
Part 1 GENERAL

1.1 Documents Required

- .1 Maintain at job site, one copy each of the following:
 - .1 Contract drawings;
 - .2 Specifications;
 - .3 Addenda;
 - .4 Reviewed shop drawings/submissions;
 - .5 Change Orders;
 - .6 Other modifications to Contract;
 - .7 Field test reports;
 - .8 Copy of approved work schedule;
 - .9 Manufacturer's installation and application instructions.

1.2 Site Conditions

- .1 Records of existing structures and geotechnical reports may be available for inspection at the offices of Public Works and Government Services Canada, Unit 101, 4th Floor, 1045 Main Street Moncton, NB. This material is not necessarily up-to-date and is for information purposes only. It should be complemented with site visits and consultation with appropriate expertise. The bidder shall contact the contracting officer 48 hours prior to allow time for PSPC to compile required information.

1.3 Work Schedule and Completion Dates

- .1 Prepare and submit to the *Departmental Representative* within five (5) days of notification of Contract award, one (1) copy of the construction schedule, in the form of a bar chart, showing the dates for commencement and completion of each major activity of the work, including the work of subcontractors; dates of submissions, review and return of all drawings, etc.; the dates of Substantial Completion; and intended man hours of labour and equipment for each major items of work. If the schedule as submitted is unacceptable in any way, submit without delay a revised schedule satisfactory to the *Departmental Representative*.
- .2 The *Departmental Representative* is to notify the Contractor in writing of acceptance of the Construction Schedule. Comply with the Dates of the Construction Schedule at all times. If, for any reason the Construction Schedule is not followed, immediately notify the *Departmental Representative* of the changes and submit a revised schedule for acceptance. Upon written acceptance by the *Departmental Representative*, this schedule will become the Construction Schedule.
- .3 Whenever required, give further written particulars concerning this schedule. The submission to and acceptance by the *Departmental Representative* of the Contractor's Construction Schedule or the furnishing of details and particulars thereto will not relieve the Contractor of any duties and responsibilities under the Contract.

1.4 Measurement Responsibilities

- .1 Notify Harbour Authority sufficiently in advance of operations to permit required measurements for payment purposes.
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1.5 Contractor's Use of Site

- .1 Cooperate with Harbour Authority and users of existing facilities. All work taking place will be coordinated and agreed to so that there will be minimal impact to the daily ongoing activities of the harbour.
- .2 Should interference's occur, take directions from *Departmental Representative*.
- .3 Do not unreasonably encumber site with materials or equipment.
- .4 Move stored products or equipment which interfere with operations of *Departmental Representative* or other Contractors.
- .5 Obtain and pay for use of additional storage or work areas needed for operations.
- .6 Comply with all regulations and authorities having jurisdiction over the work, whether on land or on water.
- .7 Ensure no damage occurs to existing structures as a result of operations. Any said damage will be repaired at Contractor's expense.
- .8 Provide temporary barriers and warning signs in location where work is adjacent to areas used by public.

1.6 Codes and Standards

- .1 Perform work in accordance with National Building Code of Canada (NBC) 2015 and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements will apply.
- .2 Meet or exceed requirements of specified standards, codes and referenced documents. When a standard or code is outdated, the latest edition will supersede the referenced date.
- .3 Observe and enforce construction safety measures by Canadian Construction Safety Code and Construction Safety Code of New Brunswick. In the event of conflict between any provisions of above authorities the most stringent provision will apply.
- .4 National Fire Code (NFC) of Canada 2015.

1.7 Project Meetings

- .1 The *Departmental Representative* shall schedule and administer project meetings, for entire duration of work as deemed necessary due to progress of work or particular situation. Depending on the meeting the consultant or the Departmental Representative will record minutes for distribution.
- .2 All project meetings will take place on site of work unless otherwise directed by the *Departmental Representative*.
- .3 The Contractor's superintendent and sub-contractors are to be present at all project meetings.

1.8 Setting Out of Work

- .1 Do all detail surveys necessary for the work, including locating and maintaining working points, and establishing lines and elevations. Perform all layout work, and carefully preserve benchmarks, reference points and stakes.
 - .2 Provide such masts, scaffolds, batter boards, lines, straight edges, templates and other devices as may be necessary to facilitate layout, construction and inspection of the work. Whenever necessary, suspend work for such reasonable time as may be necessary to permit the *Departmental Representative* to check or
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inspect any portion of the Work. The Contractor will not be allowed any extra compensation or time for completion because of this suspension of work.

- .3 Elevations for the various grades and features of the specified works to be referenced and properly related to a benchmark, which will be approved by the *Departmental Representative*.
- .4 Verify all grades, lines, levels, and dimensions shown on the drawings and report any errors or inconsistencies to the *Departmental Representative* before commencing work. Provide and maintain well built batter boards at all points to facilitate the progress of the work. Establish all other grades, lines, levels required to facilitate the work.

1.9 Existing Services

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to pedestrian, vehicular traffic, and services.
- .2 Before commencing work, establish location and extent of service lines in area of work and notify *Departmental Representative* of findings.
- .3 Submit schedule to and obtain acceptance from *Departmental Representative* for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .4 Where unknown services are encountered, immediately advise *Departmental Representative* and confirm findings in writing.

1.10 Contract Documents

- .1 Contract Drawings:
 - .1 The drawings for the Work consist of all drawings listed in these "Plans and Specifications" marked "A" and any additional drawings issued at a later date by the *Departmental Representative*.
 - .2 *Departmental Representative* may furnish additional drawings to assist in proper execution of work. These drawings will be issued for clarification only. Such drawings will have same meaning and intent as if they were included with plans referred to in Contract Documents.
 - .3 The drawings indicate the extent and general dimensions of the work. Make all necessary measurements to ensure that the result of the work is in accordance with the intent.
 - .4 Verify all existing conditions in field prior to proceeding with work.
- .2 Contract Specifications:
 - .1 The general requirements and technical specifications are written solely for the General Contractor. They are organized into the NMS format of separate divisions and sections.
 - .2 Specification language is of the 'Short Form type' for example, where the word "provide" occurs, interpret it to mean "the Contractor shall furnish all labour, material and equipment necessary to complete the work".
 - .3 This Specification and accompanying drawings are intended to describe and provide for a finished project. They are intended to be complementary, and what is called for by either will be as binding as if called for by both. The Contractor shall understand that the work herein described will be complete in every detail, notwithstanding that every item necessarily involved is not particularly mentioned, and Contractor will be held to provide all labour, materials and equipment necessary for the entire completion of the work and will not avail himself of any errors or omissions.

1.11 Permits and Regulations

- .1 Apply for, obtain and pay for all necessary permits, approvals and other authorizations required for the work.
- .2 Comply with all by-laws, ordinances and regulations of all authorities having jurisdiction.
- .3 Pay for any Municipal permits, per General Conditions as stated in the contract.

1.12 Cutting, Fitting and Patching

- .1 Execute cutting (including excavation), fitting and patching required to make work fit properly.
- .2 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work.
- .4 Obtain *Departmental Representative's* approval before cutting, boring or sleeving, or excavating adjacent to load-bearing members.

1.13 Record of Construction

- .1 As work progresses, maintain accurate records to show all deviations from the contract drawings, with particular reference to work which will be concealed. Prior to the inspection of the work for the issuance of the Final Certificate of Completion, provide the *Departmental Representative* with one set of white prints of the drawings with all deviations shown neatly thereon.
- .2 Provide "as built" cross sections of any excavation, dredging or fill work.

1.14 Payment

- .1 Payment for all work under this contract to be according to the Contract.
- .2 No separate payment will be made for work specified under General Conditions, Supplementary Conditions or any sections of Specification under Division 01. The cost of this work is to be considered as overhead and to be included in the unit prices of the Contract.
- .3 Dimensional changes as directed by the *Departmental Representative* to suit existing conditions, but not resulting in additional work or materials, will not be considered as extra to the Contract.

1.15 Site Examination

- .1 All parties tendering should visit the site of the work prior to submission of tenders and make themselves thoroughly acquainted with site conditions, conditions of existing objects to be removed, tides, degree of exposure and all information necessary for the proper carrying out of the work covered by the drawings and this Specification. Submission of Tender will be deemed that Contractor is conversant with site conditions.
- .2 The *Departmental Representative* will give no consideration whatsoever to any claim by the Contractor resulting from failure to have made all the necessary investigations prior to tendering.

1.16 Cooperation & Assistance to *Departmental Representative*

- .1 Co-operate with *Departmental Representative* on inspection of work.
 - .2 Provide assistance when requested.
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- .3 Provide small motor boat with operator and sounding chain for *Departmental Representative's* use when requested.

1.17 Datum

- .1 Datum referred to in this Specification is Chart Datum. Chart Datum is, by International Agreement a plane below which the tide will seldom fall. The Canadian Hydrographic Service has adopted the plane of the lowest normal tide (L.N.T.) as Chart Datum. As the rise, fall, and range of tides varies daily, the Canadian Tide and Current Tables, as issued by the Canadian Hydrographic Service, should be consulted for tidal predictions and other tidal information relating to the work.

1.18 Contractor's Representative

- .1 Continuously maintain on the site an authorized representative to whom communication may be addressed and who will be competent to speak for the Contractor in discussing work methods.

1.19 Workers Compensation

- .1 Contractor and all sub-contractors must be registered under the Workers Compensation Act and provide evidence of good standing.
- .2 At completion of Contract and before final payment is made, the Contractor will present to the *Departmental Representative* a Letter of Certification from the Workers Compensation Board, showing that all required assessments are paid in connection with all trades.

1.20 Laws, Standards Taxes and Fees

- .1 Comply with all laws and standards governing all or any part of the work, pay all applicable taxes and pay for all permits and certificates required in respect of the execution of the work. Where variances exist between the requirements of agencies governing all or any part of the work, the most restrictive will govern, but in no instance will the standards established by the drawings and this Specification, which exceed such requirements, be reduced.

1.21 Protection and Repair

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

1.22 Location of Equipment and Fixtures

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

1.23 Inspection And Testing

- .1 The *Departmental Representative* may employ an Inspector and/or Testing Company to ensure work conforms with contract.

