact with potentially contaminated material, off site or to municipal sewers, unless it has been collected and tested to confirm suitability for such disposal.
- .5 Prevent precipitation from infiltrating or from directly running off stockpiled contaminated soil. Cover stockpiled contaminated soil with an impermeable liner during periods of work stoppage including at end of each working day and as directed by Departmental Representative.
- .6 Direct surface waters that have not contacted potentially contaminated materials to discharge into Tufts Cove or Halifax Harbour.
- .7 Control surface drainage including ensuring that gutters are kept open, water is not directed across or over pavements or sidewalks except through approved pipes or properly constructed troughs, and runoff from unstabilized areas is intercepted and diverted to suitable outlet.
- .8 Dispose of water in manner not injurious to public health or safety, to property, or to any part of Work completed or under construction.

- .9 Provide, operate, and maintain necessary equipment appropriately sized to keep excavations, staging pads, and other work areas free from water.
- .10 Contain water from stockpiled contaminated soil. Transfer potentially contaminated surface waters to wastewater storage tanks separate from wastewater from Personnel Hygiene/Decontamination Facility.
- .11 Have on hand sufficient pumping equipment, machinery, and tankage in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment.
- .12 Contain and collect wastewaters and transfer such collected wastewaters to on-site storage (tanks or drums) until such time as appropriate off-site disposal location(s) have been confirmed by Departmental Representative.

1.16 DEWATERING

- .1 Dewater various parts of Work including, without limitation, excavations, structures, foundations, and work areas.
- .2 Employ construction methods, plant procedures, and precautions that ensure Work, including excavations, are stable, free from disturbance, and dry.
- .3 Dewatering Methods: includes sheeting and shoring; groundwater control systems; surface or free water control systems employing ditches, diversions, drains, pipes and/or pumps; and other measures necessary to enable Work to be carried out in dry conditions.
- .4 Provide sufficient and appropriate labour, plant, and equipment necessary to keep Work free of water including standby equipment necessary to ensure continuous operation of dewatering system.
- .5 Take precautions necessary to prevent uplift of structure or pipeline and to protect excavations from flooding and damage due to surface runoff.
- .6 Test and analyse water generated from dewatering activities and treat to meet required discharge or disposal criteria.

1.17 EROSION AND SEDIMENT CONTROL

- .1 An Erosion and Sedimentation Control Plan should be prepared for review and approval by the Departmental Representative, prior to commencement of any Site work. The Erosion and Sedimentation Control plan should include but not be limited to the following
- .2 Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas, from stockpiles, staging areas, and other work areas. Prevent erosion and sedimentation.
- .3 Minimize amount of bare soil exposed at one time. Stabilize disturbed soils as quickly as practical. Strip vegetation, regrade, or otherwise develop to minimize erosion. Remove accumulated sediment resulting from construction activity from adjoining surfaces, drainage systems, and water courses, and repair damage caused by soil erosion and sedimentation as directed by Departmental Representative.
- .4 Provide and maintain temporary measures which may include, silt fences, hay or straw bales, ditches, geotextiles, drains, berms, terracing, riprap, temporary drainage piping,

sedimentation basins, vegetative cover, dikes, and other construction required to prevent erosion and migration of silt, mud, sediment, and other debris off site or to other areas of Site where damage might result, or that might otherwise be required by Laws and Regulations. Make sediment control measures available during construction. Place silt fences and/or hay or straw bales in ditches to prevent sediments from escaping from ditch terminations.

- .5 Hay or Straw Bale: wire bound or string tied; securely anchored by at least 2 stakes or rebars driven through bale 300 mm to 450 mm into underlying ground.
- .6 Silt Fence: assembled, ready to install unit consisting of geotextile attached to driveable posts. Geotextile: uniform in texture and appearance, having no defects, flaws, or tears that would affect its physical properties.
- .7 Net Backing: industrial polypropylene mesh joined to geotextile at both top and bottom with double stitching of heavy-duty cord, with minimum width of 750 mm.
- .8 Posts: sharpened wood, approximately 50 mm square, protruding below bottom of geotextile to allow minimum 450 mm embedment; post spacing 2.4 m maximum. Securely fasten each post to geotextile and net backing using suitable staples.
- .9 Plan construction procedures to avoid damage to work or equipment encroachment onto water bodies or drainage ditch banks. In event of damage, promptly take action to mitigate effects. Restore affected bank or water body to existing condition.
- .10 Installation:
 - .1 Construct temporary erosion control items as indicated. Actual alignment and/or location of various items as directed by Departmental Representative.
 - .2 Do not construct bale barriers and silt fence in flowing streams or in swales.
 - .3 Check erosion and sediment control measures weekly after each rainfall; during prolonged rainfall check daily.
 - .4 Bales and/or silt fence may be removed at beginning of work day, replace at end of work day.
 - .5 Whenever sedimentation is caused by stripping vegetation, regrading, or other development, remove it from adjoining surfaces, drainage systems, and watercourses, and repair damage as quickly as possible.
 - .6 Prior to or during construction, Departmental Representative may require installation or construction of improvements to prevent or correct temporary conditions on site. Improvements may include berms, mulching, sediment traps, detention and retention basins, grading, planting, retaining walls, culverts, pipes, guardrails, temporary roads, and other measures appropriate to specific condition. Temporary improvements must remain in place and in operation as necessary or until otherwise directed by Departmental Representative.
 - .7 Repair damaged bales, end runs, and undercutting beneath bales.
 - .8 Unless directed otherwise by Departmental Representative, remove temporary erosion and sediment control devices upon completion of Work. Spread accumulated sediments to form a suitable surface for seeding or dispose of, and shape area to permit natural drainage to satisfaction of Departmental Representative. Materials once removed become property of Contractor.

