

PART 1. GENERAL

1.1 DESCRIPTION OF WORK

- .1 In general, the work includes, but is not limited to:
 - .1 The demolition and disposal of three (3) above ground fuel storage tanks, one (1) oil-water separator, concrete dyke walls and slabs, and related piping and materials of building A5, as shown in the project Drawings.
 - .2 The installation of three (3) new above ground fuel storage tanks, related equipment, storm water piping and associated components, associated concrete work, and materials for building A5, as shown on the project Drawings and described in the specifications to form a complete working system.
 - .3 The installation of new sensors, monitoring, and alarm devices for building A5 as shown on the project Drawings and described in the Specifications. Connection of said devices to the existing Building Management System, including programming and graphics.
 - .4 The installation of a new controller for said devices with provisions for future connection to the existing Building Management System.
 - .5 Provisions for a temporary fuel tank installation allowing continuous use of the boiler plant during construction.
 - .6 Related site grading and asphalt placement as shown on the Drawings described in the specifications to form a complete working system.
 - .7 The site of work is at Springhill institution 330 McGee Street, Springhill, NS.

1.2 CONTRACTOR QUALIFICATIONS

- .1 Contractors to provide prior to award:
 - .1 Safety Certification with the NSCSA
 - .2 Qualified and accredited for petroleum equipment installation

1.3 FAMILIARIZATION WITH SITE

- .1 Before submitting a bid, it is the responsibility of bidders to visit the site to review the nature and extent of the work.
- .2 Bidders who are unable to attend must obtain site visit authorization form from Departmental Representative prior to visiting the site.

1.4 PRODUCT/SYSTEM OPTIONS

- .1 Except as the drawings and specifications may be modified by Addenda, the successful Contractor will be held to furnish under his lump sum bid all work as specified. Alternates will be allowed only by procedures described herein. All materials and articles of any kind necessary for this work are subject to the approval of the Departmental Representative and his judgment and decision will be final. The submission of a bid will be taken as evidence of the bidder's compliance with these instructions.
- .2 Where bid documents stipulate a particular product, alternatives will NOT be considered by the Departmental Representative during the bidding period.
- .3 After bid closing when submitting for approval of alternates/equals the onus will be on the bidder to judge the acceptability of proposed alternates. The final decision on the acceptability of alternates/equals will be the Departmental Representative's.
- .4 After contract award, the successful Contractor may submit a formal request for approval of alternates/equals, with appropriate credit. Include with each request all basic data and characteristics of the proposed item, so that a direct comparison can be readily made. It is the responsibility of the bidder to submit complete description and technical information so that the Departmental Representative can make a proper appraisal. Approvals will be issued in writing.
- .5 The Departmental Representative will be the sole judge regarding acceptability of alternates.

1.5 CODES AND STANDARDS

- .1 Perform work in accordance with the latest edition of the National Building Code of Canada adopted by the local authority having jurisdiction and with other codes of

provincial or local application, including amendments up to project tender closing date. In the case of conflict or discrepancy, the more stringent requirement shall apply.

- .2 In addition to above, perform work in accordance with the following codes, regulations, guidelines:

.1 Canadian Environmental Protection Act, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations, (2008 or latest). (CEPA)

.2 Canadian Council of Ministers of the Environment, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products, (2003 or latest). (CCME)

.3 Nova Scotia Environment and Labour, Nova Scotia Standards for Construction and Installation for Petroleum Storage Tank Systems (1997 with 2005 amendments, or latest)

.4 National Fire Code of Canada, (2010 or latest). (NFC)

.5 Canadian Electrical Code, latest edition(CEC)

- .3 Materials and workmanship to meet or exceed the requirements of specified standards, codes and referenced documents.

1.6 SETTING OUT WORK

- .1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide devices needed to lay out and construct work.

1.7 INTERPRETATION OF DOCUMENTS

- .1 Supplementary to the General Conditions of the Contract, the Division 01 specification sections take precedence over the technical specification.

1.8 TERM DEPARTMENTAL REPRESENTATIVE

- .1 Departmental Representative where used in Specifications and project Drawings shall mean the person or entity representing the interest of PWGSC for the purpose of the execution of this work.

1.9 COST BREAKDOWN

- .1 Before submitting first progress claim, the successful bidder shall submit a cost breakdown of the Contract price in detail and aggregate contract price. Required forms will be provided for application of progress payment.
- .2 The successful bidder shall provide a list of items of work numerically following the same division and section system of the specification and thereafter subdivide into major work components and building systems.
- .3 The cost breakdown will be used as basis for progress payment.

1.10 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each of the following:
 - .1 Project Drawings
 - .2 Specifications
 - .3 Shop drawings
 - .4 Addenda
 - .5 Change Orders
 - .6 Modifications to Contract
 - .7 Copy of accepted Work Schedule
 - .8 Health and Safety Plan and other safety related documents
 - .9 Other documents as stipulated elsewhere in the Contract Documents.
 - .10 Field test reports

1.11 PERMITS

- .1 In accordance with the General Conditions of the contract, obtain and pay for building permit, compliance certificates, licenses and other permits and permissions as required by municipal, provincial and federal authorities.
- .2 Provide appropriate notification of project to provincial and other inspection authorities having jurisdiction.
- .3 Submit to Departmental Representative a copy of application forms and approval documents received from above referenced authorities.
- .4 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of the work.

1.12 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to Facility operations, occupants, public and normal use of premises. Arrange with Departmental Representative to facilitate execution of the work.
- .2 Provide barricades, barriers and warning signs around work areas and adjacent to areas in use by Facility occupants.
 - .1 Signage to be professionally made with bilingual message or use internationally recognized graphic symbols.
- .3 Separate work areas from other areas of the building and of the site. Provide dust barriers and fences as specified in section 01 50 00.
- .4 Facility access corridors and emergency exits:
 - .1 Ensure that building corridors, stairs, entrances and fire exits are left unobstructed and kept free of construction materials, tools, debris, dust and dirt at all times for safe passage by building users.
 - .2 Fire escape routes must be accessible and maintained at all times. Do not under any circumstances block fire exit doors and emergency escape routes.
- .5 Abide by security requirements and procedures specified in Section 01 35 59.
- .6 Where building security has been reduced by the work of the Contract, provide temporary means to maintain security in coordination with Departmental Representative.