1.24 Disposal of Debris

- .1 Debris, including construction materials not incorporated in the work, oil products and containers, and other materials of this nature will be disposed of in suitable locations off the site. This includes costs of disposing of contaminated materials such as creosote treated timber. Disposal is the responsibility of the Contractor.
- .2 Material from the work will not be permitted to go adrift or otherwise become a menace to navigation.

1.25 Existing Soils Conditions

- .1 Any information pertaining to soils and all boreholes' logs are furnished by the *Departmental Representative* as a matter of general information only and borehole descriptions or logs are not to be interpreted as descriptive of conditions at locations other than those described by the boreholes themselves.

1.26 Relics and Antiquities

- .1 Protect relics, antiquities, items of historical or scientific interest such as cornerstones and contents, commemorative plaques, inscribed tablets, and similar objects found during course of work.
- .2 Give immediate notice to *Departmental Representative* and await written instructions before proceeding with work in this area.
- .3 Relics, antiquities and items of historical or scientific interest remain her Majesty's property.

1.27 Temporary Navigational Buoys

- .1 The Contractor is to maintain temporary buoy's to mark the position of the outer end of the structure as construction proceeds. All buoy's are to meet the requirements of Canadian Coast Guard Standard TP968 and be equipped with radar reflectors.
- .2 During Construction, the wharf removal/construction area shall be marked with a yellow cautionary buoy, to be placed no more than 10 meters from the seaward end of the construction area in order to identify the location of the construction project.
- .3 The Contractor shall coordinate the buoy installation with the local harbour authority.
- .4 The Contractor is responsible for all costs associated with the supply, installation and removal of all temporary navigational buoy's.

END OF SECTION

Part 1 GENERAL

1.1 Submittals

- .1 Upon award of contract and prior to commencement of work, submit to *Departmental Representative* the following work management documents:
 - .1 Work Schedule as specified herein.
 - .2 Shop Drawing Submittal Schedule specified in section 01 33 00.
 - .3 Health and Safety Plan specified in section 01 35 29.

1.2 Work Schedule

- .1 The contractor will coordinate their work with the Harbour Authority's directives.
 - .2 Upon acceptance of bid submit:
 - .1 Detailed work schedule within 5 calendar days of contract award.
 - .2 Schedule to indicate all calendar dates from commencement to completion of all work within the time stated in the accepted bid.
 - .3 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
 - .3 Work schedule content to include as a minimum the following:
 - .1 Bar (GANTT) Charts, indicating all work activities, tasks and other project elements, their anticipated durations, planned dates for achieving key activities and major project milestones.
 - .4 Work schedule must take into consideration and reflect the work phasing, and operational restrictions as indicated on drawings.
 - .5 Schedule work in cooperation with the *Departmental Representative*. Incorporate within Work Schedule, items identified by *Departmental Representative* during review of schedule.
 - .6 Completed schedule shall be approved by *Departmental Representative*. When approved, take necessary measures to complete work within scheduled time. Do not change schedule without *Departmental Representative's* approval.
 - .7 Ensure that all sub trades and subcontractors are made aware of the work restraints and operational restrictions specified.
 - .8 Schedule Updates:
 - .1 Submit on a weekly basis or as otherwise directed by *Departmental Representative*.
 - .2 Provide information and pertinent details explaining reasons for necessary changes to implementation plan.
 - .3 Identify problem areas, anticipated delays, impact on schedule and proposed corrective measures to be taken.
 - .9 *Departmental Representative* will make interim reviews and evaluate progress of work based on approved schedule. Frequency of such reviews will be as decided by *Departmental Representative*. Address and take corrective measures on items identified by reviews and as directed by *Departmental Representative*. Update schedule accordingly.
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- .10 In every instance, change or deviation from the Work Schedule, no matter how minimal the risk or impact on safety or inconvenience to tenant or public might appear, will be subject to prior review and approval by the *Departmental Representative*.

1.3 Operational Restrictions

- .1 The Contractor must recognize that harbour activities and occupants will be affected by implementation of this Contract. The Contractor must perform the work with utmost regard to the safety and convenience of all harbour users. All work activities must be planned and scheduled with this in mind. The Contractor will not be permitted to disturb any portion of the harbour without providing temporary facilities as necessary to ensure safe and direct passage through disturbed or otherwise affected areas.
- .2 Facility circulation maintained:
- .1 Ensure that entrances, roadways, loading zones and other circulation routes are maintained free and clear providing safe and uninterrupted passage for Facility users and public at all times during the entire Work.

1.4 Project Meetings

- .1 The *Departmental Representative* shall schedule and administer project meetings for entire duration of work and as deemed necessary due to progress of work or particular situation. The consultant or the *Departmental Representative* will record minutes for distribution.
- .2 All project meetings will take place on site of work unless otherwise directed by the *Departmental Representative*.
- .3 The Contractor's superintendent and sub-contractors are to be present at all project meetings.

1.5 Work Coordination

- .1 The General Contractor is responsible for coordinating the work of the various trades and predetermining where the work of such trades interfaces with each other.
- .1 Designate one person from own employ having overall responsibility to review contract documents and shop drawings, plan and manage such coordination.
- .2 Work Cooperation:
- .1 Ensure cooperation between trades in order to facilitate the general progress of the work and avoid situations of spatial interference.
- .2 Ensure that each trade provides all other trades reasonable opportunity for the completion of the work and in such a way as to prevent unnecessary delays, cutting, patching and the need to remove and replace completed work
- .3 No extra costs to the Contract will be considered by the *Departmental Representative* as a result of Contractor's failure to effectively coordinate all portions of the Work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor to be resolved at own cost.

1.6 Other Contracts

- .1 Further contracts may be let during the period that this Contract is in progress.
- .2 Cooperate with other Contractors in carrying out their respective work and carry out all instructions from the *Departmental Representative* in this regard.
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- .3 Connect properly and coordinate work with that of other Contractors.

END OF SECTION

Part 1 PROJECT PARTICULARS

1.1 Description of Work

- .1 The work under this contract involves the construction of a new Berlin Wall structure 406 and the reconstruction of the Breakwater structure 301 in Miller Brook, New Brunswick.
 - .2 The general work requirements for this project includes but is not limited to:
 - .1 Mobilization and Demobilization.
 - .2 Submittal of environmental mitigation plan and its implementation(s).
 - .3 Submittal of a Health and Safety Plan, including provision for Covid-19 protection and its implementation (s).
 - .4 Submittal of a demolition plan.
 - .5 Supply, installation, and maintenance of a silt curtain to protect the construction zone from causing silt from entering the watercourse. Contractor is responsible to move it as required to contain the siltation from entering the watercourse.
 - .6 Submit red line as-builts.
 - .7 Restore any damaged area to the construction zone to its original state or better.
 - .8 Cleaning.
 - .3 The work for the construction of structure 406 includes but is not limited to:
 - .1 Complete removal of existing cribwork marginal wharf and disposal of creosote timber, as shown on the drawings.
 - .2 Supply and installation of new Berlin Wall including socketed h-piles, precast concrete panels, steel tie rods, anchor wall/blocks, and associated infilling.
 - .3 Placement of reinforced concrete deck and cap beam.
 - .4 Supply and installation of wharf accessories including mooring holdfasts and HSS wheel guard.
 - .5 Supply and installation of connection brackets for future gangway.
 - .6 Electrical work as detailed on drawings.
 - .4 The work for the reconstruction of breakwater structure 301 cannot commence until December 2022 or without Departmental Representative approval. Commencement of work includes but is not limited to:
 - .1 Gain access to the work area, either by construction of a temporary trestle or by gaining access through private land that is adjacent to the work location.
 - .2 Complete removal and disposal of the treated timber structure, as shown on the drawings.
 - .1 Existing ballast can be reused into the new breakwater structure as indicated on the drawings.
 - .3 Existing armour stone shall be displaced to permit new work and can be reused in the new structure.
 - .4 Reshape existing core material to the location and elevations shown on the drawings.
 - .1 Supply and place any additional core material required to construct the interior of the breakwater, as indicated on the drawings.
 - .5 Supply and installation of geotextile to the location, and elevations shown on the drawings.
 - .6 Supply and placement of filter Stone to the location and elevations shown on the drawings.
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- .7 Supply and placement of armour Stone to the location and elevations shown on the drawings.

Part 2 PROJECT MEASUREMENT

2.1 General

- .1 This section details the measurement method to be used for payment purposes. Incidental items covered in the various sections of the Specification are to be allowed for in the pricing of each pay item.
- .2 The contractor will be requested to provide a breakdown of the lump sum items for payment purposes following award of the contract.

2.2 Measurement for Payment – Structure 406 (R.118345.001)

- .1 Lump Sum Items – The following six (6) items are measured in the tender documents as lump sum items.

Division 01

- .1 Mobilization and Demobilization: All work associated with the mobilization and demobilization of all equipment required to perform and complete the work as outlined in the Contract Drawings, shall be measured for payment by the lump sum.
- .2 Environment Controls: All environment controls required to complete the work shall be measured for payment by the lump sum. This item shall include the preparation of environmental mitigation plan and supply, installation, and maintenance of a silt curtain to protect the construction zone from causing silt and debris from entering the watercourse.

Division 02

- .3 Selective Site Demolition: All sitework, demolition, removals and disposals required to complete the work shall be measured for payment by the lump sum. Any additional demolition and removals essential to complete the work will be considered incidental to this demolition item. The disposal of creosote timber cribwork shall be measured for payment in item 2.7 – Disposal of Timber Cribwork.

Division 05

- .4 Gangway Connection Brackets: All work associated with the fabrication, supply, and installation of gangway connection brackets shall be measured for payment by the lump sum.
- .5 Aluminum Gangway: All work associated with the supply and installation of new aluminum gangway wall shall be measured for payment by the lump sum. All materials, fabrication, hardware, and installation shall not be measured but considered incidental to the work.

Division 26

- .6 Electrical Work: All electrical work shown on the electrical drawings shall be measured for payment by the lump sum. This includes supply and installation of materials and all labour to carry out the work.

