
Part 1 General

1.1 DESCRIPTION OF WORK

- .1 The work under this contract will be carried out over three consecutive winter seasons with the work being completed by March 31, 2018. The canal closes to marine traffic from December 24th until April 14th each year. All work must be completed by April 10th of each year prior to the commencement marine traffic beginning on April 15th. All scheduling of work to be done with the approval of the Canal Authorities. The work under this contract generally involves:
 - .1 Life cycle restoration to the existing stop logs, lifting boom, and steel sheet pile (SSP) cofferdam: This work shall be carried out during the winter of 2016.
 - .2 Reconstruction of the gear box slabs for the South gates: Reconstruction of the South gear box slabs shall be carried out during the winter of 2017.
 - .3 Life cycle restoration of the strut arm connections at the North and South gates: Restoration of the strut arm connections for both the North and South gates shall be carried out during the winter of 2017.
 - .4 Dewatering of the North and South gates to conduct an inspection of the gates: Dewatering of the North gate shall be carried out during the winter of 2017 and dewatering of the South gate shall be carried out during the winter of 2018.
 - .5 Life cycle restoration of lock gates, North and South: Restoration of the North gate shall be carried out during the winter of 2017 and the South gate shall be carried out during the winter of 2018.
 - .6 Repairs to the North and South ship arrestors and associated components: Repairs to the North and South ship arrestor shall be carried out during the winter of 2018.

1.2 DEWATERING OF THE NORTH AND SOUTH GATES

- .1 This work is to occur over two consecutive winter seasons (2017 and 2018). The work includes but is not limited to:
 - .1 Installation of stop log and SSP cofferdams for dewatering of North gates during the winter of 2017.
 - .2 Dewater work area.
 - .3 Clean gates and floor and walls of dewatered area.
 - .4 Jack gates and remove rollers and trucks for inspection off-site. Inspection to include visual observation described in written report including measurements of truck rollers, roller axles, and thrust washers.
 - .5 Perform life cycle restoration of the North lock gate.
 - .6 Flood lock area and remove stop log and SSP cofferdams.
 - .7 Repeat tasks (1-6) to dewater the South gates during the winter of 2018.

1.3 RESTORATION OF EXISTING STOP LOGS AND SSP COFFERDAM

- .1 Stop Logs
 - .1 Repair of lifting lugs for stop logs.
 - .2 Replace all bolts connecting lifting lugs to stop logs.
 - .3 Free seized guide and reaction rollers on stop logs.
 - .4 Replace damaged rubber seals and wood blocking.
 - .5 Minor structural steel repairs.
 - .6 Clean, sandblast and repaint to original colour.
 - .7 Store all stop logs after use to the satisfaction of the Canal Authorities.
- .2 Lifting Boom
 - .1 The boom has been sandblast during previous inspection and is being stored in an enclosed environment. Perform necessary life cycle repairs to the lifting boom as indicated on Contract Drawings.
 - .2 Store after use to the satisfaction of the Canal Authorities.
- .3 SSP Cofferdam
 - .1 Dry assembly of template on ground and replace corroded members and bolts as indicated on the drawings.
 - .2 Sort sheet piles
 - .3 Clean, sandblast, and repaint to original colour. Key units are to be repainted yellow.
 - .4 Grease grooves of sheet piling with biodegradable grease.
 - .5 Store all components after use to the satisfaction of the Canal Authorities.

1.4 REPAIRS TO THE NORTH AND SOUTH SHIP ARRESTORS

- .1 Repairs to the north and south ship arrestors and associated components at Canso Canal. A satisfactory demonstration of the functioning arrestor system is to be done on completion of work. The work includes but is not limited to:
 - .1 General details:
 - .1 Prior to construction, conduct a detailed accurate survey to locate all existing positions of any mechanical fixtures to be removed. Use this data to accurately reinstall all removed parts.
 - .2 Remove and protect for reuse any associated mechanical, electrical components or any other parts require to be disassembled in order to complete the required work.
 - .3 Removal and disposal of existing reinforced concrete material required to complete the work.

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- .2 Specific details:
 - .1 Removal and off-site disposal of existing steel wire rope at both locations. Reference drawings S4 and S7.
 - .2 Supply and installation of new steel fender wire ropes and rope anchors at each location. Reference drawings S4, S5, and S17.
 - .3 Repairs to Bollard A and Bollard B (North and South). Reference drawing S10.
 - .4 Repairs to Boom Latch Mechanism (North and South). Reference drawing S16.
 - .5 Repairs to Boom Assembly (South). Reference drawings S7, S8, and S9.
 - .6 Repairs to Boom Assembly (North). Reference drawings S7, S8, and S9.
 - .7 Repairs to Bollard C. Reference drawing S13.
 - .8 Repairs to Bollard C Pit. Reference drawing S4 and S5.
 - .9 Repairs to Bascule Frame. Reference drawing S13.
 - .10 Repairs to Bascule Unit. Reference drawing S14.
 - .11 Repairs to Worm Gear Assembly. Reference drawings S4 and S12.
 - .12 Repairs Bascule Unit Recess. Reference drawing S4.
 - .13 Repairs to Machine Room. Reference drawing S11.
 - .14 Canal Wall Concrete Repair. Reference drawing S4 and S5.