- .11 Construct fill areas by selective placement to avoid erosive surface silts or clays.
- .12 Do not disturb existing embankments or embankment protection.
- .13 Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- .14 If soil and debris from site accumulate in low areas, storm sewers, roadways, gutters, ditches, or other areas where in Departmental Representative's determination it is undesirable, remove accumulation and restore area to original condition.

1.18 PROGRESS CLEANING

- .1 Maintain cleanliness of Work and surrounding site to comply with federal, provincial, and local fire and safety laws, ordinances, codes, and regulations.
- .2 Co-ordinate cleaning operations with disposal operations to prevent accumulation of dust, dirt, debris, rubbish, and waste materials.

1.19 FINAL DECONTAMINATION

- .1 Perform final decontamination of construction facilities, equipment, and materials which may have come in contact with potentially contaminated materials prior to removal from site.
- .2 Perform decontamination as specified to satisfaction of Departmental Representative. Departmental Representative will direct Contractor to perform additional decontamination if required.

1.20 REMOVAL AND DISPOSAL

- .1 Remove surplus materials and temporary facilities from site.
- .2 Dispose of non-contaminated waste materials, litter, debris, and rubbish off site.
- .3 Do not burn or bury rubbish and waste materials on site.
- .4 Do not dispose of volatile or hazardous wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
- .5 Do not discharge wastes into streams or waterways.
- .6 Dispose of following materials at appropriate off-site facility identified by Contractor and approved by Departmental Representative:
 - .1 Debris including excess construction material.
 - .2 Non-contaminated litter and rubbish.
 - .3 Disposable PPE worn during final cleaning.
 - .4 Wastewater removed from wastewater storage tank.
 - .5 Wastewater generated from final decontamination operations including wastewater storage tank cleaning.
 - .6 Lumber from decontamination pads.
- .7 Dispose of contaminated soil in accordance with Section 02 50 00 Site Remediation.

- .8 Wastewater sample and analysis: Departmental Representative will perform sampling and analysis of stored wastewater for disposal purposes prior to removal from site. Results of analyses will determine appropriate methods of disposal. Upon receipt of analytical results, transfer tank contents without spills or release, as directed by Departmental Representative, to off-site disposal facility. Following completion of tank emptying, decontaminate tank interior with steam or high-pressure water wash supplemented by detergent. Dispose of tank decontamination water with tank contents.
- .9 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.

1.21 RECORD KEEPING

- .1 Maintain adequate records to support information provided to Departmental Representative regarding exception reports, annual reports, and biennial reports.
- .2 Maintain bills of lading for minimum of [375] days from date of shipment or longer period required by applicable law or regulation.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Submittal Procedures

1.2 REFERENCE STANDARDS

- .1 Province of Nova Scotia
 - .1 Occupational Health and Safety Act, S.N.S. 2004 .
- .2 Canada Labour Code, Canada Occupational Safety and Health Regulations, SOR/86–304 2017.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00- Submittal Procedures.
- .2 Submit site-specific Health and Safety Plan, within 7 days after date of Notice to Proceed and prior to mobilization to site. Address following items:
- .3 Safety and health risk or hazard analysis for each site task and operation.
- .4 Develop checklist for items to be inspected on a daily basis. Document actions taken.
- .5 Personnel training requirements including:
 - .1 Names of personnel and alternates responsible for site safety and health, hazards present on site, and use of personal protective equipment.
 - .2 Work practices by which personnel can minimize risks from hazards, safe use of engineering controls and equipment on site, medical surveillance requirements, including recognition of symptoms and signs which might indicate overexposure to hazards, and elements of site-specific Health and Safety Plan.
- .6 Personal protective equipment (PPE) program addressing:
 - .1 Donning and doffing procedures.
 - .2 PPE selection based upon site hazards.
 - .3 PPE use and limitations of equipment.
 - .4 Work mission duration, PPE maintenance and storage.
 - .5 PPE decontamination and disposal.
 - .6 PPE inspection procedures prior to, during, and after use.
 - .7 Evaluation of effectiveness of PPE program, and limitations during temperature extremes, and other appropriate medical considerations.
 - .8 Medical surveillance requirements for personnel assigned to work at site.
 - .9 Frequency and types of air monitoring, personnel monitoring, and environmental sampling techniques and instrumentation to be used, including methods of maintenance and calibration of monitoring and sampling equipment.
 - .10 Site control measures employed at site including site map, site work zones, use of 'buddy system', site communications including site security, alerting means for