- .2 Unit Price Items for Structure 406 – The items noted below have specific units of measurement as indicated in the tender documents.

Division 03

- .1 Reinforced Concrete Deck: Supply and placement of cast-in-place concrete deck (300 mm thick) for new marginal wharf, including cap beam and light bases, shall be measured for payment by the cubic meter (m³). All inserts and drains are incidental to the work. Steel reinforcing, formwork and all supplementary materials will not be measured for payment but considered incidental to the work.
- .2 Miscellaneous Concrete: Supply and placement of miscellaneous cast-in-place concrete, not covered above, including the anchor wall/blocks for Berlin Wall, shall be measured for payment by the cubic meter (m³). All inserts and drains are incidental to the work. Steel reinforcing, formwork and all supplementary materials shall not be measured for payment but considered incidental to the work.
- .3 Expansion Joint: Supply and installation of expansion joint at the interface of existing structure and new structure shall be measured for payment per linear meter (m) successfully installed. Any removals and installation of hardware required to complete the work shall not be measured but incidental to the work.
- .4 Precast Concrete Panels: Supply and installation of precast concrete wall panels for Berlin Wall shall be measured for payment per square meter (m²). All hardware, fasteners, and lifting devices shall be considered incidental to the work.
- .5 Precast Concrete Ladder Panels: Supply and installation of precast concrete ladder panels for Berlin Wall shall be measured for payment per square meter (m²). All hardware, fasteners, ladder rungs, bolts, lifting devices, and ladder inserts shall be considered incidental to the work.

Division 05

- .6 Steel Tie Rods: Supply and installation of steel tie rods shall be measured for payment per each (Ea.). For measurement purposes one tie rod installation will include one tie rod, nuts and washers and one tie rod connection to H-Pile as shown on drawings. The corner frames for Berlin Wall shall be considered incidental to this work.
- .7 Galvanized HSS Wheel Guard: The supply and installation of new galvanized steel wheel guard system shall be measured for payment by the linear meter (m). Handling, fabrication, welding, anchor bolts, cover plates and galvanize will be considered incidental to the work.

Division 31

- .8 Disposal of Timber Cribwork: Disposal of existing timber cribwork shall be measured for payment by the metric tonne based on scale tickets provided for each load transported to an approved dump site. Disposal must be done at a New Brunswick Registered Disposal Site. Disposal slips must be scanned and sent to the Departmental Representative.

- .9 R5 Backfill: Supply and placement of R5 backfill within the limits specified on the drawings shall be measured for payment by the metric tonne based on scale tickets provided for each load entering the site. Supply and installation of filter fabric shall be considered incidental to the work
- .10 R25 Backfill: Supply and placement of R25 backfill within the limits specified on the drawings shall be measured for payment by the metric tonne based on scale tickets provided for each load entering the site.
- .11 Armour Stone: Supply and placement of armour stone within the limits specified on the drawings shall be measured for payment by the metric tonne based on scale tickets provided for each load entering the site. Supply and installation of filter fabric shall be considered incidental to the work.
- .12 Granular Sub-Base: Supply, placement, and compaction of granular sub-base (type 2) shall be measured for payment by the metric tonne based on scale tickets provided for each load entering the site. This item includes supply and placement of gravel, compaction, grading, and all other required work to prepare the grades as indicated on the drawings. Any material placed beyond the lines and grades shown shall not be measured for payment.
- .13 Granular Base: Supply, placement, and compaction of granular base (type 1) shall be measured for payment by the metric tonne based on scale tickets provided for each load entering the site. This item includes supply and placement of gravel, compaction, grading, and all other required work to prepare the finished grades as indicated on the drawings. Any material placed beyond the lines and grades shown shall not be measured for payment.
- .14 Installation of Berlin Wall Piles: The installation of steel H-Piles (HP360x152) for Berlin Walls shall be measured for payment per each (Ea.). All drilling, tremie concrete, casings, hardware, fasteners, bolts, and socket reinforcing shall be considered incidental to this item. Panel support angles, outside corner steel plates, closure plates and tremie concrete shall not be measured but considered incidental to the work.
- .15 Supply of Berlin Wall Piles: Supply of steel H-Piles (HP360x152) for Berlin Walls shall be measured for payment by the linear metre (m) of piling successfully installed.

Division 35

- .16 Mooring Holdfasts: Supply and installation of mooring holdfasts shall be measured for payment per each (Ea.). Bolts and hardware, surface preparation and galvanized shall not be measured, but considered incidental to the work.

2.3 Measurement for Payment – Structure 301 (R.119166.001)

- .1 Lump Sum Items for Structure 301 include the following: Re-use of Existing Rock material, Selective Site Demolition, Sitework, Demolition and Removal, and Geotextiles.
- .1 Re-use of Existing Rock Material: Reconfigure existing rock material already stockpiled onsite from existing breakwater and ballast stone into new breakwater, prior to adding any new material brought in from outside sources. The departmental representative is to be notified from

the contractor upon completion of reshaping of existing rock material into the new breakwater to provide for inspection of this work before proceeding to place any imported rock material.

- .1 Contractor must reuse the existing rock material if deemed suitable, not displace the material outside the work zone. Rock material displaced outside the work zone is not subject to any payment.
- .2 Selective Site Demolition: Complete removal and disposal of the treated cribwork structure and ballast not reused in the new work, will be paid in a lump sum payment. Removed ballast as well as filter stone and core stone already onsite can be incorporated into the new breakwater work, if deemed suitable for reuse, see sections 02 41 16 and 35 31 23.13.
Included in selective site demolition will be the following:
 - .1 Complete removal and disposal of pressure treated and creosote timber from the existing structure 301. Disposal must be done at a New Brunswick Registered Disposal Site. Disposal slips must be scanned and sent to the Departmental Representative.
 - .1 For bidding purposes, the Contractor will assume that all timber to be removed is creosote timber.
 - .2 Includes all excavation, loading, hauling, disposal, and disposal fees.
 - .3 Contractor shall obtain and pay for all necessary permits and disposal fees for use of an approved waste disposal site.
 - .4 Included in this bid item is the Contractor's submittal of a stamped demolition plan from a structural engineer registered in the Province of New Brunswick, required before any work is to commence.
- .3 Sitework, Demolition and Removal: Removal and reinstallation or disposal for construction operations will include:
 - .1 Mobilization and Demobilization of all equipment necessary to make work progress during the entire contract.
 - .2 Submittal of environmental mitigation plan and its implementation.
 - .3 Submittal of a Health and Safety Plan, including provision for Covid-19 protection and its implementation (s).
 - .4 Gain access to the construction zone.
 - .1 A temporary trestle can be constructed between the concrete structure and construction zone. If the Contractor chooses this option, a trestle construction plan stamped by a registered structural engineer from the Province of New Brunswick must be submitted for review. The construction costs for any temporary trestle and its removal shall be incidental to the sitework.
 - .5 Removal of all other items required for the progress of the work will not be measured separately for payment, it will be considered incidental to this contract.
 - .6 All necessary demolition to access the work areas, and any necessary restoration of the areas after reconstruction of structure 301 is completed.
 - .7 All necessary excavation will be included in this section.
 - .8 Supply, maintenance, and relocation as required of a silt boom to prevent any silt from entering the watercourse.
 - .9 All items listed under this section will be paid in a lump sum price.

- .4 Geotextiles: Supply and placement of geotextile as shown on the drawings will be paid in a lump sum payment under this contract, see section 31 32 21.

Note: The following outlines additional specific conditions for the above four items in the tender documents to be separately measured for payment in lump sum amounts, shall include:

- .5 Measurement for reused material will be included in this section. The contractor is to access an estimated amount of rock material available onsite for re-use and show this as a lump sum amount on the tender.
- .6 There will be no payment made for any material or stone placed beyond limits indicated on the drawings. The final contract grade must be within 100 mm of the specific elevation. Any material placed outside the lines and grades as shown on the drawings will not be measured for payment.
- .7 There will be no additional payment for delays caused by vessel traffic.
- .8 There will be no additional payment for downtime.
- .9 There will be no payment for any rock fill core, filter stone or armour stone that is washed out, removed, missing or deteriorated by weather or wave action.
- .10 Mobilization/demobilization of equipment will be paid under section 02 41 16.
- .11 Access to the construction zone and any maintenance of haul roads will be measured for payment under section 02 41 16.
- .12 Excavation and backfill will be included in the unit price for each item listed under this contract.
- .13 Required haulage is included in bid items under this section.
- .14 Contractor's on-site inspection and monitoring is included in the unit bid price for each item required under this contract.
- .15 Construction and maintenance of materials laydown areas, their removal and complete restoration of the areas will not be measured under this contract but will be considered incidental.

- .2 Unit Price Items for Structure 301 – The items noted below have specific units of measurement as indicated in the tender documents.

The amounts of new core stone, filter stone and armour imported and placed into the new breakwater shall be measured separately for each of these three aggregate sizes. All three aggregate sizes shall be measured in metric tonnes.

- .1 Core Stone: Supply and placement of core stone within the limits specified on the drawings shall be measured for payment by the metric tonne based on scale tickets provided for each load entering the site.
- .2 Filter Stone: Supply and placement of filter stone within the limits specified on the drawings shall be measured for payment by the metric tonne based on scale tickets provided for each load entering the site.
- .3 Armour Stone: Supply and placement of armour stone within the limits specified on the drawings shall be measured for payment by the metric tonne based on scale tickets provided for each load entering the site.

END OF SECTION

Part 1 GENERAL

1.1 General

- .1 Submit to *Departmental Representative*, for review, shop drawings, product data, samples and other information specified.
- .2 Until submission is reviewed, work involving relevant product may not proceed.

1.2 Shop Drawings

- .1 Drawings to be originals prepared by contractor, subcontractor, supplier or distributor, which illustrate appropriate portion of work, showing fabrication, layout, setting or erection details as specified in appropriate sections.
- .2 Identify details by reference to sheet and detail numbers shown on Contract Drawings.
- .3 Maximum sheet size 860mm X 1120 mm.