1.5 RECONSTRUCTION OF THE GEAR BOX SLAB FOR THE SOUTH GATES.

- .1 Replacement of the permanent concrete slabs under the gearbox at each of the two gates at the south end of the canal as identified on the drawings. The work includes but is not limited to:
 - .1 Prior to construction use a professional land surveyor to conduct a detailed accurate survey to locate the existing position of all mechanical fixtures to be removed. This information is to enable the fixtures to be accurately reinstalled upon completion.
 - .2 Removal and protection for reuse the gearboxes, associated mechanical and electrical components and any other parts require to complete the work.
 - .3 Removal and disposal of existing reinforced concrete curb including that associated with the removable slabs.
 - .4 Removal and disposal permanent reinforced concrete slab.
 - .5 Chipping and removal of concrete and reinforcing on vertical walls to depth of 150 mm into existing walls. Repair and replace existing reinforcing.
 - .6 Chip existing cracks and grout as indicated by Departmental Representative.
 - .7 Clean, sandblast sliding arm track. Replace any nuts deteriorated by rust. Apply coating of protective paint on track.
 - .8 Repair concrete ledge supporting removable slabs to allow proper bearing and fill gaps between precast slab soffits and concrete wall.
 - .9 Install new galvanized steel anchor bars and reinforcing for new vertical wall.

- .10 Supply and install prefabricated galvanized steel I-beams and associated galvanized steel components as part of new slab to support gearbox on slab.
- .11 Form, install reinforcing and pour vertical walls and new slab and curb work
- .12 Reinstall gear box, associated mechanical components and parts replacing all attaching bolts and nuts.
- .13 Reconnect and restore electrical power to motor and any control panels.
- .14 Remove existing railing and reinstall using new galvanized fasteners at both locations at South end of canal.
- .15 Demonstrate under the Departmental Representative and Canso Canal Authority's direction the acceptable operation of each of the completed systems.
- .16 Provide heating protection as required.
- .17 Complete all other related work and incidentals associated with the above work and the work indicated on the drawings.
- .18 All required equipment removal and reinstallation shall be performed by a qualified and experienced machinist. Contractor shall submit the qualifications of the machinist to the Departmental Representative 2 weeks prior to commencing the work.

1.6 RESTORATION OF STRUT ARM CONNECTIONS

- .1 Life cycle restoration of the strut arm connections at the North and South gates. Reference drawing S23. The work includes but is not limited to:
 - .1 Removal of strut arms.
 - .2 Refurbish strut-arm connection to gate.
 - .3 Sandblast and paint strut arms. Refer to Section 05 50 50 for specifications of coating.
 - .4 Reinstall strut arms.
 - .5 All required equipment removal and reinstallation shall be performed by a qualified and experienced machinist. Contractor shall submit the qualifications of the machinist to the Departmental Representative prior to commencing the work.
 - .6 Demonstrate satisfactory functioning of gate operating equipment to Canso Canal Authority after reinstallation of equipment.

1.7 LIFE CYCLE RESTORATION OF LOCK GATES

- .1 Life cycle restoration of the lock gates at both the North and South ends of the canal. (Refer to Appendix A for record drawings of the gates) The work includes but is not limited to:
 - .1 Sandblasting and recoating of gate frames above high water mark and below the galvanized walkway framework. Refer to Section 05 50 50 for specifications of coating.
 - .2 Replacement of perforated baffle plate at Gate 2 (South-East Gate). Refer to detail A of reference drawing 71 – *Construction of Lock Gates – Plans and Sections*. The work includes but is not limited to:

- .1 Cut and remove existing steel around repair area.
- .2 Clean and prepare existing steel around repair area for welding of new patch plate.
- .3 Supply and install new 1500 mm x 1500 mm x 12 mm steel plate.

1.8 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings.
 - .5 List of Outstanding Shop Drawings.
 - .6 Change Orders.
 - .7 Other Modifications to Contract.
 - .8 Field Test Reports.
 - .9 Contract information for all relevant personnel to the project.
 - .10 Copy of Approved Work Schedule. Schedule to be updated on a monthly basis.
 - .11 Health and Safety Plan and Other Safety Related Documents.
 - .12 Copy of tool box meeting minutes.
 - .13 Manufacturer's installation and application instructions.
 - .14 Other documents as specified.