1.13 ROUGHING-IN

- .1 Be responsible for obtaining manufacturer's literature and for correct roughing-in and hook-up of equipment, fixtures and appliances.

1.14 CUTTING, FITTING AND PATCHING

- .1 Ensure that cutting and patching, required by trades and subtrades, is included in total bid price submitted for the work.
- .2 Execute cutting, fitting and patching required to make work fit properly.

- .3 Where new work connects with existing and where existing work is altered, cut, patch and make good to match existing work. This includes sections of existing work as a result of removal of existing services.
- .4 Do not cut, bore, or sleeve load-bearing members.
- .5 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .6 Fit work tight to pipes, sleeves, ducts, conduits, and other services penetrating new and existing surfaces.
- .7 Openings made in existing fire rated walls, floors and ceilings shall be filled with purpose made, ULC approved, fire stopping material and smoke seals.
- .8 Reinstate integrity of fire rated separations which have been affected as a result of the work.

1.15 LOCATION OF FIXTURES

- .1 Location of equipment, fixtures and outlets, shown or specified shall be considered as approximate. Final location shall be as required to suit conditions at the time of installation.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with the manufacturer's recommendations for safety, access and maintenance.
- .3 Inform Departmental Representative when impending installation conflicts with other new or existing components. Follow directives for final location.
- .4 Submit field drawings to indicate final position of services and equipment.

1.16 EXISTING SERVICES

- .1 Before commencing work, investigate and establish location and extent of service lines in area of work and notify Departmental Representative of findings.
- .2 Where work involves breaking into, connecting or shutting down of existing services, obtain approval beforehand from Departmental Representative and carryout work at times as

directed by Departmental Representative with minimum disturbance to Facility and site operations. Adhere to approved schedule and provide notice to affected parties.

- .1 Abide by safety lockout requirements specified in Section 01 35 25.
- .3 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .4 Protect, relocate or maintain existing active services as required. Where inactive services are encountered, cap off in manner approved by authority having jurisdiction over service. Record location of maintained, rerouted and abandoned service lines.
- .5 Provide temporary services to maintain critical building systems.

1.17 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions in place at site of work.

1.18 ASBESTOS DISCOVERY

- .1 Demolition of spray or trowel-applied asbestos can be hazardous to health. Should material resembling spray or trowel-applied asbestos be encountered in course of work, stop work and notify Departmental Representative immediately. Do not proceed with relevant work until written instructions have been received from Departmental Representative.
- .2 Contractor shall consult the facility Asbestos Management Plan (AMP), if existing, prior to commencement of work. All work to be in accordance with AMP.

END OF SECTION

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 01 14 10 - Scheduling and Management of Work
- .2 01 35 59 - Site Security Procedures

1.2 ACCESS AND EGRESS

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

1.3 USE OF SITE AND FACILITIES

- .1 Execute work with the least possible interference or disturbance to facility operations. Make arrangements with Departmental Representative to facilitate work as stated. Provide minimum five (5) working days notice for any work that may disrupt facility operations.
- .2 Maintain existing services to buildings and site, and provide for personnel and vehicle access.
- .3 Where security may be reduced by the Work, provide temporary means to maintain security.
- .4 Contractor shall be responsible for providing their own site offices and sanitary facilities.
- .5 Use only elevators, existing in building for moving workers and material.
 - .1 Protect walls of passenger elevators, to authorization of Departmental Representative prior to use.
 - .2 Accept liability for damage, safety of equipment and overloading of existing equipment.
- .6 Closures: protect work temporarily until permanent enclosures are completed.

1.4 ALTERATIONS, ADDITIONS OR REPAIRS TO EXISTING BUILDING

- .1 Execute work with least possible interference or disturbance to facility operations, occupants, and normal use of premises. Arrange with Departmental Representative to facilitate execution of work.

1.5 EXISTING SERVICES

- .1 Notify Departmental Representative and utility companies of intended interruption of services and obtain required permissions.
- .2 Where Work involves breaking into or connecting to existing services, provide Departmental Representative 48 hours notice of necessary interruption of mechanical or electrical services throughout course of work. Keep duration of interruptions to a minimum. Coordinate timing of planned interruptions with Departmental Representative.
- .3 Coordinate bypass/shutdown of life safety systems with O&M staff and Departmental Representative. Costs are the responsibility of the Contractor.
- .4 Allow for interrupted personnel, pedestrian and vehicular traffic.

1.6 SPECIAL REQUIREMENTS

- .1 Carry out noise generating Work during "off hours" as defined in Section 01 14 10 - Scheduling and Management of Work. Coordinate with Departmental Representative and Facility operations staff.
- .2 Ensure that Contractor personnel employed on site become familiar with and obey regulations including safety, fire, traffic and security regulations.
- .3 Keep within limits of work and avenues of ingress and egress.
- .4 Contractor may have deliveries made to the job site during regular hours.

1.7 SECURITY CLEARANCES

- .1 Personnel employed on this project will be subject to security check. Obtain required security clearances, as instructed, for each individual who will require such in order to enter premises, including sub-trades.
- .2 Obey, abide by and follow site specific security requirements.

1.8 SECURITY ESCORT

- .1 Personnel employed on this project must be escorted when executing work in non-public areas during normal working hours.

- .2 The Departmental Representative is responsible for providing a dedicated commissionaire to escort personnel within the building during working and after normal hours.

1.9 BUILDING SMOKING ENVIRONMENT

- .1 Comply with smoking restrictions.