1.3 Product Data

- .1 Certain specification sections specify that manufacturer's standard schematic drawings, catalogue sheets, diagrams schedules, performance chart, illustrations and other standard descriptive data will be accepted in lieu of shop drawings.

1.4 Samples

- .1 Submit samples in sizes and quantities specified.
- .2 Construct field samples and mock-ups at locations acceptable to *Departmental Representative*.
- .3 Accepted samples will become standards of workmanship and material against which, installed work will be checked on project.

1.5 Miscellaneous Data

- .1 Provide certificates, methodologies, design and test results as required.

1.6 Coordination of Submissions

- .1 Review shop drawings, product data, samples and miscellaneous data prior to submissions.
 - .2 Verify:
 - .1 Field Measurements.
 - .2 Field Construction Criteria.
 - .3 Catalogue numbers and similar data.
 - .3 Coordinate each submission with requirements of work and contract documents. Individual submissions will not be reviewed until all related information is available.
 - .4 Contractor's responsibility for errors and omissions in submission is not relieved by the *Departmental Representative's* review of submissions.
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- .5 Contractor's responsibility for deviations in submission from requirements in Contract documents is not relieved by *Departmental Representative's* review of submission, unless *Departmental Representative* gives written acceptance of specified deviations.
- .6 Notify the *Departmental Representative*, in writing at time of submission, of deviations from requirements of contract documents stating reasons for deviations.
- .7 After *Departmental Representative's* review, distribute copies.

1.7 Submission Requirements

- .1 Schedule submissions at least 14 days before dates reviewed submissions will be needed.
- .2 Submit requested number of copies of shop drawings, product data which Contractor requires for distribution, plus two (2) copies which will be retained by *Departmental Representative*.
- .3 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample submitted.
 - .5 Other pertinent data.
- .4 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Contractor.
 - .2 Subcontractor.
 - .3 Supplier.
 - .4 Manufacturer.
 - .5 Separate details when pertinent.
 - .4 Identification of product or material.
 - .5 Relation to adjacent structure or materials.
 - .6 Field dimensions clearly identified as such.
 - .7 Specification Section Number.
 - .8 Applicable standards such as CSA or CGSB numbers.
 - .9 Contractor's stamp, initialed or signed, certifying review of submission, verification of field measurements and compliance with contract documents.

1.8 Shop Drawings Review

- .1 The review of shop drawings by Public Services and Procurement Canada or its authorized consultant, is for the sole purpose of ascertaining conformance with the general concept. This review shall not mean that Public Services and Procurement Canada approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and contract documents. Without restricting the generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at

the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all sub-trades.

1.9 Other Reviews

- .1 As for shop drawings above, other reviews are for the sole purpose of ascertaining the general concept.

END OF SECTION

Part 1 GENERAL

1.1 References

- .1 New Brunswick Department of Transportation
 - .1 Work Area Traffic Control Manual, 2009 (Revised 2021).

1.2 Protection of Public Traffic

- .1 Comply with requirements of Acts, Regulations and By-Laws in force for regulation of traffic or use of roadways upon or over which it is necessary to carry out Work or haul materials or equipment.
- .2 When working on travelled way:
 - .1 Place equipment in position to minimize interference and hazard to travelling public.
 - .2 Keep equipment units as close together as working conditions permit and preferably on same side of travelled way.
 - .3 Do not leave equipment on travelled way overnight.
- .3 Close lanes of road only after receipt of written approval from *Departmental Representative*.
 - .1 Before re-routing traffic erect suitable signs and devices to Work Area Traffic Control Manual.
- .4 Keep travelled way graded, free from potholes and of sufficient width for required number of lanes of traffic.
- .5 Provide and maintain road access and egress to property fronting along Work under Contract and in other areas as indicated, except where other means of road access exist that meet approval of *Departmental Representative*.

1.3 Informational and Warning Devices

- .1 Provide and maintain signs, flashing warning lights and other devices required to indicate construction activities or other temporary and unusual conditions resulting from Project Work which requires road user response.
- .2 Supply and erect signs, delineators, barricades and miscellaneous warning devices to Work Area Traffic Control Manual.
- .3 Place signs and other devices in locations recommended in Work Area Traffic Control Manual.
- .4 Meet with *Departmental Representative* prior to commencement of Work to prepare list of signs and other devices required for project. If situation on site changes, revise list to approval of *Departmental Representative*.
- .5 Continually maintain traffic control devices in use:
 - .1 Check signs daily for legibility, damage, suitability and location. Clean, repair or replace to ensure clarity and reflectance.
 - .2 Remove or cover signs which do not apply to conditions existing from day to day.

1.4 Control of Public Traffic

- .1 Provide competent signaller personnel, trained in accordance with, and properly equipped to the Work Area Traffic Control Manual for situations as follows:
-

- .1 When public traffic is required to pass working vehicles or equipment that block all or part of travelled roadway.
 - .2 When it is necessary to institute one-way traffic system through construction area or other blockage where traffic volumes are heavy, approach speeds are high and traffic signal system is not in use.
 - .3 When workmen or equipment are employed on travelled way over brow of hills, around sharp curves or at other locations where oncoming traffic would not otherwise have adequate warning.
 - .4 Where temporary protection is required while other traffic control devices are being erected or taken down.
 - .5 For emergency protection when other traffic control devices are not readily available.
 - .6 In situations where complete protection for workers, working equipment and public traffic is not provided by other traffic control devices.
 - .7 At each end of restricted sections where pilot cars are required.
 - .8 Delays to public traffic due to contractor's operators: 15 minutes maximum.
- .2 Where roadway, carrying two-way traffic, is restricted to one lane, for 24 hours each day, provide portable traffic signal system.
 - .1 Adjust, as necessary, and regularly maintain system during period of restriction.
 - .2 Ensure signal system meets requirements of Work Area Traffic Control Manual.

1.5 Operational Requirements

- .1 Maintain existing conditions for marine and road traffic throughout period of contract except that, when required for construction under contract and when measures have been taken as specified and approved by *Departmental Representative* to protect and control marine and public traffic.
- .2 Maintain existing conditions for traffic crossing right-of-way.
 - .1 Delays to public traffic: maximum 15 minutes.

END OF SECTION

Part 1 GENERAL

1.1 Section Includes

- .1 Fire Safety Requirements.
- .2 Hot Work Permit.
- .3 Existing Fire Protection and Alarm Systems.

1.2 Related Sections

- .1 Section 01 35 29 – Health and Safety.

1.3 References

- .1 National Fire Code of Canada 2015.
- .2 National Building Code of Canada 2015.
- .3 CSA W117.2:19, Safety in Welding, Cutting and Allied Processes.
- .4 NFPA (Fire) 51, Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes, 2018 Edition.
- .5 Applicable OHS legislation.

1.4 Definitions

- .1 Hot Work - Applies to hot works involving open flames or producing heat or sparks, including, without being limited to, cutting, welding, soldering, brazing, grinding, adhesive bonding, thermal spraying and thawing pipes.

1.5 Submittals

- .1 Submit copy of Hot Work Procedures and sample of Hot Work permit to *Departmental Representative* for review, within 14 calendar days of acceptance of bid.
- .2 Submit in accordance with Section 01 33 00 – Submissions/Shop Drawings.

1.6 Fire Safety Requirement

- .1 Implement and follow fire safety measures during Work. Comply with following:
 - .1 National Fire Code 2015.
 - .2 National Building Code 2015.
 - .3 Provincial OHS Acts and Regulations.
 - .4 CSA W117.2, "Safety in Welding, Cutting and Allied Processes."
 - .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, *Departmental Representative* will advise on the course of action to be followed.
-

1.7 Hot Work Authorization

- .1 Obtain *Departmental Representative's* written "Authorization to Proceed" before conducting any form of Hot Work on site.
- .2 To obtain authorization, submit to *Departmental Representative* for review:
 - .1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
 - .2 Description of the type and frequency of Hot Work required.
 - .3 Sample Hot Work Permit to be used.
- .3 Upon review and confirmation that effective fire safety measures will be implemented and followed during performance of hot work, *Departmental Representative* will give authorization to proceed as follows:
 - .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;
 - .2 Subdivide the work into pre-determined, individual activities, each activity requiring a separately written authorization to proceed.
- .4 Requirement for individual authorization will be based on:
 - .1 Nature or phasing of work;
 - .2 Risk to Facility operations;
 - .3 Quantity of various trades needing to perform hot work on project or;
 - .4 Other situation deemed necessary by *Departmental Representative* to ensure fire safety on premises.
- .5 Do not perform any Hot Work until receipt of *Departmental Representative's* written "Authorization to Proceed" for that portion of work.
- .6 In tenant occupied Facility, coordinate performance of Hot Work with Facility Manager through the *Departmental Representative*. When directed, perform Hot Work only during non-operative hours of the Facility. Follow *Departmental Representative's* directives in this regard.
- .7 Hot works shall be performed only by personnel trained in the safe use of equipment in conformance with this Section.

1.8 Hot Work Equipment

- .1 Maintenance
 - .1 Hot work equipment shall be maintained in good operating condition.
- .2 Inspection
 - .1 Hot work equipment shall be examined for leakage or defects prior to each use.
 - .2 Leaks or defects found in hot work equipment shall be repaired prior to use.
- .3 Equipment Not in Use
 - .1 All valves shall be closed and gas lines bled when Class 2 gas hot work equipment is not in use.
 - .2 Electric hot work equipment shall be de-energized when not in use.
- .4 Compressed Gas Equipment
 - .1 The design and installation of oxygen-fuel gas equipment shall conform to NFPA 51, "Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes."

- .2 Unalloyed copper piping shall not be used for acetylene gas.
- .3 Oil or grease shall not be used with equipment for oxygen.
- .4 Cylinders of Class 2 gases shall conform to Part 3.