1.9 SITE CONDITIONS

- .1 Records of existing structures and geotechnical reports may be available for inspection at the offices of Departmental Representative and Government Services Canada, 1713 Bedford Row, Halifax, N.S. This material is not necessarily up to date and is for information purposes only. It should be complemented by site visits and consultation with appropriate expertise.

1.10 WORK SCHEDULE AND COMPLETION DATES

- .1 Prepare and submit to the Departmental Representative within 5 working days of notification of Contract award, one copy of the construction schedule showing the dates for commencement and completion of each major activity of the work, including the work of subcontractors; dates for submissions, review and return of shop drawings, etc.; the dates of Substantial and Final Completion; and intended man hours of labour and equipment for each major item 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 Construction Schedule at all times. If, for any reason, the Construction Schedule is not followed, immediately notify the Departmental Representative of the change 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.

1.11 MEASUREMENT RESPONSIBILITIES

- .1 Notify Departmental Representative sufficiently in advance of operations to permit required measurements for payment purposes.

1.12 CONTRACTOR'S USE OF SITE

- .1 Co-operate with users of existing facilities.
- .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.

1.13 CODES AND STANDARDS

- .1 Perform work in accordance with National Building Code of Canada (NBC) 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 Nova Scotia. In the event of conflict between any provisions of above authorities the most stringent provision will apply.

1.14 PROJECT MEETINGS

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording and distributing minutes.

1.15 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 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.

1.16 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 and vehicular traffic.
- .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.

1.17 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.

1.18 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 "C".

1.19 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.

1.20 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.

1.21 PAYMENT

- .1 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.

1.22 SITE EXAMINATION

- .1 All parties tendering may 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.

1.23 MAINTENANCE OF SHIPPING

- .1 Liaise with the Canso Canal officials to coordinate activities such that any interference is minimized.

1.24 COOPERATION & ASSISTANCE TO DEPARTMENTAL REPRESENTATIVE

- .1 Co-operate with Departmental Representative on inspection of work.
- .2 Provide assistance when requested.

1.25 DATUM

- .1 The 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.

1.26 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.

1.27 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.

1.28 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.

1.29 PROTECTION AND REPAIR

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

1.30 LOCATION OF EQUIPMENT AND FIXTURES

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

1.31 INSPECTION AND TESTING

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

1.32 DISPOSAL OF DEBRIS

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

1.33 EXISTING SOILS AND CONCRETE CONDITIONS

- .1 Any information pertaining to soils and concrete condition that are furnished by the Departmental Representative are as a matter of general information only and are not to be interpreted as descriptive of conditions at locations.

END OF SECTION

Part 1 General

1.1 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.

1.2 MEASUREMENT FOR PAYMENT

.1 Dewatering of the North and South Gates.

.1 Install Stop Log Cofferdam.

- .1 Unit of Measurement:
 - .1 Lump Sum (LS)
- .2 This item includes:
 - .1 All labour, material and equipment associated with the installation, removal, and cleaning of the stop log cofferdam.

.2 Install Steel Sheet Piling (SSP) Cofferdam.

- .1 Unit of Measurement:
 - .1 Lump Sum (LS)
- .2 This item includes:
 - .1 All labour, materials and equipment associated with the installation, maintenance, removal, and cleaning of the steel sheet piling cofferdam.

.3 Dewatering Work Area.

- .1 Unit of Measurement:
 - .1 Lump Sum (LS)
- .2 This item includes:
 - .1 All labour, materials, power and equipment associated with the dewatering and cleaning the work area.

.4 Inspection of gate rollers and trucks.

- .1 Unit of Measurement:
 - .1 Lump Sum (LS)
- .2 This item includes:
 - .1 All labour, materials and equipment associated with the jacking of gates to remove rollers and trucks for inspection off-site.

.2 Life cycle restoration of existing stop logs and SSP Cofferdam.

.1 Life cycle repairs to stop logs and lifting boom.

.1 Unit of Measurement:

.1 Lump Sum (LS)

.2 This item includes:

.1 All labour, materials and equipment associated with the immediate repairs to existing stop logs.

.2 Life cycle repairs to Steel Sheet Piling (SSP) Cofferdam

.1 Unit of Measurement:

.1 Lump Sum (LS)

.2 This item includes:

.1 All labour, materials and equipment associated with the immediate repairs to existing SSP cofferdam.

.3 Repairs of North and South Ship Arrestors.

.1 Unit of Measurement:

.1 Lump Sum (LS)

.2 This item includes:

.1 All labour, materials and equipment associated with the repairs of both the North and South Ship Arrestors.

.4 Reconstruction of the gear box slabs for the South Gates.

.1 Unit of Measurement:

.1 Lump Sum (LS)

.2 This item includes:

.1 All labour, materials and equipment associated with the reconstruction of the gear box slabs at the South Gates.