END OF SECTION

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- .3 Provide sufficient details in Work Schedule to clearly illustrate an effective implementation plan, showing commencement and completion of all components of work within the time stated in the accepted bid.
 - .4 As a minimum, Work Schedule shall include:
 - .1 Bar (GANTT) Charts, indicating relevant work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities supported by;
 - .1 Description of key elements of work illustrated in bar chart, demonstrating implementation plan for completion of project within designated time.
 - .5 Work schedule must take into consideration and reflect any required work phasing, sequence of work, special conditions and operational restrictions.
 - .6 Work schedule will be submitted to Departmental Representative. Any required changes will be made in coordination with Departmental Representative, trades and subtrades.
 - .7 Completed schedule will be submitted to Departmental Representative. Take necessary measures to complete work within scheduled time.
 - .8 Do not alter schedule without authorization from Departmental Representative.
 - .9 Ensure that trades and subtrades are made aware of the work restraints and operational restrictions specified.
 - .10 Schedule Updates:
 - .1 Submit bi-weekly to 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.
 - .11 Departmental Representative will make interim reviews and evaluate progress of work based on reviewed schedule. Frequency of such reviews will be as decided by Departmental Representative. Address and take corrective measures on items identified in reviews by Departmental Representative. Update schedule accordingly.
 - .12 In every instance, change or deviation from the Work Schedule, no matter how minimal the risk or impact on safety or

inconvenience to the Facility, Facility operation or public might appear, will be subject to prior review by the Departmental Representative.

1.4 WORK RESTRICTIONS

- .1 Minimize impact and interruption to the daily operations of the Institution during the entire course of the Work. Stringently follow directives given by the Departmental Representative in this regard.
- .2 The Work of this Contract may be carried out during regular working hours.
- .3 Area(s) being renovated must be reinstated and made operational at end of each work shift for daily use by Institutional staff during the days and operation hours of the Facility.
 - .1 Operational hours are specified in section 01 35 59.
- .4 Perform work in phases, as predetermined and planned with the Departmental Representative in order to effectively control dust and inconvenience to Facility users.
- .5 Facility circulation maintained:
 - .1 Ensure that entrances, corridors, stairwells, fire exits 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.
 - .2 Maintain those areas clean and free of construction materials and equipment. Provide temporary dust barriers and other suitable enclosures to ensure users are not exposed to construction activities and are protected from exposure to dust, noise and hazardous conditions.
 - .3 Maintain fire escape routes accessible and fire fighting access open all times for the duration of the project.
 - .4 Do not under any circumstances block fire exit doors. Do not leave construction materials or debris in corridors, stairwells building entrances and exits.
- .6 Dust Control and Cleaning Requirements for interior work:
 - .1 See Section 01 50 00 for dust control and Section 01 74 11 for cleaning requirements.
 - .2 Effectively plan and implement dust control measures and cleaning activities as an integral part of all construction activities. Review measures with the Departmental Representative before undertaking work, especially for major dust generating activities.

- .3 Avoid situations and practices which result in dust and dirt being tracked into non-renovated areas of the facility by workers. This includes corridors and entrances used to gain access to various work areas.
- .4 Inform workers and make them sensitive to the need for dust and dirt control as a requirement of the Contract. Stringently enforce requirements. Immediately address noncompliance.
- .6 Moving Operations:
 - .1 Be responsible for temporarily moving existing workstations, desks, office equipment, computers and furnishings as required to perform the Work.
 - .2 Reinstate at the end of each work shift.
 - .3 Use only qualified personnel for disconnection and reconnection of various equipment.
- .7 Damage to Facility and tenant equipment:
 - .1 Damage to existing facility as a result of the execution of the work must be patched and repaired at no extra cost to the Contract.
- .8 Facility access corridors and emergency exits:
 - .1 Ensure that corridors, stairs, entrances and fire exits are left unobstructed and kept free of construction materials, tools, debris, dust and dirt at all times for safe passage of occupants.
 - .2 Fire escape routes must be accessible and maintained at all times. Do not under any circumstances block fire escape routes.
- .9 Ensure that trades and subtrades are aware of the Off-Hour requirement of the Contract and that any costs incurred as a result is included in the Contractor's bid price.
- .10 Ensure that sub-trades are made aware of and abide by the contents of this section and particularly the work restrictions specified herein due to operational requirements.

1.5 PROJECT MEETINGS

- .1 Schedule and administer project meetings, in coordination with Departmental Representative, or as deemed necessary due to progress of work or particular situation.
- .2 Prepare agenda for meetings.

- .3 Notify participants in writing 3 days in advance of meeting date.
 - .1 Ensure attendance of subcontractors.
 - .2 Departmental Representative will provide list of other attendees to be notified.
- .4 Hold meetings at site or where arranged with Departmental Representative.
- .5 Preside at meetings and record minutes.
 - .1 Indicate significant proceedings and decisions. Identify action items by parties.
 - .2 Distribute to participants by mail, email or by facsimile within 3 working days after each meeting.

1.6 WORK COORDINATION

- .1 The 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 The Contractor shall convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required.
 - .1 Provide each trade with the plans and specifications as required, to assist in planning and carrying out their respective work.
 - .2 Develop work plans as required to coordinate potential interference between work of various trades and distribute to all affected parties.
 - .1 Pay particularly close attention to overhead work within or near to building structural elements.
 - .2 Use drawings to identify building elements, services lines, rough-in points and indicate from where various services are coming.
 - .3 Plan and coordinate work in such a way to minimize quantity of service line offsets.
- .3 Submission of shop drawings and ordering of prefabricated equipment or prebuilt components shall only occur once coordination for such items has taken place between trades and all conditions affecting the work of the interfacing trades has been made known and accounted for.
- .4 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 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.
- .5 No extra costs will be paid to the Contract for expenses incurred by General Contractor or subcontractors, resulting from failure to carry out proper coordination 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 and shall be resolved at their own cost.

END OF SECTION

PART 1. GENERAL

1.1 SUBMITTAL GENERAL REQUIREMENTS

- .1 Submit to Departmental Representative for review, requested submittals specified in various sections of the specifications including shop drawings, samples, permits, compliance certificates, test reports, work management plans and other data required as part of the work.
- .2 Submit sufficient copies required by the Contractor and sub-trades plus 1 copy which will be retained by the Departmental Representative. Include within submission additional copies for insertion into the O & M manuals specified in section 01 78 00.
- .3 Accompany data with transmittal letter identifying project name, project number, Contractor's name and address, supplier name, description of items and quantity of drawings/data being submitted.
- .4 Allow up to 15 calendar days from date of receipt for review of submittals by the Departmental Representative.
- .5 Do not proceed with work applicable to shop drawing item until relevant submission has been reviewed by Departmental Representative.
- .6 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay of Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract time and no claim for extension by reason of such default will be allowed.
- .7 Submissions shall include:
 - .1 Date and revision dates.
 - .2 Project title and project number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized Representative certifying review of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Cross references to particular details of contract drawings and specifications section number for which shop