1.9 Prevention of Fires

- .1 Location of Operations
 - .1 Except as provided in Sentence (2), hot work shall be carried out in an area free of combustible and flammable contents, with walls, ceilings and floors of non-combustible construction or lined with non-combustible materials.
- .2 When it is not practicable to undertake hot work in an area described in Sentence (1),
 - .1 Combustible and flammable materials within a 15m distance from the hot work shall be protected against ignition in conformance with Article 4 below.
 - .2 A fire watch shall be provided during the hot work and for a period of not less than 60 min after its completion.
 - .3 A final inspection of the hot work area shall be conducted 4 hours after completion of work.
- .3 When there is a possibility of sparks leaking onto combustible materials in areas adjacent to the area where hot work is carried out,
 - .1 Openings in walls, floors or ceilings shall be covered or closed to prevent the passage of sparks to such adjacent areas, or
 - .2 Sentence (2) shall apply to such adjacent areas.
- .4 Protection of Combustible and Flammable Materials
 - .1 Any combustible and flammable material, dust or residue shall be:
 - .1 Removed from the area where hot work is carried out, or
 - .2 Protected against ignition by the use of non-combustible materials.
 - .3 Combustible materials or building surfaces that cannot be removed or protected against ignition as required in Sentence (1) shall be thoroughly wetted where hot work is carried out. Any process or activity that produces flammable gases or vapours, combustible dusts or combustible fibres in quantities sufficient to create a fire or explosion hazard shall be interrupted and the hazardous conditions shall be removed before any hot work is carried out.

1.10 Hot Work Procedures

- .1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.
- .2 Hot Work Procedures to include:
 - .1 Requirement to perform hazard assessment of site and immediate work area beforehand for each hot work event in accordance with Safety Plan specified in section 01 35 29.
 - .2 Use of a Hot Work Permit system with individually issued permit by Contractor's Superintendent to worker or subcontractor granting permission to proceed with Hot Work.
 - .3 Permit required for each Hot Work event.

- .4 Designation of a competent person on site as a Fire Safety Watcher responsible to conduct a fire safety watch for a minimum duration of 60 minutes immediately following the completion of the Hot Work.
- .5 Compliance with fire safety codes, standards and occupational health and safety regulations specified.
- .6 Site specific rules and procedures in force at the site as provided by the Facility Manager.
- .3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Label document as being the Hot Work Procedures for this contract.
- .4 Procedures shall clearly establish responsibilities of:
 - .1 Worker performing hot work,
 - .2 Person issuing the Hot Work Permit,
 - .3 Fire Safety Watcher,
 - .4 Subcontractor(s) and Contractor.
- .5 Brief all workers and subcontractors on Hot Work Procedures and of Permit system. Stringently enforce compliance.

1.11 Hot Work Permit

- .1 Hot Work Permit to include the following:
 - .1 Project name and project number;
 - .2 Building name and specific room or area where hot work will be performed;
 - .3 Date of issue;
 - .4 Description of hot work type needed;
 - .5 Special precautions to be followed, including type of fire extinguisher needed;
 - .6 Name and signature of permit issuer.
 - .7 Name of worker to which the permit is issued.
 - .8 Permit validity period not to exceed 8 hours. Indicate start time/date and termination time/date.
 - .9 Worker's signature with time/date of hot work completion.
 - .10 Stipulated time period of safety watch.
 - .11 Fire Safety Watcher's signature with time/date.
- .2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.
- .3 Each Hot Work Permit to be completed in full, signed and returned to Contractor's Superintendent for safe keeping on site.

1.12 Fire Protection and Alarm Systems

- .1 Fire protection and alarm systems shall not be:
 - .1 Obstructed.
 - .2 Shut-off, unless approved by *Departmental Representative*.
 - .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.

- .3 Costs incurred, from the fire department, Facility owner, resulting from negligently setting off false alarms will be charged to the Contractor in the form of financial progress payment reductions and holdback assessments against the Contract.

1.13 Documents on Site

- .1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.
- .2 Upon request, make available to *Departmental Representative* or to authorized safety Representative for inspection.

END OF SECTION

Part 1 GENERAL

1.1 Section Includes

- .1 Procedures to isolate and lockout electrical facility or other equipment from energy source.

1.2 Related Work

- .1 Section 01 35 29 – Health and Safety.

1.3 References

- .1 CSA C22.1:21, Canadian Electrical Code, Part 1 (25th Edition), Safety Standard for Electrical Installations.
- .2 CSA C22.3 No.1:20, Overhead Systems.
- .3 CSA C22.3 No.7:20, Underground Systems.
- .4 COSH, Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

1.4 Definitions

- .1 **Electrical Facility:** means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.
- .2 **Guarantee of Isolation:** means a guarantee by a competent person in control or in charge that a particular facility or equipment is isolated.
- .3 **De-energize:** in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).
- .4 **Guarded:** means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.
- .5 **Isolate:** means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.
- .6 **Live/alive:** means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

1.5 Compliance Requirements

- .1 Comply with the following in regards to isolation and lockout of electrical facilities and equipment:
 - .1 CSA C22.1, Canadian Electrical Code.
 - .2 Federal and Provincial Occupational Health and Safety Acts and Regulations.
 - .3 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.
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- .4 Procedures specified herein.
 - .5 CSA Z460:20, Control of Hazardous Energy – Lock Out and Other Methods.
 - .6 CSA Z 462:21, Workplace Electrical Safety.
- .2 In event of conflict between any provisions noted above, the most stringent provision will apply.

1.6 Submittals

- .1 Submit copy of lockout procedures, sample of lockout permit and lockout tags proposed for use in accordance with Section 01 33 00 – Submissions and Shop Drawings. Submit within 14 calendar days of acceptance of bid.

1.7 Isolation of Existing Services

- .1 Obtain *Departmental Representative's* written authorization prior to working on existing live or active electrical facilities and equipment and before proceeding with isolation of such item.
- .2 To obtain authorization, submit to *Departmental Representative* following documentation:
- .1 Written Request for Isolation of the service or facility and;
 - .2 Copy of Contractor's Lockout Procedures.
- .3 Make a request for Isolation for each event, unless directed otherwise by *Departmental Representative*, and as follows:
- .1 Fill-out standard forms in current use at the Facility when so directed by *Departmental Representative* or;
 - .2 Where no form exist at Facility, make request in writing identifying:
 - .1 Identification of system or equipment to be isolated, including it's location;
 - .2 Time duration, indicating Start time & date and Completion time & date when isolation will be in effect.
 - .3 Voltage of service feed to system or equipment being isolated.
 - .4 Name of person making the request.
- .4 Do not proceed with isolation until receipt of written notification from *Departmental Representative* granting the Isolation Request and authorizing to proceed with the work.
- .1 Note that *Departmental Representative* may designate another person at the Facility being authorized to grant the Isolation Request.
- .5 Conduct safe, orderly shutdown of equipment or facility. De-energize, isolate and lockout power and other sources of energy feeding the equipment or facility.
- .6 Plan and schedule shut down of existing services in consultation with the *Departmental Representative* and the Facility Manager. Minimize impact and downtime of Facility operations. Follow *Departmental Representative's* directives in this regard. Provide temporary power to other equipment that needs to be remain operational if a shutdown is not possible.
- .7 Determine in advance, as much as possible, in cooperation with the *Departmental Representative*, the type and frequency of situations which will require isolation of existing services.
- .8 Conduct hazard assessment as part of the process in accordance with health and safety requirements specified Section 01 35 29 – Health and Safety.
- .9 When entire sections of the facility need to be locked-out to do full demolition a separate temporary construction power distribution is to be provided for this purpose.

1.8 Lockouts

- .1 De-energize, isolate and lockout electrical facility, mechanical equipment and machinery from all potential sources of energy prior to working on such items.
- .2 Develop and implement clear and specific lockout procedures to be followed as part of the Work.
- .3 Prepare typed written Lockout Procedures describing safe work practices, procedures, worker responsibilities and sequence of activities to be followed on site by workforce to safely isolate an active piece of equipment or electrical facility and effectively lockout and tagout its sources of energy.
- .4 Provide appropriate safety grounding and guards as required.
- .5 Include as part of the Lockout Procedures a system of lockout permits managed by Contractor's Superintendent or other qualified person designated by him/her as being "in-charge" at the site.
 - .1 A lockout permit shall be issued to specific worker providing a Guarantee of Isolation before each event when work must be performed on a live equipment or electrical facility.
 - .2 Duties of person managing the permit system to include:
 - .1 Issuance of permits and lockout tags to workers.
 - .2 Determining permit duration.
 - .3 Maintaining record of permits and tags issued.
 - .4 Making a Request for Isolation to *Departmental Representative* when required as specified above.
 - .5 Designating a Safety Watcher, when one is required based on type of work.
 - .6 Ensuring equipment or facility has been properly isolated.
 - .7 Collecting and safekeeping lockout tags returned by workers as a record of the event.
- .6 Clearly establish, describe and allocate responsibilities of:
 - .1 Workers.
 - .2 Person managing the lockout permit system.
 - .3 Safety Watcher.
 - .4 Subcontractor(s) and General Contractor.
- .7 Generic procedures, if used, must be edited and supplemented with pertinent information to reflect specific project requirements.
 - .1 Incorporate site specific rules and procedures in force at site as provided by Facility Manager through the *Departmental Representative*.
 - .2 Clearly label the document as being the Lockout procedures applicable to work of this contract.
- .8 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.
- .9 Use industry standard lockout tags.

1.9 Conformance

- .1 Brief all workers and subcontractors on requirements of this section. Stringently enforce use and compliance.

1.10 Documents on Site

- .1 Post Lockout Procedures on site in common location for viewing by workers.

- .2 Keep copies of Request for Isolation forms and lockout permits and tags issued to workers on site for full duration of Work.
- .3 Upon request, make available to *Departmental Representative* or to authorized safety representative for inspection.