.5 Life cycle restoration of the strut arm connections at the North and South Gates.

.1 Unit of Measurement:

.1 Lump Sum (LS)

.2 This item includes:

.1 All labour, materials and equipment associated with the life cycle restoration of the strut arm connections at the North and South Gates.

.6 Repair of perforated baffle plate

.1 Unit of Measurement:

.1 Lump Sum (LS)

.2 This item includes:

.1 All labour, materials and equipment associated with the repair of the perforated baffle plate.

.7 Painting of Lock Gates

.1 Unit of Measurement:

.1 Lump Sum (LS)

.2 This item includes:

.1 All labour, materials and equipment associated with the application of new coating to gate frames above high water mark and below galvanized walkway framework.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Refer to Technical Specifications which reference “SUBMITTALS” under Part – General of each section

1.2 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submit promptly and in orderly sequence to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Do not proceed with Work affected by submittal until review is complete.
- .3 Present shop drawings, product data, samples and mock-ups in SI Metric units.
- .4 Where items or information is not produced in SI Metric units converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Verify field measurements and affected adjacent Work are co-ordinated.
- .8 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .10 Keep one reviewed copy of each submission on site.

1.3 SHOP DRAWINGS AND PRODUCT DATA

- .1 In accordance with the General Conditions and as specified herein.
- .2 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .3 Submit drawings stamped and signed by professional engineer registered or licensed in Nova Scotia, Canada.
- .4 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment,

indicate that such items have been co-ordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

- .5 Allow ten (10) business days for Departmental Representative's review of each submission.
- .6 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .7 Make changes in shop drawings as Departmental Representative may require, consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .8 Accompany submissions with transmittal letter containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .9 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.

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- .10 After Departmental Representative's review, distribute copies.
 - .11 Submit six (6) prints of shop drawings for each requirement requested in specification Sections and as Departmental Representative may reasonably request.
 - .12 Submit six (6) copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
 - .13 Submit six (6) copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or system identical to material, product or system to be provided has been tested in accord with specified requirements.
 - .2 Testing must have been within three (3) years of date of contract award for project.
 - .14 Submit six (6) copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
 - .2 Certificates must be dated after award of project contract complete with project name.
 - .15 Submit six (6) copies of manufacturer's instructions for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
 - .16 Submit six (6) copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .17 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
 - .18 Submit six (6) copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
 - .19 Supplement standard information to provide details applicable to project.
 - .20 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
 - .21 The review of shop drawings by Departmental Representative is for sole purpose of ascertaining conformance with general concept.

- .1 This review shall not mean that Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of construction and Contract Documents.
- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

1.4 SAMPLES

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

1.5 MOCK-UPS

- .1 Erect mock-ups in accordance with 01 45 00 - Quality Control.

END OF SECTION

Part 1 GENERAL

1.1 RELATED WORK

- .1 Section 01 33 00 – Submittal Procedures
- .2 Section 01 35 29 – Health and Safety Requirements

1.2 REFERENCES

- .1 FCC No. 301-June 1982 Standard for Construction Operations.
- .2 FCC No. 302-June 1982 Standard for Welding and Cutting.

1.3 DEFINITIONS

- .1 Hot Work defined as:
 - .1 Welding work
 - .2 Cutting of materials by use of torch or other open flame devices
 - .3 Grinding with equipment which produces sparks.

1.4 FIRE SAFETY AND HOT WORK REQUIREMENT

- .1 Implement and follow fire safety measures during Work. Comply with following:
 - .1 National Fire Code, 1995
 - .2 Fire Protection Standards FCC 301, Standard for Construction Operations and FCC 302, Standard for Welding and Cutting as issued by the Fire Protection Services of Human Resources Development Canada.
 - .3 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in section 01 35 30.
- .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, Department Representative will advise on the course of action to be followed.
- .3 FCC standards, noted above, may be viewed at the Regional Fire Protection Services' office (previously known as the Fire Commissioner of Canada) located at 99 Wyse Road, 8th floor, Dartmouth, NS; telephone: (902)-426-6053.

1.5 FIRE PROTECTION AND ALARM SYSTEMS

- .1 Fire protection and alarm systems shall not be:
 - .1 Obstructed.
 - .2 Shut-off, unless approved by Department 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, building owner and tenants, 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.

1.6 DOCUMENTS ON SITE

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

END OF SECTION

Part 1 GENERAL

1.1 REFERENCES

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations
- .2 Province of Nova Scotia
 - .1 Occupational Health and Safety Act, S.N.S. - Updated 2013.
- .3 Definitions
 - .1 COSH: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.
 - .2 Competent Person: means a person who is:
 - .1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, 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.
 - .3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.
 - .4 PPE: personal protective equipment.
 - .5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.