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- drawing submission addresses.
- .6 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.
 - .8 Present data, dimensions and engineering values in SI Metric units.
 - .9 Review submittals prior to submission. Ensure that necessary requirements have been determined and verified and that each submittal has been checked and coordinated with requirements of Work and Contract Documents.
 - .1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by Departmental Representative and considered rejected.
 - .2 Verify field measurements and affected adjacent Work are coordinated.
 - .10 Notify Departmental Representative in writing, at time of submission, identifying deviations from the Project Documents, stating reasons for deviations.
 - .11 Contractor's responsibility for errors, omissions or deviations in submissions from the Project Documents is not relieved by the Departmental Representative's review.
 - .12 Submittal format: paper originals, or alternatively clear and fully legible copies of originals. Facsimiles are not acceptable, except in special circumstances authorized by Departmental Representative. Poorly prepared, non-legible, submittals will not be accepted and will be returned for resubmission.
 - .13 Make changes or revisions to submissions which Departmental Representative may require; consistent with the Project Documents and resubmit. When resubmitting, identify revisions.
 - .14 Keep one reviewed copy of each submittal document on site for the duration of the Work.

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means fabrication drawings, erection drawings, diagrams, illustrations, schedules, performance charts, technical product data, brochures, specifications, test reports, installation instructions and other data which are to be provided by the Contractor to illustrate compliance with specified materials and details of a portion of work.
- .2 Shop Drawings Format:
 - .1 Opaque white prints or photocopies of original drawings modified to clearly illustrate work specific to project requirements. Maximum sheet size to be 1000 x 707 mm.
 - .2 Product data from manufacturer's standard catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products, to be original full colour brochures, clearly marked indicating applicable data and deleting information not applicable to project.
 - .3 Drawings, photocopies or facsimiles considered to be illegible will not be accepted and returned not reviewed.
- .3 Shop Drawings Content:
 - .1 Indicate materials, methods of construction, attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of the work. Where items or equipment attach or connect to other items or equipment, confirm that all interrelated work has been coordinated, regardless of section or trade from which the adjacent work is being supplied and installed.
 - .2 Supplement manufacturer's standard drawings and literature with additional information to provide details applicable to project.
- .4 Delete information not applicable to project on all Submittals.
- .5 Adjustments or corrections made on shop drawings by the Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, advise the Departmental Representative in writing prior to proceeding with Work.
- .6 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections and comments are made, fabrication and installation may proceed upon receipt of shop drawings. If shop drawings are rejected

and noted to be resubmitted, do not proceed with that portion of work until resubmission and review of corrected shop drawings, through same submission procedures indicated above.

- .7 Be advised that costs and expenses incurred by Departmental Representative to conduct more than one review of poor or incorrectly prepared shop drawing submittal for a particular material, equipment or component of work may be assessed against the Contractor in the form of a financial holdback to the Contract.
- .8 After Departmental Representative's review, distribute copies as required.
- .9 The review of shop drawings by the Departmental Representative is for the sole purpose of ascertaining conformance with the design concept. This review shall note that responsibility remains with The Contractor, and such reviews do not relieve the Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting the requirements of the Project Documents. The Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to the fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.

END OF SECTION

PART 1. GENERAL

1.1 SECTION INCLUDES

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

1.2 RELATED WORK

- .1 Section 01 35 28 Health and Safety Requirements

1.3 REFERENCES

- .1 Fire Protection Standards issued by Fire Protection Services of Human Resources Development Canada as follows:
 - .1 FCC No. 301-Latest Edition; Standard for Construction Operations.
 - .2 FCC No. 302- Latest Edition; Standard for Welding and Cutting.
 - .3 FCC standards, 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, Tel: (902) 426-6053.

1.4 DEFINITIONS

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

1.5 SUBMITTALS

- .1 Submit Hot Work permit to Departmental Representative for review, within 14 calendar days after contract award.
- .2 Submit in accordance with section 01 33 00.

1.6 FIRE SAFETY REQUIREMENTS

- .1 Abide by the following fire safety measures during the Work:
 - .1 National Fire Code
 - .2 Fire Protection Standards FCC 301-1982, Standard for Construction Operations and FCC 302-1982, Standard for Welding and Cutting.
 - .3 Federal and Provincial Occupational Health and Safety Acts and Regulations
- .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.
- .3 FCC standards may be viewed at:
 - .1 http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/
 - .2 Fire Protection Services - Atlantic Region office, Halifax, N.S, Tel. (902)426-6053

1.2 HOT WORK AUTHORIZATION

- .1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot Work on site.
- .2 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.
 - .4 Use of open flame torches such as for roofing work.
- .3 To obtain authorization submit to Departmental Representative:
 - .1 Contractor's typewritten Hot Work Procedures to be followed on site.
 - .2 Description of the type and frequency of Hot Work required.
 - .3 Obtain Hot Work Permit form from Institutions Engineering and Maintenance Department.
- .4 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" for each

individual job per day.

- .5 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
 - .4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.
- .6 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.
- .7 In occupied Facility, coordinate performance of Hot Work with Facility Manager through Departmental Representative. Follow Departmental Representative's directives in this regard.

1.3 HOT WORK PROCEDURES

- .1 Develop and implement written safety procedures and work practices to be followed on site when performing Hot Work. Stringently enforce compliance by workers.
- .2 Hot work procedures to include:
 - .1 Requirement to perform hazard assessment of work area beforehand in accordance with the site Safety Plan.
 - .2 Use of a Hot Work Permit system issued, by Contractor's site Superintendent, to worker or subcontractor granting permission to conduct Hot Work.
 - .3 Permit required for each Hot Work event.
 - .4 Provision for a designated person to carry out a minimum 1 hour fire safety watch upon completion of 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 work 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.
- .6 Failure to comply with fire safety procedures may result in the issue of a Non-Compliance notification as specified in Section 01 35 28.