END OF SECTION

Part 1 GENERAL

1.1 Related Work

- .1 Section 01 35 24 – Special Procedures on Fire Safety Requirements.
- .2 Section 01 35 25 – Special Procedures on Lockout Requirements.
- .3 PSPC Policy on Occupational Health and Safety <https://masource-mysource.spac-pspc.gc.ca/eng/services/rh-hr/santeseuritetravail-occupationalhealthsafety/normes-documents-standards/Pages/default.aspx>
- .4 PSPC Directive on Construction Occupational Health and Safety <https://masource-mysource.spac-pspc.gc.ca/eng/services/rh-hr/santeseuritetravail-occupationalhealthsafety/normes-documents-standards/Pages/default.aspx>
- .5 PSPC Standard on Construction Occupational Health and Safety <https://masource-mysource.spac-pspc.gc.ca/eng/services/rh-hr/santeseuritetravail-occupationalhealthsafety/normes-documents-standards/Pages/securite-construction-security.aspx>

1.2 Definitions

- .1 Competent Person: means a person who is:
 - .1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and;
 - .2 Knowledgeable about the provisions of occupational health and safety statutes and regulations that apply to the Work and;
 - .3 Knowledgeable about potential or actual danger to health or safety associated with the Work.
- .2 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
- .3 PPE: personal protective equipment.
- .4 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.
- .5 Incident - occurrence, condition, or situation arising in the course of work that resulted in or could have resulted in injury, illness, property damage, environmental issues or fatality

1.3 Submittals

- .1 Make submittals in accordance with Section 01 33 00 – Submissions/Shop Drawings.
 - .2 Submit site-specific Health and Safety Plan prior to commencement of Work.
 - .1 Submit within 10 work days of notification of Bid Acceptance. Allow for 5-10 days for Department review and recommendations prior to the commencement of work.
 - .2 *Departmental Representative* will review Health and Safety Plan and provide comments.
 - .3 Revise the Plan as appropriate and resubmit within 5 work days after receipt of comments.
 - .4 *Departmental Representative's* review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
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- .5 Submit revisions and updates made to the Plan during the course of Work.
- .3 Submit name of designated Health and Safety Site Representative and support documentation specified in the Safety Plan.
- .4 Submit building permit, compliance certificates and other permits obtained.
- .5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other Department of Labour organization.
 - .1 Submit update of Letter of Good Standing whenever expiration date occurs during the period of Work.
- .6 Submit copies of reports or directions issued by Federal or Provincial authorities within 24 hours after the visit to the *Departmental Representative*.
- .7 Submit copies of incident reports (incident, accident, injury, near-miss, fire, explosion, chemical spill or damage to property occurring at the work site) 24 hours after the event to the *Departmental Representative*.
- .8 Submit documented plans as prescribed through Public Health requirements, directions, orders and declarations. Include industry best practices when preparing the plan and revise/update accordingly and in a timely manner as per Public Health requirements and recommended industry best practices.

1.4 Compliance Requirements

- .1 Requirements are as follow:
 - .1 Comply with Occupational Health and Safety Act for Province of New Brunswick, and Regulations made pursuant to the Act.
 - .2 Comply with Provincial/Federal Public Health requirements, directions, and declarations. Prepare documented plans as prescribed by Public Health and/or industry best practices in consultation with the *Departmental Representative*.
 - .3 Canadian Standards Association (CSA):
 - .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
 - .4 Observe construction safety measures of:
 - .1 NBC 2015, Division B, Part 8.
 - .2 NFC 2015,
 - .3 Municipal by-laws and ordinances.
 - .5 In case of conflict or discrepancy between above specified requirements, the more stringent shall apply.
 - .6 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter in Good Standing.
 - .7 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.

1.5 Responsibility

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

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

1.6 Site Control and Access

- .1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
 - .1 *Departmental Representative* will provide names of those persons authorized by *Departmental Representative* to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.
- .2 Isolate Work Site from other areas of the premises by use of appropriate means.
 - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment.
 - .2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.
 - .3 Use professionally made signs with bilingual message in the 2 official languages or international known graphic symbols.
- .3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site. Maintain records of such orientation on site for review and audit by the DR or their authorized inspector.
- .4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.
- .5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm.

1.7 Protection

The contractor shall;

- .1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.
- .2 Should unforeseen or peculiar safety related hazard or condition become evident during performance of Work, immediately take measures to rectify situation and prevent damage or harm. Advise *Departmental Representative* verbally and in writing.

1.8 Filing of Notice

The contractor shall;

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

1.9 Permits

The contractor;

- .1 Is responsible to pay all fees to obtain all permits required to conduct the work.

- .2 Is responsible to provide authorities with plans and information for acceptance certificates and the costs arising from same.
- .3 Is responsible to provide inspections certificates as evidence that work conforms to requirements of Authorities Having Jurisdiction (AHJ)
- .4 Post permits, licenses and compliance certificates, specified in section 01 10 10, at Work Site.
- .5 Where a particular permit or compliance certificate cannot be obtained, notify *Departmental Representative* in writing and obtain approval to proceed before carrying out applicable portion of work.

1.10 Hazard Assessments

The contractor shall;

- .1 Perform a documented site specific Project hazard assessment for the Work. Include any site issues / hazards / concerns identified arising from the site visit that must be considered.
- .2 Carryout initial assessment prior to commencement of Work with further assessments completed and documented as needed during progress of work, including when new trades and subcontractors arrive on site.
- .3 Record results and address in Health and Safety Plan.
- .4 Share information and controls identified from original and updated Project hazard assessments with project workers. Record this information sharing complete with names and dates. Keep documentation on site for entire duration of the Work.

1.11 Project / Site Conditions

- .1 Existing site conditions include overhead power lines and an active harbour facility.
- .2 Above items shall not be construed as being complete and inclusive of potential health and safety hazards encountered during Work.
- .3 Include above items in the hazard assessment of the Work.
- .4 MSDS Data sheets of pertinent hazardous and controlled products stored on site can be obtained from *Departmental Representative*.

1.12 Meetings

The contractor shall;

- .1 Attend pre-construction health and safety meeting, convened and chaired by *Departmental Representative*, prior to commencement of Work, at time, date and location determined by *Departmental Representative*. Ensure attendance of:
 - .1 Superintendent of Work.
 - .2 Designated Health & Safety Site Representative.
 - .3 Subcontractors.
- .2 Conduct pre shift tool box talks with the crew and conduct regularly scheduled (minimum bi-weekly) safety meetings during the Work.
- .3 Keep documents on site for review by *Departmental Representative* or their authorized rep.

1.13 Health and Safety Plan

The contractor shall;

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the Work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Items to include in the Site Specific Safety Plan;
 - .1 Name of the designated Site Safety Rep showing proof of their competence and reporting relationship in Contractor's company. This person is expected to be on site during all work execution.
 - .2 A copy of a current WCB Letter of Good Standing.
 - .3 Details as to how WHMIS 2015 / GHS will be managed on site.
 - .4 Details as to how the Project work areas will be delineated/protected from other areas of the premises (fences, signs). Must be project specific.
 - .5 Details as to how Safety orientations will be managed. Include a summary of what topics are covered in the safety orientation described in this section?
 - .6 A copy of a Notice of Project that was sent to the Provincial OHS regulator.
 - .7 Project site specific hazard assessment.
 - .8 Details as to how tool box and safety meetings will be held and recorded.
 - .9 An organizational chart illustrating supervision and subs (if available) that are assigned to this Project.
 - .10 On-site Emergency Response Plans that cover all potential emergency situations that could arise. This should harmonize with the facility if possible. Emergency Contacts: name and telephone number of officials from:
 - .1 General Contractor and subcontractors. (key personnel)
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction
 - .3 Local emergency resource organizations.
 - .11 List of critical work activities which have a risk of endangering health and safety of Facility users and/or others.
 - .12 Details as to how the subcontractors documented safety program will be reviewed and managed prior to allowing them to work on site.
 - .13 Details as to how the site safety inspection program will be managed. Include frequency, assignment of responsibility as well as standard inspection form to be used.
 - .14 Basic PPE requirements as well as specialized PPE requirements; minimum being hard hat, safety footwear, safety glasses and high visible vest.
 - .15 General safety rules as well as the disciplinary protocols to be taken for noncompliance.
 - .16 Details as to how Incident investigations will be managed. Include procedure and incident form.
- .3 Post copy of the Plan, and updates, prominently on Work Site.

1.14 Safety Supervision

- .1 Employ Health & Safety Site Representative responsible for daily supervision of health and safety of the Work.

- .2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:
 - .1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work
 - .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
 - .3 Conduct site safety orientation session to persons granted access to Work Site.
 - .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.
 - .5 Stop the Work as deemed necessary for reasons of health and safety.
- .3 Health & Safety Site Representative must:
 - .1 Be qualified and competent person in occupational health and safety.
 - .2 Have site-related working experience specific to activities of the Work.
 - .3 Be on Work Site at all times during execution of the Work.
- .4 All supervisory personnel assigned to the Work shall also be competent persons.
- .5 Inspections:
 - .1 Conduct regularly scheduled safety inspections of the Work on a minimum bi-weekly basis. Record deficiencies and remedial action taken.
 - .2 Follow-up and ensure corrective measures are taken.
 - .3 Share inspection reports with crews / subs.
- .6 Cooperate with the Facility's and / or the PSPC Occupational Health and Safety representative.
- .7 Keep inspection reports and supervision related documentation on site.

1.15 Training

- .1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.
- .2 Permit employees registered in Provincial apprenticeship program to perform specific tasks only if under direct supervision of qualified licensed workers. Determine permitted activities and tasks by apprentices, based on level of training attended and demonstration of ability to perform specific duties.
- .3 Maintain employee records and evidence of training received. Make data available to *Departmental Representative* upon request.
- .4 When unforeseen or peculiar safety-related hazard, or condition occur during performance of Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise *Departmental Representative* verbally and in writing.

1.16 Minimum Site Safety Rules

- .1 Notwithstanding requirement to abide by federal and provincial health and safety regulations; the company shall establish rules to govern the conduct and actions of their employees. These rules should leave no room for discretion and argument. The rules must be enforced and action should be taken every time a rule is violated.
- .2 Brief persons of the documented disciplinary protocols to be taken for noncompliance. Post rules on site.

1.17 Correction of Non Compliance

The contractor shall;

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

1.18 Incident Reporting

- .1 Investigate and report all incidents to *Departmental Representative*.
- .2 Notify the *Departmental Representative* as soon as reasonably practicable following the incident.
- .3 Ensure the Authority having Jurisdiction is notified as prescribed by applicable legislation.
- .4 Submit report in writing.