1.2 SUBMITTALS

- .1 Submit to Departmental Representative copies of the following documents, including updates issued:
 - .1 Site Specific Health and Safety Plan.
 - .2 Compliance certificates and other permits obtained.
 - .3 Reports or directions issued by Federal, Provincial inspectors or other Authority having jurisdiction.
 - .4 Formal Safety Inspection Reports.
 - .5 Accident or Incident Reports.
 - .6 MSDS data sheets.
 - .7 Name of person(s) designated to perform full time health and safety site supervision.

- .2 Medical Surveillance: Where prescribed by federal or provincial legislation and regulations, and upon request by Departmental Representative, obtain and submit certification of medical surveillance for site personnel prior to commencement of work.
- .3 Submit other data, information and documentation upon request as stipulated elsewhere in this section.
- .4 Submit above documents in accordance with the submittal - general requirements specified in Section 01 33 00.

1.3 COMPLIANCE REQUIREMENTS

- .1 Comply with the Occupational Health and Safety Act for the Province of Nova Scotia, and the Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, and the Canada Occupational Safety and Health Regulations made under Part II of the Canada Labour Code.
- .3 Observe and enforce construction safety measures required by:
 - .1 2005 National Building Code of Canada, Part 8;
 - .2 Provincial Worker's Compensation Board;
 - .3 Municipal statutes and ordinances.
- .4 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.
- .5 A copy of the Canada Labour Code Part II may be obtained by contacting:

Canadian Government Publishing
Public Works & Government Services Canada
Ottawa, Ontario, K1A 0S9
Tel: (819) 956-4800 (1-800-635-7943)
Publication No. L31-85/2000 E or F)
- .6 Maintain Workers Compensation Coverage for duration of Contract. Submit Letter of Good Standing to Departmental Representative upon request.

1.4 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property 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.

1.5 SITE CONTROL AND ACCESS

- .1 Control work site and entry points. Grant and allow entry to only workers and other persons so authorized. Immediately stop non-authorized persons from circulating within construction areas and remove from site.
- .2 Implement procedures for granting permission to enter onto work site to all persons who require access. Procedures to include the provision of a site safety orientation session.
- .3 Delineate and isolate construction areas from other areas of site by use of appropriate means. Erect barricades, fences, hoarding and temporary lighting as required.
- .4 Erect signage at entry points and at other strategic locations around site, clearly identifying construction area(s) as being "off-limits" to non-authorized persons. Signage must be professionally made in both official languages or by use of well understood graphic symbols.
- .5 Secure site at night time as deemed necessary to protect site against entry.
- .6 Ensure persons granted access are fitted and wear appropriate personal protective equipment (PPE). Be responsible for the provision of such PPE to persons who require access to conduct work or perform inspections.

1.6 PROTECTION

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

1.7 FILING OF NOTICE

- .1 File Notice of Project and other Notices with Provincial authorities prior to commencement of Work.
- .2 Upon request, Departmental Representative will provide name and mailing address of provincial Departmental to whom the Notice of Project must be sent.

1.8 PERMITS

- .1 Obtain building permit related to project prior to commencement of Work.
- .2 Obtain permits, licenses and compliance certificates, at appropriate times and frequency as stipulated by authorities having jurisdiction.
- .3 Where particular permit or compliance certificate cannot be obtained at the required stage of work, notify Departmental Representative in writing and obtain Departmental Representative's approval to proceed prior to carrying out that portion of work.

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- .4 Post all permits on site. Submit copies to Departmental Representative.

1.9 HAZARD ASSESSMENTS

- .1 Implement and carry out a health and safety hazard assessment program as part of the work. Program to include:
 - .1 Initial hazard assessment carried out immediately upon notification of contract award and prior to commencement of work.
 - .2 On-going hazard assessments performed during the progress of work identifying new or potential health risks and safety hazards not previously known. As a minimum hazard assessments shall be carried out when:
 - .1 New sub trade work, new subcontractor(s) or new workers arrive at the site to commence another portion of the work.
 - .2 The scope of work has been changed by Change Order.
 - .3 Potential hazard or weakness in current health and safety practices are identified by Departmental Representative or by an authorized safety representative.
 - .3 Hazard assessments to be project and site specific, based on review of contract documents, site and weather conditions.
 - .4 Each hazard assessment to be made in writing. Keep copies of all assessments on site for duration of work. Upon request, make available to Departmental Representative for inspection.