- emergencies, standard operating procedures or safe work practices, and identification of nearest medical assistance.
- .11 Decontamination procedures for both personnel and equipment.
- .12 Emergency response requirements addressing: pre-emergency planning, personnel roles, lines of authority and communication, emergency recognition and prevention, safe distances and places of refuge, site security and control, evacuation routes and procedures, decontamination procedures not covered under decontamination section, emergency medical treatment and first aid, emergency alerting and response procedures, critique of response and follow-up, PPE and emergency equipment, site topography, layout, prevailing weather conditions, and procedures for reporting incidents to local, provincial, or federal agencies.
- .13 Written respiratory protection program for project activities.
- .14 Procedures dealing with heat and/or cold stress.
- .15 Spill containment program if drummed waste material is generated, excavated, stored, or managed on site.
- .7 Departmental Representative will review Contractor's site-specific Health and Safety Plan and provide comments to Contractor within 7 days.
- .8 Medical Surveillance: submit certification of medical surveillance for site personnel, within 7 days after date of Notice to Proceed and prior to mobilization to site. Submit additional certifications as personnel are sent to site.
- .9 Respirator Fit Testing: submit proof of respirator fit testing for site personnel, within 7 days after date of Notice to Proceed and prior to mobilization to site.
- .10 On-site Contingency and Emergency Response Plan: address standard operating procedures to be implemented during emergency situations.
 - .1 All vehicle and equipment refuelling must be conducted by appropriately trained personnel using the effective PPE in a manner which meets or exceeds regulatory requirements including using drip pans.
- .11 Off-site Contingency and Emergency Response Plan:
 - .1 Prior to commencing Work involving handling of hazardous materials, develop off-site Contingency and Emergency Response Plan.
 - .2 Plan must provide immediate response to serious site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from site.

1.4 REGULATORY REQUIREMENTS

- .1 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.

1.5 SITE CONDITIONS

- .1 Work at site will involve contact with:
 - .1 Metal impacted soil.
 - .2 PHC (petroleum hydrocarbons) impacted soils.

- .3 PAH (polyaromatic hydrocarbons) impacted soils.
- .4 Potentially hazardous liquids and petroleum-based products.

1.6 GENERAL REQUIREMENTS

- .1 Develop written site-specific Health and Safety Plan prior to commencing site Work and continue to implement, maintain, and enforce plan until final demobilization from site. Health and Safety Plan must address project specifications.
- .2 Ensure Health and Safety guidelines provide for safe and minimal risk working environment for site personnel and minimize impact of activities involving contact with hazardous materials or hazardous wastes on general public and surrounding environment.
- .3 Relief from or substitution for portion or provision of minimum Health and Safety Guidelines specified or reviewed site-specific Health and Safety Plan must submitted to Departmental Representative in writing. Departmental Representative will respond in writing, either accepting or requesting improvements.

1.7 RESPONSIBILITY

- .1 Be responsible for safety of persons and property on site and for protection of persons off site and environment to extent that they may be affected by conduct of Work.
- .2 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.8 HAZARD COMMUNICATION REQUIREMENTS

- .1 Comply with Workplace Hazardous Materials Information System (WHMIS) Regulations, N.S. Reg.
- .2 Comply with Canada Labour Code, Canada Occupational Safety and Health Regulations, Part X - Hazardous Substances.
- .3 Provide Departmental Representative with WHMIS Safety Data Sheets (SDS) and documentation on any "hazardous" chemical that Contractor or Contractor Representatives plan to bring onto site.

1.9 WORK STOPPAGE

- .1 Give precedence to safety and health of public and site personnel and protection of environment over cost and schedule considerations for Work.
- .2 Assign responsibility and obligation to Health and Safety Officer where required to stop or start Work when, at Health and Safety Officer's discretion, it is necessary or advisable for reasons of health or safety. Departmental Representative may also stop Work for health and safety considerations. Any stop work decision due to the contractor not meeting the specification requirements is not grounds for claims of extra cost or time.

1.10 UNFORESEEN HAZARDS

- .1 Should unforeseen or peculiar safety-related factor, hazard, or condition become evident during performance of Work, stop work and immediately advise Departmental Representative verbally and in writing.

1.11 HEALTH AND SAFETY OFFICER

- .1 Employ and assign to Work competent and authorized representative as Health and Safety Officer. Health and Safety Officer shall:
 - .1 Have minimum 2 years' site-related working experience specific to activities associated with excavation and contaminated sites.
 - .2 Have basic working knowledge of specified occupational safety and health regulations.
 - .3 Be responsible for completing Health and Safety Training Session and ensuring that personnel not successfully completing the required training are not permitted to enter site to perform Work in Exclusion Zone or Contaminant Reduction Zone.
 - .4 Be responsible for implementing, enforcing daily and monitoring site-specific Health and Safety Plan.
 - .5 Be on site during execution of Work.

1.12 PERSONNEL HEALTH, SAFETY, AND HYGIENE

- .1 Medical Surveillance:
 - .1 Conduct medical surveillance of personnel as required by specified regulations.
- .2 Training: ensure personnel entering site are trained in accordance with specified personnel training requirements. Training session must be completed by Health and Safety Officer.
- .3 Levels of Protection: establish levels of protection for each Work area based on planned activity and location of activity, and specify minimum PPE requirements for each level of protection. Minimum requirements for all persons on the Site are as follows:
- .4 Level D:
 - .1 Head, Eye, Ear Protection: ear muffs or plugs, hard hat, safety glasses with side shields.
 - .2 Clothing: standard work uniform.
- .5 Personal Protective Equipment:
 - .1 Furnish site personnel with appropriate PPE as specified above. Ensure that safety equipment and protective clothing is kept clean and maintained.
- .6 Develop protective equipment usage procedures and ensure that procedures are strictly followed by site personnel; include following procedures as minimum:
 - .1 Ensure prescription eyeglasses worn are safety glasses and do not permit contact lenses on site within work zones.
 - .2 Ensure footwear is steel-toed safety shoes or boots and is covered by rubber overshoes when entering or working in potentially contaminated work areas.