1.4 HOT WORK PERMIT

- .1 Information on permit form to include:
 - .1 Project name, project number;
 - .2 Specific room or area where hot work performed;
 - .3 Date of issue;
 - .4 Description of hot work type needed;
 - .5 Special procedures and precautions to be followed, including type of fire extinguisher needed;
 - .6 Name & signature of issuing person;
 - .7 Name of worker conducting the hot work;
 - .8 Permit validity period not to exceed 8 hours. Indicate permit's start date/time and termination date/time;
 - .9 Worker's signature and date/time of hot work completion;
 - .10 Stipulated period of safety watch needed;
 - .11 Fire Safety Watcher's signature with date/time when terminated.
- .2 Each Hot Work Permit to be completed in full, signed and returned to Contractor's Superintendent for safe keeping on site.
- .3 Keep Hot Work permits on site for the duration of the Work. Provide for inspection by Departmental Representative upon request.
- .4 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.

1.5 FIRE PROTECTION AND ALARM SYSTEMS

- 1. Fire protection and alarm systems shall not be:
 - .1 Obstructed.
 - .2 Shut-off, unless authorized 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 fire fighting.

- .3 Costs incurred, from the fire department, Facility owner, and Facility operator 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.

END OF SECTION

PART 1. GENERAL

1.1 SECTION INCLUDES

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

1.2 RELATED WORK

- .1 Section 01 35 29: Health and Safety Requirements.

1.3 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 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.
- .4 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).
- .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.

1.4 COMPLIANCE REQUIREMENTS

- .1 Isolate and lockout electrical facilities and mechanical equipment in accordance with:
 - .1 CSA C22.1-06 Canadian Electrical Code.
 - .2 Federal and Provincial Occupational Health and Safety Acts and Regulations.
 - .3 Regulations and code of practice applicable to piece of equipment being locked out as recommended by manufacturer.
 - .4 Procedures specified herein.
- .2 In event of conflict between any provisions of above the most stringent will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.
- .3 Ensure that lockout procedures established are stringently followed by all workers.

1.5 SUBMITTALS

- .1 Submit copy of proposed lockout procedures and sample of lockout tags to Departmental Representative for review, within 14 calendar days of contract award.
- .2 Submit in accordance with section 01 33 00.

1.6 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 the 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, as follows:
 - .1 Fill-out standard forms in current use at the Facility as provided by Departmental Representative or;

- .2 Where no form exists, make request in writing identifying:
 - .1 Identification of system, equipment or service to be isolated, including its location;
 - .2 Duration of the isolation, indicating date and time of both the start and termination periods.
 - .3 Voltage of service feed to system or equipment being isolated.
 - .4 Name and signature of person making the request.
- .4 Do not proceed with work until receipt of written notification from Departmental Representative granting the Isolation Request and authorizing to proceed with the Work.
 - .1 Departmental Representative may designate another person at the Facility as the individual authorized to grant the Isolation Request.
- .5 Conduct safe, orderly shutdown of equipment or facilities. De-energize, isolate, and lockout power and other sources of energy feeding equipment or facility.
- .6 Plan and schedule shut down of existing services in consultation with Departmental Representative. Minimize impact and downtime of facility operations. Follow Departmental Representative's directives in this regard.
- .7 Conduct hazard assessment as part of the process in accordance with health and safety requirements specified Section 01 35 30.

1.7 LOCKOUTS

- .1 De-energize, isolate and lockout electrical facility, mechanical equipment and machinery from 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.
 - .1 Describe safe work procedures, practices, and work sequence to safely isolate potential energy sources; lockout and tagout electrical facilities and equipment.
 - .2 Generic procedures shall be edited and tailored to reflect actual work requirements,
 - .3 Incorporate previously established rules and procedures in force at site as provided by the Facility Manager through the Departmental Representative.
 - .4 Label the lockout procedures as being those pertinent to the Work of this Contract.

- .3 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.
- .4 Clearly establish and describe responsibilities of:
 - .1 Workers.
 - .2 Person managing the permit and lockout tag system.
 - .3 Safety Watcher.
 - .4 Subcontractor(s) and General Contractor.
- .5 Procedures shall meet code and regulation compliance requirements specified elsewhere in this section.
- .6 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.
- .7 Use industry standard lockout tags.
- .8 Provide appropriate safety grounding and guards as required.

1.8 CONFORMANCE

- .1 Brief workers and sub-trades on the requirements of this section. Stringently enforce use and compliance.
- .2 Failure to follow lockout procedures specified herein may result in the issuance of a Non-Compliance notification as specified in section 01 35 28.

1.9 DOCUMENTS ON SITE

- .1 Post Lockout Procedures on site, on common location for viewing by workers.
- .2 Keep copies of Request for isolation forms and lockout permits and lockout tags issued to workers on site for full duration of Work.
- .3 Make available to Departmental Representative or to authorized safety representative upon request.

END OF SECTION

PART 1. GENERAL

1.1 DEFINITIONS

- .1 COHS: Canada Occupational and Health Safety Regulations made under the Canada Labour Code, Part II.
- .2 PPE: personal protective equipment
- .3 Medical Injury: any injury requiring medical aid, as defined in the Canadian Dictionary of Safety Terms-1987 published by the Canadian Society of Safety Engineers (C.S.S.E), for which medical treatment was provided and the cost of which is covered by the Workers Compensation Board of the Province in which the injury occurred.
- .4 Competent: qualified and knowledgeable in Occupational Health and Safety as defined in the Provincial Occupational Health and Safety Regulations of the Province where the Work of this Contract occurs.

1.2 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Submit to the Departmental Representative, site-specific Health and Safety Plan prior to commencement of Work.
 - .1 Submit within 7 work days of notification of Award of Contract.
 - .2 Departmental Representative will review Contractor's site-specific Health and Safety Plan and may provide comments.
 - .3 Revise Plan as appropriate and resubmit within 15 work days after receipt of comments.
 - .4 Departmental Representative's review and comments made of Contractor's Health and Safety Plan should not be construed as approval and does not reduce the Contractor's overall responsibility for construction Health and Safety of the Work.
 - .5 Submit revisions of Safety Plan during the course of Work.
- .3 Submit name of Contractor's Health and Safety Site Representative.
- .4 Submit building permit, compliance certificates and other permits obtained.