1.10 PROJECT/SITE CONDITIONS

- .1 The following are known hazardous substances, contaminated materials or contaminated conditions at site which shall be considered as health or environmental hazards and be properly managed should they be encountered as part of the work:
 - .1 Oil and grease residue in area of gate recess.
- .2 The following are known or potential project related safety hazards at site:
 - .1 Existing overhead power line;
 - .2 Water hazard close proximity.
- .3 Obtain from Departmental Representative, copy of MSDS Data sheets of existing hazardous materials stored on site or being used by Facility and Tenant personnel in the course of their operations.
- .4 Above lists shall not be construed as being complete and inclusive of safety and health hazards encountered as a result of Contractor's operations during the course of work. Include above items into the hazard assessment program specified herein.

1.11 SAFETY MEETINGS

- .1 Prior to commencement of work attend health and safety meeting conducted by Departmental Representative. Have Contractor's Site Superintendent and/or Designated Health and Safety Site Coordinator in attendance. Departmental Representative will advise of time and location.

- .2 Provide site safety orientation session to all workers and other authorized persons prior to granting them access to work site. Brief persons on site conditions and on the minimum site safety rules in force at site.
- .3 Conduct site specific occupational health and safety meetings during the entire work as follows:
 - .1 Formal meetings on a minimum monthly basis.
 - .2 Informal tool box meetings on a regular basis from a predetermined schedule.
- .4 Keep workers informed of anticipated hazards, on safety practices and procedures to be followed and of other pertinent safety information related to:
 - .1 Progress of Work.
 - .2 New sub-trades arriving on site.
 - .3 Changes in site and project conditions.
- .5 Record and post minutes of meetings. Make copies available to Departmental Representative upon request.

1.12 HEALTH AND SAFETY PLAN

- .1 Develop written site-specific Project Health and Safety Plan, based on hazard assessments, prior to commencement of work. Submit plan to Departmental Representative within 14 calendar days of Contract Award date.
- .2 Health and Safety Plan shall contain the following three (3) parts:
 - .1 Part 1: List of individual health risks and safety hazards identified by hazard assessment(s).
 - .2 Part 2: List of specific measures to control or mitigate each hazard and risk identified in part one of Plan. Describe the Departmental Representativeing controls, personal protective equipment and safe work practises to be implemented and followed when performing work related to each identified hazard or risk.
 - .3 Part 3: Emergency Measures and Communications Procedures as follows:
 - .1 Emergency Measures: on-site operating procedures, evacuation measures and emergency response to be implemented in the occurrence of an accident or incident. Procedures to be specific and relevant to identified hazards. Measures to complement and be integrated with the Facility and Tenant(s) Emergency Response Plans in place at site. Obtain information on existing emergency and evacuation plans from Departmental Representative and incorporate appropriate data.
 - .2 Communication Procedures:
 - .1 List of names and telephone numbers of designated official(s), to be contacted should an incident or emergency situation occur, including the following:
 - .1 General Contractor and all Subcontractors.

- .2 Federal and Provincial Departments and local emergency resources organizations, as applicable to the hazards identified and type of accident or incident which might occur, in accordance with applicable laws and regulations.
- .3 Officials from PWGSC, Facility Management and Tenant Departments, located in vicinity, where work is carried out. Departmental Representative will provide list of names to be included.
- .2 Procedures implemented at site to communicate and share information between workers, subcontractors, and General Contractor on work activities, and in particular those which might endanger workers and Facility employees.
- .3 List of critical construction activities to be communicated with the Facility Manager and designated tenant representative(s) which could affect facility and tenant operations, or pose a risk to the health and safety of their employees and to the general public. Develop list in consultation with the Departmental Representative.
- .3 Prepare Health and Safety Plan in a three column format, addressing the three parts specified above, as follows:

<u>Column 1</u>	<u>Column 2</u>	<u>Column 3</u>
Identified Hazard	Control Measures Implemented	Emergency Measures & Communications Procedures

- .4 Develop Health and Safety Plan in collaboration with all subcontractors. Address all work and activities of subcontractors as they arrive on site. Immediately update Plan and submit to Departmental Representative.
- .5 Implement, maintain and enforce compliance with requirements of the Health and Safety Plan until final completion of work and demobilization from site.
- .6 As work progresses, review and update Plan addressing additional health risks and safety hazards identified by on-going hazard assessments.
- .7 Submit revised versions of Plan to Departmental Representative.
- .8 Post a typed written copy, including all updates, of the Health and Safety Plan in a common visible location at work site.
- .9 Submission of the Health and Safety Plan, and updates, to the Departmental Representative is for review and information purposes only. It's submission shall not be construed to imply approval by Departmental Representative, be interpreted as a warranty of being complete, accurate and legislative compliant and shall not relieve Contractor of his legal obligations for the provision Health and Safety on the construction project.