- .3 Dispose of or decontaminate PPE worn on site at end of each workday.
- .4 Decontaminate reusable PPE before reissuing.
- .7 Heat Stress/Cold Stress: implement cold stress/heat stress monitoring program as applicable and include in site-specific Health and Safety Plan.
- .8 Personnel Hygiene and Personnel Decontamination Procedures. Provide minimum as follows:
 - .1 Suitable containers for storage and disposal of used disposable PPE.
 - .2 Potable water and suitable sanitation facility.
- .9 Emergency and First-Aid Equipment:
 - .1 Locate and maintain emergency and first-aid equipment in appropriate location on site including first-aid kit to accommodate number of site personnel; portable emergency eye wash; two 9 kg ABC type dry chemical fire extinguishers.
- .10 Site Communications:
 - .1 Post emergency numbers near site telephones.
 - .2 Ensure personnel use of "buddy" system and develop hand signal system appropriate for site activities.
 - .3 Provide employee alarm system to notify employees of site emergency situations or to stop Work activities if necessary.
 - .4 Furnish selected personnel with 2-way radios.
 - .5 Safety Meetings: conduct mandatory daily safety meetings for personnel, and additionally as required by special or work-related conditions; include refresher training for existing equipment and protocols, review ongoing safety issues and protocols, and examine new site conditions as encountered. Hold additional safety meetings on as-needed basis.

1.13 AIR MONITORING

- .1 Air Monitoring Program:
 - .1 Develop air monitoring program meeting specified requirements.
 - .2 During progress of work activities, monitor air quality in and around work zones. Conduct monitoring on regular periodic basis, and additionally as required by special or work-related conditions. Report departures from general background to Departmental Representative who will, in conjunction with Health and Safety Officer, determine when operations should be shut down and restarted.
 - .3 Operate air monitoring equipment with personnel trained in equipment provided and under control of Health and Safety Officer.
 - .4 Conduct air monitoring on routine basis around active work locations. Perform hourly monitoring minimum and additionally as dictated by site activities.
 - .5 Furnish wind speed and direction indicator capable of providing permanent record, at unobstructed location on site located above elevation of work area with unobstructed view to affected workers.
- .2 Air Monitoring Reporting: report air monitoring results daily to Departmental Representative on separate form.

1.14 CONTINGENCY AND EMERGENCY RESPONSE

- .1 Meet specified requirements.
- .2 Identify provincial emergency contacts prior to starting work, and maintain this list on-site at all times.

1.15 SITE CONTROL

- .1 Meet specified requirements.
- .2 Before work involving handling of drums and other containers begins, submit procedures for safe handling of drums and other containers. Implement and enforce drum handling program during activities involving drummed waste characterization including but not limited to handling, opening, sampling, staging, and consolidating.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 01 35 29.06 – Health, Safety, and Emergency Response Procedures for Contaminated Sites
- .3 Section 01 74 19 – Waste Management and Disposal

1.2 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-2008 Stipulated Price Contract.
- .2 U.S. Environmental Protection Agency (EPA)/Office of Water
 - .1 EPA 832/R-92-005-[92] , Storm Water Management for Construction Activities, Chapter 3.
 - .2 EPA General Construction Permit (GCP) [2012] .

1.3 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 humans; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

1.4 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures .
- .2 Product Data:
 - .1 Submit 2 copies of WHMIS Safety Data Sheets (SDS) in accordance with Section 01 35 29.13 – Health, Safety, and Emergency Response Procedures for Contaminated Sites.
- .3 Before commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative.
- .4 Environmental Protection Plan must include comprehensive overview of known or potential environmental issues to be addressed during construction.
- .5 Address topics at level of detail commensurate with environmental issue and required construction tasks .
- .6 Include in Environmental Protection Plan:
 - .1 Name[s] of person[s] responsible for ensuring adherence to Environmental Protection Plan.

- .2 Name[s] and qualifications of person[s] responsible for manifesting hazardous waste to be removed from site.
- .3 Name[s] and qualifications of person[s] responsible for training site personnel.
- .4 Descriptions of environmental protection personnel training program.
- .5 Erosion and sediment control plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations .
- .6 Drawings indicating locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
- .7 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather.
 - .1 Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.
- .8 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use.
 - .1 Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.
- .9 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
- .12 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .13 Waste Water Management Plan identifying methods and procedures for management and/or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.
- .14 Historical, archaeological, cultural resources, biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.

1.5 FIRES

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

1.6 DRAINAGE

- .1 Develop and submit Erosion and Sediment Control Plan as part of the Environmental Protection Plan, identifying type and location of erosion and sediment controls provided. Plan to include monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
- .2 Provide temporary drainage and pumping required to keep excavations and site free from water.
- .3 Ensure pumped water into waterways, sewer or drainage systems is free of suspended materials. Pumped water should meet the regulatory requirements of the location into which it is being discharged (i.e. municipal, provincial or federal).
- .4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.7 SITE CLEARING AND PLANT PROTECTION

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

1.8 WORK ADJACENT TO WATERWAYS

- .1 Construction equipment to be operated on land only.
- .2 Top of excavation slope to be no closer than 2 metres from the Higher High Water Mean Tide (HHWMT) level in Tufts Cove or Halifax Harbour, whichever is appropriate for the specific excavation. This will create a berm along the water to minimize surface water infiltration from Tufts Cove or Halifax Harbour.
- .3 Waterways to be kept free of excavated fill, waste material and debris.
- .4 Design and construct temporary crossings to minimize erosion to waterways.
- .5 Do not skid logs or construction materials across waterways.
- .6 Effective sediment and erosion control measures to be installed prior to starting work to prevent entry of sediment into watercourses. Such measures to be inspected regularly and repaired if damaged by construction, precipitation or snowmelt.