1.19 Hazardous Products

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

1.20 Blasting

- .1 Blasting or other use of explosives is not permitted on site.

1.21 Powder Actuated Devices

- .1 Use powder actuated fastening devices only after receipt of written permission from *Departmental Representative*.

1.22 Confined Spaces

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

1.23 Site Records

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

1.24 Posting of Documents

- .1 Ensure applicable items, articles, notices and orders are posted in a conspicuous location on the Work Site in accordance with Acts and Regulations of Province. See local legislation for specifics.
 - .2 Post other documents as specified herein, including:
-

- .1 Site specific Health and Safety Plan.
- .2 WHMIS data sheets.

END OF SECTION

Part 1 GENERAL

1.1 Related Sections

- .1 Section 01 74 21 – Construction and Demolition Waste Management and Disposal.

1.2 References Standard

- .1 Contractor to submit methods, means, and sequences for compliance with: applicable permits, certificates, approvals, or any other form of authorizations; other federal, provincial, or municipal requirements; and in accordance with the Contract.
- .2 Generally, provincial, territorial and municipal laws, regulations, bylaws and other requirements do not apply to federal lands, works or undertakings. Soil, sediment, water or other materials that are removed from federal lands may become subject to provincial, territorial or municipal laws and regulations.
- .3 Provincial, territorial or municipal standards may be used in relation to federal lands only as guidelines for the purpose of establishing remediation goals and objectives. The term "standards" is used in this part in order to maintain consistency in terminology throughout this document, and does not imply that standards contained in provincial, territorial or municipal laws and regulations apply on Federal lands, activities or undertakings.

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.
- .3 Environmental Protection Plan: plan developed by the Contractor to ensure Environmental Protection and prevent Environmental Pollution and Damage identifying all environmental risks and mitigation measures, including: personnel requirements, emergency contacts, Environmental Protection methods, procedures, and equipment, and emergency response including a Spill Control Plan.

1.4 Action and Informational Submittals

- .1 Submit in accordance with Section 01 33 00 – Submissions/Shop Drawings.
 - .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for environmental protection and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit 2 copies of WHMIS Safety Data Sheets (SDS) in accordance with Section 01 35 29 - Health and Safety Requirements.
 - .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 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
 - .3 Names and qualifications of persons 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 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.
 - .15 Pesticide treatment plan to be included and updated, as required.

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 (ESC) 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 Storm Water Pollution Prevention Plan (SWPPP) to be substituted for erosion and sediment control plan.
- .3 Provide temporary drainage and pumping required to keep excavations and site free from water.
- .4 Manage disposal or runoff of water 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 Use waterway beds for borrow material only after written receipt of approval from *Departmental Representative*.
- .3 Waterways to be kept free of excavated fill, waste material, and debris.
- .4 Design and construct temporary crossings to minimize the potential for erosion and prevent equipment from entering waterways.
- .5 Do not skid logs or construction materials across waterways.
- .6 Avoid indicated spawning beds when constructing temporary crossings of waterways.
- .7 Blasting is not permitted on site.

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 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.
 - .1 Provide temporary enclosures where directed by *Departmental Representative*.
 - .4 Cover or wet down dry materials 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 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

NOT APPLICABLE

Part 3 EXECUTION

3.1 Cleaning

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - 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 in accordance with Section 01 74 11 - Cleaning.
- .4 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction & Demolition Waste Management and Disposal.

END OF SECTION

Part 1 GENERAL

1.1 Related Requirements

- .1 Requirements for inspection and testing to be carried out by testing laboratory designated by *Departmental Representative* are specified under various sections.

1.2 Independent Inspection Agencies

- .1 Appointment and Payment
 - .1 *Departmental Representative* will appoint and pay for services of testing laboratory as part of their own Quality Assurance program. However, the Contractor is responsible for the payment and coordination of all Quality Control Testing, including:
 - .1 All field quality control testing and inspection items relating to the Contractor's work. The Contractor will be responsible for all testing as part of their work to ensure Quality Control. All results must be forwarded to the *Departmental Representative* for review.
 - .2 Inspection and testing required by laws, ordinances, rules, regulations, or orders of public authorities.
 - .3 Inspection and testing performed exclusively for Contractor's convenience.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests specified to be carried out by Contractor under the supervision of *Departmental Representative*.
 - .6 Weld testing if required shall be the contractor's responsibility.
 - .2 Where tests or inspections by a designated testing laboratory reveal work is not in accordance with contract requirements, Contractor shall pay costs for additional tests or inspections as *Departmental Representative* may require verifying acceptability of corrected work.
- .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 *Departmental Representative*. Pay costs for retesting and

1.3 Contractor's Responsibilities

- .1 Furnish labour and facilities to:
 - .1 Provide access to work to be inspected and tested.
 - .2 Facilitate inspections and tests.
 - .3 Make good work disturbed by inspection and test.
 - .4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.
 - .2 Notify *Departmental Representative* sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.
 - .3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
-

- .4 Pay costs for uncovering and making good work that is covered before required inspection or testing is completed and approved by *Departmental Representative*.

END OF SECTION

Part 1 GENERAL

1.1 Access

- .1 Provide and maintain adequate access to project site.
- .2 If authorized to use existing roads or structures for access to project site, maintain such roads for duration of Contract and make good damage resulting from Contractor's use of roads.
- .3 The Contractor is to maintain full access to the work site. Should a court injunction be required ordering a person or group to refrain from impeding access to the site, such as a demonstration, picketing or union action, then obtaining the injunction and any associated costs will be considered incidental to this Contract. Any delays associated with such activity will be considered incidental to this Contract.

1.2 Contractor's Site Office

- .1 Establish on the site of the work and keep open at all times during the execution of the work an office where all letters, orders, notices, and other communications may be received or acknowledged either by the Contractor or his authorized agent or representative. Provide a telephone in the office.
- .2 Keep one up-to-date copy of contract documents, bulletins and other materials as specified under Section 01 10 10.

1.3 Storage Sheds

- .1 Provide adequate weather tight sheds with raised floors, for storage of materials, tools and equipment which are subject to damage by weather.
- .2 Contractor to make his own arrangements for on-site storage areas.

1.4 Sanitary Facilities

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

1.5 Parking

- .1 Contractor to make own arrangements to provide parking space for work force.

1.6 Power

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

1.7 Water Supply

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

1.8 Barricades

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

1.9 Security

- .1 Contractor to make his own arrangements for security of his equipment, materials, damages resulting from fire and theft.

1.10 Site Signs and Notices

- .1 Only Project Identification and Consultant/ Contractor signboards and notices for safety or instruction are permitted on site.
- .2 Format, location and quantity of site signs and notices to be accepted by *Departmental Representative*.
- .3 Signs and notices for safety or instruction to be in English and French languages, or commonly understood graphic symbols.

1.11 Removal of Temporary Facilities

- .1 Remove temporary facilities from site when directed by *Departmental Representative*.
- .2 When project has shut down for a period of time, keep temporary facilities operational until no longer required by *Departmental Representative*.

END OF SECTION

Part 1 GENERAL

1.1 Installation and Removal

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

1.2 Guard Rails and Barricades

- .1 Provide secure, rigid guard rails and barricades around deep excavations.
- .2 Provide as required by governing authorities.

1.3 Access to Site

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

1.4 Public Traffic Flow

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

1.5 Fire Routes

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

1.6 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.

1.7 Waste Management and Disposal

- .1 Separate waste materials in accordance with Section 01 74 21 – Construction and Demolition Waste Management and Disposal.

END OF SECTION

Part 1 GENERAL

1.1 General

- .1 Use new material and equipment unless otherwise specified.
- .2 Submit following information for any or all materials and products proposed for supply within seven (7) days of request by *Departmental Representative*:
 - .1 Name and address of manufacturer.
 - .2 Trade name, model and catalogue number.
 - .3 Performance, descriptive and test data.
 - .4 Manufacturer's installation or application instructions.
 - .5 Evidence of arrangements to procure.
- .3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.
- .4 Use products of one manufacturer for equipment or material of same type or classification unless otherwise specified.

1.2 Manufacturer's Instructions

- .1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods.
- .2 Notify *Departmental Representative* in writing of any conflict between these specifications and manufacturers' instructions. *Departmental Representative* will designate which document is to be followed.

1.3 Fastenings – General

- .1 All fastenings are to be the sizes indicated on the contract plans and are to be hot dipped galvanized to ASTM A123 unless otherwise noted.

1.4 Delivery and Storage

- .1 Deliver, store and maintain packaged material and equipment with manufacturer's seal and labels intact.
- .2 Prevent damage, adulteration and soiling of material and equipment during delivery, handling and storage. Immediately remove rejected material and equipment from site.
- .3 Store material and equipment in accordance with supplier's instructions.

1.5 Conformance

- .1 When material or equipment is specified by standard or performance specifications, upon request of *Departmental Representative*, obtain from manufacturer an independent testing laboratory report, stating that material or equipment meets or exceeds specified requirements.
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1.6 Substitution

- .1 Proposals for substitution may be submitted only after award of Contract. Such requests must include statements of respective costs of items originally specified and proposed substitutions.
- .2 Proposals will be considered by *Departmental Representative* if:
 - .1 Products selected by tenderer from those specified, are not available, or
 - .2 Delivery date of products from those specified would unduly delay completion of Contract, or
 - .3 Alternative products to those specified, which are brought to attention of, and considered by *Departmental Representative* as equivalent to those specified and will result in a credit to Contract amount.
- .3 Should proposed substitution be accepted either in part or in whole, assume full responsibility and costs when substitution affects other work on project. Pay for design or drawing changes required as result of substitution.
- .4 Amounts of all credits arising from approval of substitutions will be determined by *Departmental Representative* and Contract price will be reduced accordingly. No substitutions will be permitted without prior written approval of *Departmental Representative*.
- .5 *Departmental Representative* reserves the right for acceptance or rejection of substitution of materials.

1.7 Construction Equipment and Plant

- .1 On request, prove to the satisfaction of *Departmental Representative* that the construction equipment and plant are adequate to manufacture, transport, place and finish work to quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.
- .2 Maintain construction equipment and plant in good operating order.