- .5 Submit copy of Letter of Good Standing from Provincial Workers Compensation organization.
- .6 Submit copies of reports or directions issued by Federal, Provincial and Territorial Health and Safety Inspectors.
- .7 Submit copies of accident or incident reports.
- .8 Submit WHMIS MSDS - Material Safety Data Sheets.
- .9 Upon request by Departmental Representative, submit reports and other documentation stipulated to be produced and maintained by Federal and Provincial Occupational Health and Safety Regulations and as specified herein.

1.3 COMPLIANCE REQUIREMENTS

- .1 Comply with the Occupational Health and Safety Act for the Province of Nova Scotia, and the General Regulations made pursuant to the Act.
- .2 Comply with Canada Labour Code Part II, and the Canada Occupational Health and Safety Regulations.
- .3 Observe construction safety measures of:
 - .1 Part 8 of National Building Code of Canada
 - .2 Municipal statutes and ordinances.
 - .3 Provincial Workers Compensation Board.
- .4 In event of conflict or discrepancy between provisions of the above specified regulations, the most stringent requirement shall 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 at:
Canadian Government Publishing
Public Works & Government Services Canada
Ottawa, Ontario, K1A 0S9
Tel: (819) 956-4800 (1-800-635-7943)
Publication No. L31-85/2000 E or F)
- .6 Maintain Workers Compensation Coverage for duration of Contract.

- .7 Medical Surveillance: Where prescribed by legislation or regulation, obtain and maintain worker medical surveillance documentation.

1.4 RESPONSIBILITY

- .1 Be responsible for health and safety of persons on site, safety of property on site and for the protection of persons and environment adjacent to site to extent that they may be affected by conduct of the Work.
- .2 Comply with and enforce compliance by workers, sub-trades and other persons granted access to work site with safety requirements of Contract Documents, applicable federal, provincial, and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.5 SITE CONTROL AND ACCESS

- .1 Control work site and entry points to construction areas. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
- .2 Isolate work site and storage areas from other areas by use of appropriate means.
 - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate 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.
 - .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 site. Advise of site hazards and safety rules to be observed while on site.
- .4 Ensure persons granted site access wear appropriate personal protective equipment (PPE) suitable to work and site conditions. Supply PPE to authorized persons who require access to perform tests, inspections, or other approved purposes.

- .5 Secure site, when not in use, against entry and to protect persons against harm.

1.6 PROTECTION

- .1 Carry out work placing emphasis on health and safety of the Public, Facility personnel, construction workers and protection of the environment.
- .2 Erect safety barricades, lights and signage on site to effectively delineate work areas, protect pedestrian and vehicular traffic around and adjacent to work and to create a safe working environment.
 - .1 Erect hoarding and temporary lighting as required. See Section 01 50 00 for minimum acceptable barricades.
- .3 Should unforeseen or peculiar safety related hazard or conditions become evident during the performance of the 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 with Provincial authorities prior to beginning of Work.

1.8 PERMITS

- .1 Post on site: permits, licenses and compliance certificates specified in section 01 10 10.
- .2 Where 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.

1.9 HAZARD ASSESSMENTS

- .1 Perform site specific health and safety hazard assessment of the Work and its site.
- .2 Carryout initial assessment prior to commencement of Work with further assessments as needed during the progress of the Work.

- .3 Record results and address in Health and Safety Plan.
- .4 Keep documentation on site for the entire duration of the Work.

1.10 HEALTH AND SAFETY MEETINGS

- .1 Attend pre-construction health and safety meeting conducted by Departmental Representative. Have following persons in attendance:
 - .1 Site Superintendent
 - .2 Contractor's designated Health and Safety Site Supervisor
 - .3 Departmental Representative will advise of date, time and location.
- .2 Conduct health and safety meetings and tool box briefings on site. Hold meetings on a regular and scheduled basis during entire work in accordance with requirements and frequency stipulated in provincial occupational health and safety regulations.
 - .1 Keep workers informed of potential hazards and provide safe work practices and procedures to be followed.
 - .2 Take written minutes and post on site.

1.11 HEALTH AND SAFETY PLAN

- .1 Develop written site-specific Project Health and Safety Plan, based on hazard assessments, prior to commencement of work.
 - .1 Submit copy to Departmental Representative within 14 calendar days of Contract Award.
 - .2 Submit updates as work progresses.
- .2 Health and Safety Plan shall contain three 3 parts with the following information:
 - .1 Part 1 - Hazards: List of individual health risks and safety hazards identified by hazard assessment.
 - .2 Part 2 - Safety Measures: Engineering controls, personal protective equipment and safe work practices used to mitigate hazards and risks listed in Part 1 of Plan.
 - .3 Part 3a: Emergency Response: standard operating procedures, evacuation measures and emergency response in the occurrence of an accident, incident or emergency.
 - .1 Include response to hazards listed in Part 1 of Plan.
 - .2 Evacuation measures to complement the Facility's existing Emergency Response and Evacuation Plan. Obtain pertinent information from Departmental Representative.

- .3 List names and telephone numbers of officials to be contacted including:
 - .1 General Contractor and Sub-trades.
 - .2 Federal and Provincial Departments as stipulated by laws and regulations and local emergency resource organizations, as needed based on the nature of the emergency or accident.
 - .3 Representatives from the Departmental Representative and site Facility management. Departmental Representative will provide a list of individuals.

- .4 Part 3b - Site Communications:
 - .1 Procedures used on site to share work related safety issues between workers, sub-trades, and the General Contractor.
 - .2 List of critical tasks and work activities, communicated with the Facility Manager, which has risk of affecting tenant operations, or endangering the health and/or safety of Facility personnel and 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>
Part 1	Part 2	Part 3a/3b
Identified Hazards	Safety Measures	Emergency Response & Site Communications

- .4 Develop Plan in collaboration with sub-trades. Address work activities of all trades. Revise and update Plan as Sub-contractors arrive on site.

- .5 Implement and enforce compliance with the requirements of Plan for the full duration of Work, to final completion and demobilization from site.

- .6 As work progresses, review and update Plan. Address additional health and safety risks and hazards identified through on-going hazard assessments.

- .7 Post a copy of Plan, and updates on site.