1.9 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this Contract.
- .2 Control emissions from equipment and plant in accordance with local authorities' emission requirements.

- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.10 HISTORICAL/ARCHAEOLOGICAL CONTROL

- .1 Provide historical, archaeological, cultural resources, biological resources, and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands known to be on project site: and identifies procedures to be followed if historical archaeological, cultural resources, biological resources and wetlands not previously known to be onsite or in area are discovered during construction.
- .2 Plan: include methods to assure protection of known or discovered resources (including previously identified areas of archeological significance) and identify lines of communication between Contractor personnel and Departmental Representative.

1.11 NOTIFICATION

- .1 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.
- .2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
 - .1 Take action only after receipt of written approval by Departmental Representative.
- .3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 CLEANING

- .1 Progress Cleaning:
 - .1 Leave Work area clean at end of each day.
- .2 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
- .4 Waste Management: separate waste materials for reuse/recycling in accordance with Section 01 74 19- Waste Management and Disposal.

- .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 This Section references to laws, by laws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction, and other legally enforceable requirements applicable to Work and that are; or become, in force during performance of Work.

1.2 RELATED REQUIREMENTS

- .1 Section 02 50 00 – Site Remediation

1.3 REFERENCES TO REGULATORY REQUIREMENTS

- .1 Perform Work in accordance with the following, including amendments up to tender closing date and other codes of provincial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Canada Labour Code - Occupational Health and Safety (R.S.C. 1985, c.L-2).
- .3 Canada Occupational Health and Safety Regulations (SOR/86-304)
- .4 Canadian Environmental Protection Act (S.C. 1999, C.33)
- .5 Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c.34) a.2017.
- .6 Transportation of Dangerous Goods Regulations (SOR/2015-100) a.2017.
- .7 Fisheries Act (R.S.C., 1985, c. F-14) a.2016.
- .8 Guidelines for Canadian Drinking Water Quality (Health Canada, February 2017).
- .9 Wastewater Systems Effluent Regulations (SOR/2012-139) a. 2015.
- .10 Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME, 1999) and amendments (viewed online, 2018).
- .11 Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil (CCME, 2001; revised June 25, 2012; viewed online, 2018).
- .12 Canadian Water Quality Guidelines for the Protection of Aquatic Life (CCME, 1999) and amendments (viewed online, 2018).
- .13 A Federal Approach to Contaminated Sites (Contaminated Sites Management Working Group (CSMWG), 1999).
- .14 Treasury Board Policy on Management of Real Property (TB, 2006).
- .15 Material Safety Data Sheets (MSDS), Health Canada / Workplace Hazardous Materials Information System (WHMIS).
- .16 Construction Project Safety Management Guide, 5th Edition (PWGSC, 2008)
- .17 Canadian Environmental Assessment Act (S.C. 2012, c.19, s.52) a.2017.
- .18 Specific design and performance requirements listed in specifications or indicated on Drawings may exceed minimum requirements established by referenced Code; these requirements will govern over the minimum requirements listed in Code

- .1 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.

1.4 HAZARDOUS MATERIAL DISCOVERY

- .1 Work at site will involve contact with:
 - .1 Metal impacted soil.
 - .2 PHC (total petroleum hydrocarbons) impacted soil.
 - .3 PAH (polycyclic aromatic hydrocarbons) impacted soil.
 - .4 Soil impacted by a combination of Metals, PHCs, and/or PAHs.
 - .5 Potentially hazardous liquids and petroleum based products.

1.5 QUALITY ASSURANCE

- .1 Regulatory Requirements: Except as otherwise specified, Constructor shall apply for, obtain, and pay fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and Contract Documents, based on General Conditions of Contract and the following:
 - .1 Regulatory requirements and fees in force on date of Bid submission, and
 - .2 A change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given before date of tender submission

Part 2 Products

2.1 NOT USED

- .1 Not Used.

2.2 EASEMENTS AND NOTICES

- .1 Owner will obtain permanent easements and rights of servitude that may be required for performance of Work.
- .2 Constructor shall give notices required by regulatory requirements.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 02 50 00 – Site Remediation
- .2 Section 31 00 99 – Earthworks for Minor Works
- .3 Section 31 05 16 – Aggregates for Earthworks
- .4 Section 31 11 00 – Clearing and Grubbing
- .5 Section 31 22 13 – Rough Grading
- .6 Section 31 23 33 01 – Excavating, Trenching and Backfilling

1.2 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-[94] , Stipulated Price Contract.

1.3 INSPECTION

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative will pay cost of examination and replacement.

1.4 INDEPENDENT INSPECTION AGENCIES

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne Departmental Representative.
- .2 Provide equipment required for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Contract. Pay costs for retesting and reinspection.