1.13 SAFETY SUPERVISION AND INSPECTIONS

- .1 Designate competent person or persons to be present on site at all times during work, responsible for supervising health and safety and conducting safety inspections of work site.
- .2 Assign responsibility, obligation and authority to such designated person(s) to stop and start work as deemed necessary for reasons of health and safety.
- .3 Provide names of designated individuals to Departmental Representative.
- .4 Cooperate with Health and Safety Site Coordinator responsible for the entire site or facility, should one be designated by Departmental Representative.
- .5 Conduct regularly scheduled safety inspections of work site as follows:
 - .1 Informal Inspections: carry out on a minimum bi-weekly basis. Note deficiencies and remedial action taken in a log book or diary.
 - .2 Formal Inspections: carry out on a minimum monthly basis. Use standardized safety checklist forms. Prepare written report for each formal inspection. Document deficiencies, remedial action needed and assign responsibility for rectification to appropriate subcontractor or worker.
- .6 Distribute monthly reports to subcontractors for their pursuance. Follow-up and ensure appropriate action and corrective measures are taken.
- .7 Maintain safety inspection documentation on site. Submit copies of formal inspection reports to Departmental Representative.
- .8 All persons in Contractor's employ responsible for health and safety requirements specified in the Contract Documents to be competent in Occupational Health and Construction Safety as defined in the Provincial Occupational Health And Safety Act.

1.14 TRAINING

- .1 Ensure that workers, subcontractors and other authorized persons granted access to site are trained and have been fully instructed, by a competent instructor, on:
 - .1 Safe operation of tools and equipment.
 - .2 Proper wearing and use of personal protective equipment (PPE) as applicable to the purpose and activities to be conducted on site.
 - .3 Safe work practices and procedures to be followed during the performance of their given work tasks or function on site.
 - .4 Site Conditions and minimum site safety rules provided through site orientation sessions.
- .2 Make training records readily available for review by Departmental Representative upon request.

1.15 MINIMUM SITE SAFETY RULES

- .1 Notwithstanding the requirement to abide by federal and provincial health and safety regulations, the following safety rules shall be considered minimum requirements at the work site and obeyed by all persons granted access:

- .1 Wear personal protective equipment (PPE) appropriate to function and task on site; the minimum requirements being hard hat, safety footwear and eye protection.
- .2 Immediately report unsafe activities, conditions, near-miss accidents, injuries and damages.
- .3 Maintain site in tidy condition.
- .4 Obey warning signs and safety tags.

1.16 CORRECTION OF NON-COMPLIANCE

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

1.17 INCIDENT REPORTING

- .1 Investigate and report incidents and accidents as outlined in Provincial Occupational Safety and Health Act and Regulations.
- .2 Investigate and immediately report to Departmental Representative incidents and accidents which results, or has the potential of resulting in:
 - .1 Injuries requiring medical aid,
 - .2 Property damage in excess of \$5000.00,
 - .3 Interruption to building operations with potential loss to owner or client in excess of \$5000.00,
 - .4 Required notification to Workers Compensation Board or other regulatory agencies as stipulated by applicable regulations.
- .3 The term "medical aid" as used in above clause shall have the same meaning as defined in the Canadian Dictionary of Safety Terms - 1987 issue, from the Canadian Society of Safety Departmental Representatives (C.S.S.E) as follows:
 - .1 Medical Aid: 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.

1.18 TOOLS AND EQUIPEMENT SAFETY

- .1 Implement and follow a scheduled tool and equipment inspection/maintenance program at work site. Regularly check tools, equipment and machinery for safe operation and perform maintenance at pre-established time and frequency intervals as recommended by manufacturer. Include subcontractors equipment as part of the inspection process.
- .2 Use standardized checklists to ensure established safety checks are stringently followed.
- .3 Immediately tag and remove items found faulty or defective off site.

- .4 Maintain written documentation on each inspection. Make available to Departmental Representative upon request

1.19 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS).
- .2 Keep MSDS data sheets on site. Provide copies of all data sheets to Departmental Representative upon receipt of materials on site.
- .3 Post all MSDS data sheets on site, in a common area, visible to workers.

1.20 POWDER ACTUATED DEVICES

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

1.21 CONFINED SPACES

- .1 Carry out work in confined spaces in compliance with:
 - .1 Provincial Occupational Safety and Health Regulations and;
 - .2 Part XI of the Regulations Respecting Occupational Safety and Health made under Part II of the Canada Labour Code.
- .2 Include hazard assessment of confined space(s) as part of the hazard assessment program.
- .3 Provide and maintain all equipment as required for the safety and emergency evacuation of persons entering and/or perform work in confined space.
- .4 Provide training to all persons entering and working in confined spaces.
- .5 Safety for Inspectors:
 - .1 Upon Departmental Representative's request, provide protective equipment and training to Departmental Representative or to other person designated by Departmental Representative for the purpose of entering the confined space(s) to conduct inspections.
 - .2 Training to be specialized instructions (beyond basic confined space entry training) to suit the specific nature and type of confined space conditions at site.
 - .3 Be responsible for the efficacy of the equipment and for the safety of such persons during their entry and occupancy in the confined space.
- .6 Develop and use "Entry Permits" for each and every entry into the confined space in accordance with Section 11.3 of Part XI of the Regulations Respecting Occupational Safety and Health made under Part II of the Canada Labour Code. Keep all entry permits on site for duration of work. Make permits available for inspection when requested by Departmental Representative.