1.8 Damaged and Rejected Materials

- .1 Immediately replace, repair or otherwise make good any material damaged, broken or defaced during construction to the satisfaction of *Departmental Representative*.
- .2 Remove rejected materials from site.

END OF SECTION

Part 1 GENERAL

1.1 Record Drawings

- .1 *Departmental Representative* will provide two (2) sets of white prints for record drawing purposes.
- .2 Maintain project record drawings and accurately record deviations from contract documents caused by site conditions and changes ordered by *Departmental Representative*.
- .3 Mark changes in red coloured ink.
- .4 Record following information:
 - .1 Elevations of various elements in relation to Chart Datum.
 - .2 Field changes in dimensions and details.
 - .3 Changes made by Change Order.
- .5 At completion of project and prior to final inspection, neatly transfer notations to second set and submit both sets to *Departmental Representative*.

END OF SECTION

Part 1 GENERAL

1.1 General

- .1 Conduct cleaning and disposal operations to comply with local ordinances and antipollution laws.
- .2 Store volatile waste in covered metal containers and remove from premises at end of each working day.
- .3 Prevent accumulation of waste which creates hazardous conditions.

1.2 Cleaning During Construction

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, other than that caused by Owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
- .3 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .4 Provide on-site containers for collection of waste materials and debris.
- .5 Provide and use marked separate bins for recycling. Refer to Section 01 74 21 – Construction and Demolition Waste Management and Disposal.
- .6 Dispose of waste materials and debris at designated dumping areas on Crown property, off site.
- .7 Store volatile waste in covered metal containers and remove from premises at end of each working day.
- .8 Provide adequate ventilation during use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .9 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.
- .10 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet, newly painted surfaces nor contaminate building systems.

1.3 Final Cleaning

- .1 When Work is Substantially Performed, remove surplus products, tools, construction machinery and equipment not required for performance of remaining Work.
 - .2 Remove waste products and debris other than that caused by others and leave Work clean and suitable for occupancy.
 - .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
 - .4 Remove waste products and debris.
 - .5 Remove waste materials from site at regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site.
 - .6 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
 - .7 Remove dirt and other disfiguration from exterior surfaces.
-

.8 Sweep and wash clean paved areas.

1.4 Waste Management and Disposal

.1 Separate waste materials in accordance with Section 01 74 21 – Construction and Demolition Waste Management and Disposal.

END OF SECTION

Part 1 GENERAL

1.1 Definitions

- .1 Demolition Waste Audit (DWA): Relates to actual waste generated from project.
- .2 Materials Source Separation Program (MSSP): Consists of series of ongoing activities to separate reusable and recyclable waste material into material categories from other types of waste at point of generation.
- .3 Recyclable: Ability of product or material to be recovered at end of its life cycle and re-manufactured into new product for reuse by others.
- .4 Recycle: Process by which waste and recyclable materials are transformed or collected for purpose of being transferred into new products.
- .5 Recycling: Process of sorting, cleaning, treating, and reconstituting solid waste and other discarded materials for purpose of using in altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- .6 Reuse: Repeated use of product in same form but not necessarily for same purpose. Reuse includes:
 - .1 Salvaging reusable materials from remodeling projects before demolition stage for resale, reuse on current project or as storage for use on a future project.
 - .2 Returning reusable items including pallets or unused products to vendors.
- .7 Salvage: Removal of structural and non-structural materials from deconstruction and disassembly projects for the purpose of reuse or recycling.
- .8 Separate Condition: Refers to waste sorted into individual types.
- .9 Source Separation: Acts of keeping different types of waste materials separate beginning from first time they became waste.

1.2 Materials Source Separation Program (MSSP)

- .1 Prepare MSSP and have ready for use prior to project start-up.
- .2 Implement MSSP for waste generated on project in compliance with approved methods and as reviewed by Authorities Having Jurisdiction.
- .3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.
- .5 Locate containers in locations to facilitate deposit of materials without hindering daily operations.
- .6 Locate separated materials in areas which minimize material damage.
- .7 Collect, handle, store on-site and transport off-site, salvaged materials in separate condition and transport to recycling facility.

1.3 Storage, Handling and Protection

- .1 Unless specified otherwise, materials for removal become the Contractor's property.
 - .2 Protect, stockpile, store, and catalogue salvaged items.
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- .3 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to approved local facility.
- .4 Protect structural components not removed for demolition from movement or damage.
- .5 Support affected structures. If safety of facility is endangered, cease operations and immediately notify the *Departmental Representative* and Authorities Having Jurisdiction.
- .6 Protect surface drainage, mechanical and electrical from damage and blockage.
- .7 Separate and store materials produced during dismantling of structures in designated areas.
- .8 Prevent contamination of materials to be salvaged and recycled and handle materials in accordance with requirements for acceptance by designated facilities. On-site source separation is recommended.

1.4 Disposal of Wastes

- .1 Do not bury rubbish or waste materials.
- .2 Do not dispose of any waste into waterways, storm or sanitary sewers.
- .3 Remove materials from deconstruction as deconstruction/disassembly Work progresses.
- .4 Prepare project summary to verify destination and quantities on a material-by-material basis as identified in pre-demolition material audit.

1.5 Use of Site and Facilities

- .1 Execute work with least possible interference or disturbance to normal use of premises.
- .2 Provide security measures which are to be approved by *Departmental Representative*.

1.6 Scheduling

- .1 Coordinate Work with other activities on site to ensure timely and orderly progress of Work.

Part 2 PRODUCTS

NOT APPLICABLE

Part 3 EXECUTION

3.1 Application

- .1 Handle waste materials not reused, salvaged or recycled in accordance with applicable acts, regulations and codes.

3.2 Cleaning

- .1 remove tools and waste materials at completion of Work and leave work area in clean and orderly condition.
- .2 Clean-up work area as work progresses.
- .3 Source separate materials to be reused or recycled into specified sort areas.

3.3 Diversion of Materials

- .1 Separate materials from general waste stream and stockpile in separate piles or containers, as reviewed by *Departmental Representative* and consistent with applicable fire regulations and as follows, at a minimum:
 - .1 Mark containers or stockpile areas.
 - .2 Provide instruction on disposal practices.
- .2 On-site sale or distribution of salvaged materials to third parties will not be permitted.

END OF SECTION

Part 1 GENERAL

1.1 Related Sections

- .1 Section 01 78 00 – Closeout Submittals.

1.2 Description

- .1 Administrative procedures preceding inspection and acceptance of Work by *Departmental Representative*.

1.3 Inspection and Declaration

- .1 Contractor's Inspection: Coordinate and perform, in concert with subcontractors, an inspection and check of all Work. Identify and correct deficiencies, defects, repairs and perform outstanding items as required to complete work in conformance with Contract Documents.
 - .1 Notify *Departmental Representative* in writing when deficiencies from Contractor's inspection have been rectified and that Work is deemed to be complete and ready for *Departmental Representative's* inspection of the completed work.
 - .2 *Departmental Representative's* Inspection: Accompany *Departmental Representative* during all substantial and final inspections of the Work.
 - .1 Address defects, faults and outstanding items of work identified by such inspections.
 - .2 Advise *Departmental Representative* when all deficiencies identified have been rectified.
- .3 Note that *Departmental Representative* will not issue a Certificate of Substantial Performance of the work until such time that Contractor performs following work and turns over the specified documents:
 - .1 The documents required as per Section 01 78 00 – Closeout Submittals.
- .4 Correct all discrepancies before *Departmental Representative* will issue the Certificate of Completion.

END OF SECTION

Part 1 GENERAL

1.1 Related Work

- .1 Refer to other Specification Sections for related information.
- .2 Refer to Section 01 33 00 for Submission and Shop Drawings requirements.

1.2 Submittals

- .1 Make submittals in accordance with Section 01 33 00 – Submissions and Shop Drawings.
- .2 Defective products shall be rejected, regardless of previous inspections. Replace products at Contractor's expense.

1.3 Final Cleaning

- .1 In preparation for acceptance of the project on an interim or final certificate of completion, perform final cleaning.
- .2 Remove grease, dust, dirt, stains and other foreign materials from finished surfaces.

1.4 As-Builts and Samples

- .1 Maintain, in addition to requirements in General Conditions, at site for *Departmental Representative*, at least one record copy of:
 - .1 Contract Drawings;
 - .2 Specifications;
 - .3 Addenda;
 - .4 Change Orders and other modifications to the Contract;
 - .5 Reviewed shop drawings, product data and samples;
 - .6 Field test records;
 - .7 Inspection certificates;
 - .8 Manufacturer's certificates.
- .2 Store record documents and samples in field office apart from documents used for construction. Provide files, racks, and secure storage.
- .3 Label record documents and file in accordance with Section numbers used in this Specification Document. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .4 Maintain record documents in clean, dry, and legible condition. Do not use record documents for construction purposes.
- .5 Keep record documents and samples available for viewing and inspection by *Departmental Representative*.

1.5 Recording Actual Site Conditions

- .1 Record information on set of blue line opaque drawings, and in copy of Project Manual, as provided by the *Departmental Representative*.
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- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 On Contract Drawings and shop drawings mark each item to record actual construction including, at a minimum:
 - .1 Measured depths of pile tips and driving records.
 - .2 Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - .3 Measured locations of internal utilities and appurtenances, referenced to visible and accessible features of construction.
 - .4 Field changes of dimension and detail.
 - .5 Changes made by change orders.
 - .6 Details not on the original Contract Drawings.
 - .7 References to related shop drawings and modifications.
 - .8 Other pertinent information as specified or indicated.
- .5 Specifications: Mark each item to record actual construction including, at a minimum:
 - .1 Manufacturer, trade name and catalogue number of each product actually installed, particularly optional items and substituted items.
 - .2 Changes made by Addenda and Change Orders.
- .6 Other Documents: Maintain manufacturer's certifications and field test records required by individual specification sections.

1.6 Final Survey

- .1 Submit final site survey certificate in accordance with Section 01 71 00 certifying that elevations and locations of completed Work are in conformance, or were not in conformance, with Contract Documents.

END OF SECTION