1.5 ACCESS TO WORK

- .1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.
- .2 Co-operate to provide reasonable facilities for such access.

1.6 PROCEDURES

- .1 Notify appropriate agency and Departmental Representative in advance of 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 orderly sequence to not cause delays in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.7 REJECTED WORK

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 Make good other Contractor's work damaged by such removals or replacements promptly.
- .3 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner will deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative at no cost to the Contract.

1.8 REPORTS

- .1 Submit 4 copies of inspection and test reports to Departmental Representative.
- .2 Provide copies to subcontractor of work being inspected or tested.

1.9 TESTS AND MIX DESIGNS

- .1 Furnish test results and mix designs as requested.
- .2 Cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work will be appraised by Departmental Representative and may be authorized as recoverable.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Approved: 2006-06-30

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 02 50 00 – Site Remediation

1.2 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-1994, Stipulated Price Contract.
- .2 CSA Group (CSA)
 - .1 CAN/CSA-Z321-96(R2001), Signs and Symbols for the Occupational Environment.
- .3 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as of: May 14, 2004, updated 2014.
- .4 U.S. Environmental Protection Agency (EPA) / Office of Water
 - .1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

1.4 INSTALLATION AND REMOVAL

- .1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.
- .2 Identify areas which have to be gravelled to prevent tracking of mud.
- .3 Indicate use of supplemental or other staging area.
- .4 Provide construction facilities in order to execute work expeditiously.
- .5 Remove from site all such work after use.

1.5 SITE STORAGE/LOADING

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

1.6 CONSTRUCTION PARKING

- .1 Parking will be permitted on site provided it does not disrupt performance of Work.

- .2 Provide and maintain adequate access to project site.

1.7 SECURITY

- .1 Provide and pay for responsible security personnel to guard site and contents of site after working hours and during holidays, as required by Departmental Representative.

1.8 EQUIPMENT, TOOL AND MATERIALS STORAGE

- .1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.
- .2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

1.9 SANITARY FACILITIES

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

1.10 CONSTRUCTION SIGNAGE

- .1 Direct requests for approval to erect Consultant/Contractor signboard to Departmental Representative. For consideration general appearance of Consultant/Contractor signboard must conform to project identification site sign. Wording in both official languages.
- .2 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.
- .3 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.

1.11 PROTECTION AND MAINTENANCE OF TRAFFIC

- .1 Provide access and temporary relocated roads as necessary to maintain traffic.
- .2 Maintain and protect traffic on affected roads during construction period except as otherwise specifically directed by Departmental Representative.
- .3 Provide measures for protection and diversion of traffic, including provision of watchpersons and flag-persons, erection of barricades, placing of lights around and in front of equipment and work, and erection and maintenance of adequate warning, danger, and direction signs
- .4 Protect travelling public from damage to person and property.
- .5 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.
- .6 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.
- .7 Construct access and haul roads as necessary.

- .8 Haul roads: constructed with suitable grades and widths; sharp curves, blind corners, and dangerous cross traffic shall be avoided.
- .9 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.
- .10 Dust control: adequate to ensure safe operation at all times.
- .11 Location, grade, width, and alignment of construction and hauling roads: subject to approval by Departmental Representative.
- .12 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.
- .13 Provide snow removal during period of Work.
- .14 Remove, upon completion of work, haul roads designated by Departmental Representative.

1.12 CLEAN-UP

- .1 Remove construction debris, waste materials, packaging material from work site daily.
- .2 Clean dirt or mud tracked onto paved or surfaced roadways.
- .3 Store materials resulting from demolition activities that are salvageable.
- .4 Stack stored new or salvaged material not in construction facilities.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

- .1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to Sediment and Erosion Control Plan, specific to site, in accordance with Section 01 35 43 – Environmental Procedures.
- .2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
- .3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 02 50 00 – Site Remediation
- .2 Section 31 23 33 01 – Excavating, Trenching and Backfilling

1.2 REFERENCE STANDARDS

- .1 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as Of: May 14, 2004, updated 2014.

1.3 INSTALLATION AND REMOVAL

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

1.4 GUARD RAILS AND BARRICADES

- .1 Provide secure, rigid guard rails and barricades around deep excavations, open shafts, open stair wells, open edges of floors and roofs, as applicable.
- .2 Provide as required by governing authorities.

1.5 ACCESS TO SITE

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

1.6 PUBLIC TRAFFIC FLOW

- .1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect public.

1.7 FIRE ROUTES

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

1.8 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.

1.9 WASTE MANAGEMENT AND DISPOSAL

- .1 Separate waste materials for recycling/reuse in accordance with Section 01 74 19- Waste Management and Disposal.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Part 1 General

1.1 SUMMARY

- .1 This Section includes requirements for management of construction waste and disposal, which forms the Contractor's commitment to reduce and divert waste materials from landfill and includes the following:
 - .1 Preparation of a Waste Management Plan that provides guidance on a logical progression of tasks and procedures to be followed in a pollution prevention program to reduce or eliminate the generation of waste, the loss of natural resources, and process emissions through source reduction, reuse, and reclamation.
 - .2 Preparation of monthly progress reports indicating cumulative totals representing progress towards achieving diversion and reduction goals of waste materials away from landfill and identifying any special programs, landfill options or alternatives to landfill used during construction.
 - .3 Preparation of a Waste Management Report containing detailed information indicating total waste produced by the project, types of waste material and quantity of each material, and total waste diverted and diversion rates indicated as a percentage of the total waste produced.
- .2 Owner has established that this project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors be employed by the Contractor.