1.22 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.

1.23 POSTING OF DOCUMENTS

- .1 Post documents indicated herein and as required by Authority having jurisdiction.

END OF SECTION

Part 1 General

1.1 DEFINITIONS

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

1.2 FIRES

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

1.3 DISPOSAL OF WASTES

- .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

1.4 DRAINAGE

- .1 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .2 Control disposal or run-off of water containing suspended materials or other harmful substances in accordance with local authority requirements.

1.5 WORK ADJACENT TO WATERWAYS

- .1 Do not dump excavated fill, waste material or debris in waterways.
- .2 **Contain all debris and leachates (films on water surface) within the area of the work by using containment facilities such as floating booms or screens.**

1.6 POLLUTION CONTROL

- .1 Control emissions from equipment, materials and plant to local authorities emission requirements.
- .2 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .3 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.7 ENVIRONMENTAL PROTECTION PLAN

- .1 Provide all material and labour required to follow the measures outlined in the environmental protection plan. This is provided in a separate document. The

environmental protection plan is to be followed throughout the construction of the project and forms a part of the contract not withstanding other environmental requirements specified in this specification.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

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

1.2 APPOINTMENT AND PAYMENT

- .1 Departmental Representative will appoint and pay for services of testing laboratory except for the following:
 - .1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
 - .2 Inspection and testing performed exclusively for Contractor's convenience.
 - .3 Testing, adjustment and balancing of conveying systems, mechanical and electrical equipment and systems.
 - .4 Mill tests and certificates of compliance.
 - .5 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
- .2 Where tests or inspections by designated testing laboratory reveal work not in accordance with contract requirements, Contractor shall pay costs for additional tests or inspections as Departmental Representative may require to verify acceptability of corrected work.

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 and internet in the office.
- .2 Keep one up-to-date copy of contract documents, bulletins and other materials as specified under Section 01 11 00.

1.3 DEPARTMENTAL REPRESENTATIVE'S SITE OFFICE

- .1 Provide temporary office for sole use of Departmental Representative, complete with heat and lights. Insulated office required during October to May. Locate on or adjacent to site.
- .2 Inside dimensions minimum 5 m long x 3 m wide x 2.4 m high, with floor 0.3 m above grade, complete with 4-50% opening windows and one lockable door.
- .3 Arrange and pay for telephone, internet, and fax machine installation and service in Departmental Representative's office for the Departmental Representative's exclusive use. Long distance calls placed on this phone by the Departmental Representative will be paid for by Departmental Representative.
- .4 Washroom facilities not required in the office. Provide outside sanitary facilities to approval.
- .5 Equip office with six chairs, flat 1200 X 2400 X 25 table with writing surface and 4 drawer lockable filing cabinet.
- .6 Maintain in clean condition.

1.4 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.

1.5 SANITARY FACILITIES

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

1.6 PARKING

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

1.7 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.

1.8 WATER SUPPLY

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

1.9 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.

1.10 SECURITY

- .1 Contractor to make his own arrangements for security of his equipment, materials, damages resulting from fire and theft. Security shall comply with Canal Authority.

1.11 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.

1.12 REMOVAL OF TEMPORARY FACILITIES

- .1 Remove temporary facilities from site when directed by Departmental Representative.
- .2 When project is closed 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 GENERAL REQUIREMENTS

- .1 Use new material and equipment unless otherwise specified.
- .2 Submit following information for any or all materials and products proposed for supply within 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 MANUFACTURERS 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 manufacturer's 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 CSA-G164 Latest Edition 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.

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 Owner 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 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 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 create hazardous conditions.

1.2 PROJECT CLEANLINESS

- .1 Maintain the work, at least on a daily basis free from accumulations of waste material and debris.
- .2 Provide on-site containers for collection of waste materials, and debris.
- .3 Remove waste materials, and debris from site.
- .4 Schedule cleaning operations so that resulting dust, debris and other contaminants will not fall on wet concrete or newly painted surfaces.
- .5 The contractor shall dispose of all spent blasting abrasives, removed paint, and all other debris material from surface cleaning, surface preparation as well as over spray from the new coating system in accordance with all current federal, provincial and municipal regulations. It is the contractor responsibility to be familiar with all the application of all applicable environment laws and regulations and to obtain all the necessary permits and approvals.

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.

END OF SECTION