- .8 Submission of the Health and Safety Plan, and updates, to the Departmental Representative is for review and information purposes only. Departmental Representative's receipt, review and comments made shall not be construed to imply approval in

part or in whole of the Plan by the Departmental Representative and shall not be interpreted as a warranty of being complete and accurate or as a confirmation that all health and safety requirements of the Work have been addressed and that it is legislative compliant. Furthermore, the Departmental Representative's review of the Plan shall not relieve the Contractor of his legal obligations for Occupational Health and Safety provisions specified as part of the Work and those required by provincial legislation.

1.12 SAFETY SUPERVISION AND INSPECTIONS

- .1 Designate one person to be present on site at all times, responsible for supervising health and safety of the Work.
 - .1 Person to be competent in Occupational Health and Construction Safety as defined in the Provincial Occupational Health And Safety Act.
- .2 Assign responsibility, obligation and authority to such designated person to stop work as deemed necessary for reasons of health and safety.
- .3 Conduct regularly scheduled safety inspections of work site on a minimum weekly basis.
 - .1 Note deficiencies and remedial action taken in a log book or diary.
- .4 Keep inspection reports on site.
- .5 Health and Safety Representative to be on site at all times when work is in progress.
- .6 Meetings:
Conduct regular tool box safety meetings during the Work, in conformance with Occupational Health and Safety regulations.
- .7 Cooperate with the Facility's Occupational Health and Safety representative.
- .8 Maintain documentation of inspections and safety meetings on site.

1.13 TRAINING

- .1 Ensure that all workers and other persons granted access to site are competently trained and knowledgeable on:
 - .1 Safe use of tools and equipment.

- .2 How to wear and use personal protective equipment (PPE).
- .3 Safe work practices and procedures to be followed in carrying out work.
- .4 Site conditions and minimum safety rules to be observed on site, as given at site orientation session.

1.14 MINIMUM SITE SAFETY RULES

- .1 Notwithstanding requirements to abide by federal and provincial health and safety regulations, the following safety rules shall be considered the minimum requirements to be obeyed by all persons granted site access:
 - .1 Wear personnel 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 or conditions at the Work site, near-miss accidents, injury and damage.
 - .3 Maintain site in tidy condition.
 - .4 Obey warning signs and safety tags.
 - .5 Follow manufacturers Health and Safety precautions.
- .2 Brief workers on site safety rules and on disciplinary measures which may be taken by Departmental Representative for violation or non compliance of such rules. Post rules on site.
- .3 The following actions or conduct by Contractor, workers and sub-trades will be considered as non conformance with the health and safety requirements of the Contract for which a Non-Compliance Notification will be issued to the Contractor by the Departmental Representative:
 - .1 Failure to follow the minimum site safety rules specified above.
 - .2 Negligence resulting in serious injury or major property damage.
 - .3 Deliberate non-compliance with Federal and Provincial Acts and Regulations.
 - .4 Falsification of information in Workers Compensation Reports, safety reports and other health and safety related documents submitted to Departmental Representative or to Authority having jurisdiction.
 - .5 Possession of firearms on site.
 - .6 Possession of non-prescriptive illegal drugs or alcohol.
 - .7 Action, or lack thereof, resulting in the issuance of Warnings, Fines or Stop Work Orders from a Provincial Authority having jurisdiction.
 - .8 Violation of other specified health and safety rules and requirements as determined by Departmental Representative.

- .4 See elsewhere in this section for details on Non-Compliance Notifications and resulting disciplinary measures.

1.15 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 may stop Work if non-compliance of health and safety regulations is not corrected.

1.16 REPORTING

- .1 Investigate and report the following incidents and accidents:
 - .1 Those as required by Provincial Occupational Safety and Health Act and Regulations.
 - .2 Injury requiring medical aid as defined in the Canadian Dictionary of Safety Terms-1987, published by the Canadian Society of Safety Engineers (C.S.S.E) as follows:
 - .1 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 Property damage in excess of \$5000.00,
 - .4 Interruption to Facility operations with potential loss to a Federal Dept. in excess of \$5000.00,
 - .5 Those which require notification to Workers Compensation Board or other regulatory agencies as stipulated by applicable law or regulations.
- .2 Send written report to Departmental Representative for all above cases.

1.17 TOOLS AND EQUIPMENT SAFETY

- .1 Routinely check and maintain tools, equipment and machinery for safe operation.
- .2 Conduct checks as part of site safety inspections. When requested, submit proof that checks and maintenance have been carried out.

- .3 Tag and immediately remove from site items found faulty or defective.

1.18 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.

1.19 BLASTING

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

1.20 POWDER ACTUATED DEVICES

- .1 Use of powder actuated fastening devices is prohibited.

1.21 POSTING OF DOCUMENTS

- .1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on site in accordance with Acts and Regulations of Province having jurisdiction.
- .2 Post other documents as specified herein, including:
 - .1 Site specific Health and Safety Plan
 - .2 WHMIS data sheets

1.22 SITE RECORDS

- .1 Maintain on 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 NON COMPLIANCE AND DISCIPLINARY MEASURES

- .1 Immediately address and correct health and safety violations and non-compliances.
- .2 Negligence or failure to follow occupational health and safety provisions specified in the Project Documents and applicable laws and regulations may result in disciplinary measures taken by the Departmental Representative against the Contractor.
- .3 Departmental Representative uses a system of Non-Compliance Notifications and Disciplinary Measures on projects as follows:
 - .1 A Non-Compliance Notification is issued to the Contractor by Departmental Representative when there is a violation or non compliance of the project's health and safety requirements, or of Provincial or Federal regulations by any worker, sub-trades or other persons whom the Contractor has granted access to the work site.
 - .2 Non-Compliance Notifications are progressive in nature, resulting in disciplinary measures imposed depending on the frequency, nature and severity of the infraction.
 - .3 Disciplinary measures include:
 - .1 removal of the offending person or party from site;
 - .2 financial penalties in the form of progress payment reduction or holdback assessments made against the Contract;
 - .3 taking the Work Out of Contractor's Hands in accordance with the General Conditions.
- .4 Departmental Representative will make final decision as to what constitutes a violation and when to issue a Non-Compliance Notification.
- .5 Non-Compliance Notifications issued by the Departmental Representative shall not be construed as to overrule or disregard warnings, orders and fines levied against Contractor by authorities having jurisdiction.
- .6 Details of the Non-Compliance Notification and Disciplinary Measures system will be provided by the Departmental Representative upon contract award and prior to commencement of work.
- .7 Be responsible to fully brief workers and sub-trades on the operation and importance of the Non-Compliance Notification and Disciplinary Measures System.