1.2 RELATED REQUIREMENTS

- .1 Section 01 35 13.43 – Special Project Procedures for Contaminated Sites
- .2 Section 01 35 43 – Environmental Procedures
- .3 Section 01 52 00 – Construction Facilities
- .4 Section 02 50 00 – Site Remediation

1.3 REFERENCE STANDARDS

- .1 American Society for Testing and Materials (ASTM):
 - .1 ASTM E1609 01, Standard Guide for Development and Implementation of a Pollution Prevention Program

1.4 DEFINITIONS

- .1 Clean Waste: Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.
- .2 Contaminated Soil: soil that has been impacted by metals, petroleum hydrocarbons (PHCs) and/or polycyclic aromatic hydrocarbons (PAHs), at concentrations above regulatory guidelines.

- .3 Hazardous: Exhibiting the characteristics of hazardous substances including properties such as ignitability, corrosiveness, toxicity or reactivity.
- .4 Non hazardous: Exhibiting none of the characteristics of hazardous substances, including properties such as ignitability, corrosiveness, toxicity, or reactivity.
- .5 Non toxic: Not poisonous to humans either immediately or after a long period of exposure.
- .6 Reuse: To reuse a construction waste material in some manner on the project site.
- .7 Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- .8 Sediment: Soil and other debris that has been eroded and transported by storm or well production run off water.
- .9 Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- .10 Toxic: Poisonous to humans either immediately or after a long period of exposure.
- .11 Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- .12 Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.
- .13 Waste Management Plan: A project related plan for the collection, transportation, and disposal of the waste generated at the construction site; the purpose of the plan is to ultimately reduce the amount of material being landfilled.

1.5 ADMINISTRATIVE REQUIREMENTS

- .1 Coordination: Coordinate waste management requirements with all Divisions of the Work for the project, and ensure that requirements of the Waste Management Plan are followed.
- .2 Preconstruction Meeting: Arrange a pre-construction meeting in accordance with Section 01 31 19 – Project Meetings before starting any Work of the Contract attended by the Owner, Contractor, affected Subcontractors and Departmental Representative to discuss the Waste Management Plan and to develop mutual understanding of the requirements for a consistent policy towards waste reduction.

1.6 SUBMITTALS

- .1 Provide required information in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Action Submittals: Provide the following submittals before starting any work of this Section:
 - .1 Final Waste Management Plan (Final WM Plan): Submit to Departmental Representative a preliminary analysis of anticipated site generated waste. Departmental Representative will provide commentary before finalization of Waste Management Plan.

1.7 PROJECT CLOSEOUT SUBMISSIONS

- .1 Submit as constructed information in accordance with Section 01 78 00 – Closeout Submittals as follows:
 - .1 Waste Management Report (WM Report): Submit a WM Report for this project in a format acceptable to submittal requirements and that includes the following information:
 - .1 Accounting: Submit information indicating total waste produced by the project.
 - .2 Composition: Submit information indicating types of waste material and quantity of each material.
 - .3 Diversion Rate: Submit information indicating total waste diverted from landfill as a percentage of the total waste produced by the project.
 - .4 Transportation Documentation: Submit copies of transportation documents or shipping manifests indicating weights of materials, and other evidence of disposal indicating final location of waste diverted from landfill and waste sent to landfill.
 - .5 Alternative Daily Cover (ADC): Submit quantities of material that were used as ADC at landfill sites, and that form a part of the total waste generated by the project.
 - .6 Multiple Waste Hauling: Compile all information into a single WM Report where multiple waste hauling and diversion strategies were used for the project.
 - .7 Photographs: Submit photographs of waste diversion facilities documenting location and signage describing usage of waste separation containers.

1.8 QUALITY ASSURANCE

- .1 Resources for Development of Waste Management Report (WM Report): The following sources may be useful in developing the Draft Waste Management Plan:
 - .1 Waste-to-Energy Systems: Investigate local waste-to-energy incentives where systems for diverting materials from landfill for reuse or recycling are not available.

1.9 DELIVERY, STORAGE AND HANDLING

- .1 Storage Requirements: Implement a recycling/reuse program that includes separate collection of waste materials as appropriate to the project waste and the available recycling and reuse programs in the project area.
- .2 Handling Requirements: Clean materials that are contaminated before placing in collection containers and ensure that waste destined for landfill does not get mixed in with recycled materials:
 - .1 Deliver materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.
 - .2 Arrange for collection by or delivery to the appropriate recycling or reuse facility.

- .3 Hazardous Waste and Hazardous Materials: Handle in accordance with applicable regulations.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 WM PLAN IMPLEMENTATION

- .1 Manager: Contractor is responsible for designating an on site party or parties responsible for instructing workers and overseeing and documenting results of the WM Plan for the project.
- .2 Distribution: Distribute copies of the WM Plan to the job site foreman, each Subcontractor, the Owner, the Consultant and the Departmental Representative and other site personnel as required.
- .3 Instruction: Provide on site instruction of appropriate separation, handling, and recycling, salvage, reuse, composting and return methods being used for the project at appropriate stages of the project.
- .4 Separation Facilities: Lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, composting and return:
 - .1 Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.
 - .2 Hazardous wastes shall be separated, stored, and disposed of in accordance with local regulations.
- .5 Progressive Documentation: Submit a monthly summary of waste generated by the project to ensure that waste diversion goals are on track with project requirements:
 - .1 Submission of waste summary can coincide with application for progress payment, or similar milestone event as indicated by the Departmental Representative.
 - .2 Monthly waste summary shall contain the following information:
 - .1 The amount in tonnes or m³ and location of material landfilled,
 - .2 The amount in tonnes or m³ and location of materials diverted from landfill, and
 - .3 Indication of progress based on total waste generated by the project with materials diverted from landfill as a percentage.

3.2 SUBCONTRACTOR'S RESPONSIBILITY

- .1 Subcontractors shall cooperate fully with the Contractor to implement the WM Plan.

- .2 Failure to cooperate may result in the Owner not achieving their environmental goals, and may result in penalties being assessed by the Contractor to the responsible Subcontractors.

END OF SECTION

Part 1 General

1.1 REFERENCE STANDARDS

- .1 Canadian Construction Documents Committee (CCDC)
 - .1 CCDC 2-2008, Stipulated Price Contract.

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Acceptance of Work Procedures:
 - .1 Contractor's Inspection: conduct inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's inspection and submit verification that corrections have been made.
 - .2 Request Departmental Representative inspection.
 - .2 Departmental Representative's Inspection:
 - .1 Departmental Representative and Contractor to inspect Work and identify defects and deficiencies.
 - .2 Contractor to correct Work as directed.
 - .3 Completion Tasks: submit written certificates in English that tasks have been performed as follows:
 - .1 Work: completed and inspected for compliance with Contract Documents.
 - .2 Defects: corrected and deficiencies completed.
 - .3 Certificates required by Utility companies: submitted.
 - .4 Work: complete and ready for final inspection.
 - .4 Final Inspection:
 - .1 When completion tasks are done, request final inspection of Work by Departmental Representative, and Contractor.
 - .2 When Work incomplete according to Departmental Representative, complete outstanding items and request re-inspection.

1.3 FINAL CLEANING

- .1 Remove surplus materials, excess materials, rubbish, tools and equipment.
- .2 Waste Management: separate waste materials for recycling/reuse in accordance with Section 01 74 19- Waste Management and Disposal.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION

Approved: 2009-06-30

Part 1 General

1.1 REFERENCE STANDARDS

- .1 Canadian Environmental Protection Act (CEPA)

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-warranty Meeting:
 - .1 Convene meeting one week prior to contract completion with Departmental Representative, in accordance with Section 01 31 19- Project Meetings to:
 - .1 Verify Project requirements.
 - .2 Review warranty requirements.
 - .2 Departmental Representative to establish communication procedures for:
 - .1 Notifying construction warranty defects.
 - .2 Determine priorities for type of defects.
 - .3 Determine reasonable response time.
 - .3 Contact information for bonded and licensed company for warranty work action: provide name, telephone number and address of company authorized for construction warranty work action.
 - .4 Ensure contact is located within local service area of warranted construction, is continuously available, and is responsive to inquiries for warranty work action.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

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

1.4 FORMAT

- .1 Organize data as instructional manual.
- .2 Binders: vinyl, hard covered, 3 'D' ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 When multiple binders are used correlate data into related consistent groupings.
 - .1 Identify contents of each binder on spine.
- .4 Cover: identify each binder with type or printed title 'Project Record Documents'; list title of project and identify subject matter of contents.
- .5 Arrange content by process flow, under Section numbers and sequence of Table of Contents.
- .6 Drawings: provide with reinforced punched binder tab.
 - .1 Bind in with text; fold larger drawings to size of text pages.
- .7 Provide 1:1 scaled CAD files and source files in dwg format on CD, or as directed by Departmental Representative.

1.5 CONTENTS - PROJECT RECORD DOCUMENTS

- .1 Table of Contents for Each Volume: provide title of project;
 - .1 Date of submission; names.
 - .2 Addresses, and telephone numbers of Contractor with name of responsible parties.
 - .3 Summary of Health and Safety issues, Environmental issues and performance indicators.

1.6 AS -BUILT DOCUMENTS AND SAMPLES

- .1 Maintain, in addition to requirements in General Conditions, at site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to Contract.
 - .5 Field test records.
 - .6 Inspection certificates.
- .2 Store record documents and samples in field office apart from documents used for construction.
 - .1 Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual.
 - .1 Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry and legible condition.
 - .1 Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for inspection by Departmental Representative.

1.7 RECORDING INFORMATION ON PROJECT RECORD DOCUMENTS

- .1 Record information on set of black line opaque drawings, provided by Departmental Representative.
- .2 Use felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress.
 - .1 Do not conceal Work until required information is recorded.
- .4 Contract Drawings and shop drawings: mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by change orders.

- .3 Details not on original Contract Drawings.
- .5 Specifications: mark each item to record actual construction, including:
 - .1 Changes made by Addenda and change orders.
- .6 Other Documents: maintain field test records and inspection certifications, required by individual specifications sections.
- .7 Provide digital photos, if requested, for site records.

1.8 FINAL SURVEY

- .1 Submit final site survey certificate as indicated by Departmental Representative, certifying that elevations and locations of completed Work are in conformance, or non-conformance with Contract Documents.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 NOT USED

- .1 Not Used.

END OF SECTION