END OF SECTION

PWGSC
Replacement of Petroleum
Storage Tanks, Bldg A5
Springhill Institution
Project# R.061879.001

HEALTH AND SAFETY
REQUIREMENTS

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PART 1. GENERAL

1.1 Related Sections

- .1 Section 01 10 10 - General Instructions

1.2 Definitions

- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction. Control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.3 Submittals

- .1 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by the Consultant. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .2 Address topics at level of detail commensurate with environmental issue and required construction tasks.

1.4 Fires

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

1.5 Disposal of Wastes

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

1.6 Drainage

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

1.7 Site Clearing and Plant Protection (Not Used)

- .1 Not Used

1.8 Work Adjacent to Waterways (Not Used)

- .1 Not Used

1.9 Pollution Control

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

1.10 Historical / Archaeological Control (Not Used)

- .1 Not Used

1.11 Notification

- .1 The Consultant will notify the Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan. After receipt of such notice, inform the Consultant of proposed corrective action and take such action for approval by the Consultant.
- .2 Consultant will issue stop order of work until satisfactory corrective action has been taken.
- .3 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

PART 2. PRODUCTS

2.1 Not Used

PART 3. EXECUTION

3.1 Not Used

END OF SECTION

1.1 GENERAL

- .1 Perform the Work in such a way as to minimize disruptions to the daily operations of the Institution and to ensure that security at the Institution is maintained at all times.
- .2 Abide by security rules and procedures specified herein and as stipulated at the security briefing conducted prior to commencement of the Work.

1.2 DEFINITIONS

- .1 Institution: means the Penitentiary or Correctional Facility where the Work will be carried out.
- .2 Director: means the person in charge of the Correctional Institution or Penitentiary where the Work will be carried out and includes any authorized person at the Facility, as designated by the Director, to provide directions on his/her behalf.
- .3 Contraband: means any of the following:
 - .1 An intoxicant, including alcoholic beverages, drugs and narcotics;
 - .2 A weapon or a component thereof, ammunition for a weapon, and any other object that is designed to kill, injure or disable a person or that is altered so as to be capable of killing, injuring or disabling a person, when possessed without prior authorization;
 - .3 An explosive or a bomb or a component thereof;
 - .4 Currency over the prescribed limit of \$25.00 dollars and;
 - .5 Any other item, as deemed by the Director, to pose a risk to the security of a Penitentiary or to the safety of persons, when that item is possessed without prior authorization from the Director.
- .4 Unauthorized smoking items: means all smoking items including, but not limited to, cigarettes, cigars, tobacco, chewing or snuffing tobacco, cigarette making machines, matches and lighters.
- .5 Commercial vehicle: means any motor vehicle used to transport materials, equipment and tools to the site as required for construction purposes.
- .6 CSC: means the Department of Correctional Services Canada.

- .7 CPIC Security Clearance: means a personal background check made through the RCMP Canadian Police Information Centre.
- .8 Construction employee: means any person working for the General Contractor or subcontractor(s), commercial vehicle or equipment operator, material supplier and personnel from testing, inspection or regulatory agencies who need to circulate on the Institution's property as part of the Work.
- .9 Departmental Representative: as defined in the General Conditions.
- .10 Perimeter: means the fenced or walled area of the Institution that restrains the movement of the inmates.
- .11 Construction zone: means the area shown on the project drawings where the Contractor will be allowed to work. This area may or may not be isolated from the security area of the Institution.

1.3 PRELIMINARY PROCEEDINGS

- .1 Prior to commencement of work, the Contractor shall meet with the Director to:
 - .1 Discuss the nature and extent of all activities involved in the work of this contract.
 - .2 Obtain security rules, regulations and procedures in force at the Institution and directives to be followed by the Contractor and all construction employees during the entire course of the work.
- .2 The Departmental Representative will coordinate a pre-construction meeting between the Contractor, the Director and Facility security personnel who will provide details on site security requirements.
- .3 The Contractor shall:
 - .1 Ensure that all construction employees are aware of the CSC security requirements.
 - .2 Ensure that a copy of the CSC security requirements is prominently displayed at the work site at all times.
 - .3 Co-operate with Institutional staff in ensuring that security requirements and procedures are stringently followed by all construction employees.

- .4 Failure to follow site security requirements by the Contractor or by a construction employee could result in the immediate removal of the offending party or person from the site.

1.4 WORKER SECURITY CLEARANCE

- .1 CPIC security clearance must be obtained for all construction employees who need to circulate on the Institution's property during the course of the Work.
 - .1 Application forms will be provided by the Departmental Representative.
 - .2 Have forms filled out by each worker.
- .2 Submit to the Director:
 - .1 A list of the names with date of birth of all construction employees;
 - .2 Completed security clearance form for each person.
- .3 No person will be admitted inside the Institution without a valid CPIC Security Clearance, pertinent to the Institution of the Work, and a recent picture identification, such as a provincial driver's permit, to show proof of identity.
 - .1 Security clearance obtained for other Institutions or other CSC properties are not valid for Work of this contract.
- .4 Allow two (2) weeks for processing of security clearances.
- .5 Be aware that facial photographs of security cleared construction employees may taken as deemed required by the Director.
 - .1 These photographs will be posted for display at appropriate locations in the Institution or placed into an electronic database for identification purposes.
 - .2 Photo ID cards may also be issued to each construction employee to be donned while on site. ID cards must be prominently displayed at all times. ID cards must be returned to the Institution upon completion of the work.
- .6 CSC Security Clearance will be denied and entry into the Institution will be refused to any person which the Director has reason to believe is a security risk to the Facility's operations.
 - .1 Also, a person will be subject to the immediate removal from the Institution if he/she:

- .1 Appears to be under the influence of alcohol, drugs or narcotics.
- .2 Behaves in an unusual disorderly manner.
- .3 Is found in possession of contraband.

- .7 Facilitate the security clearance application process:
 - .1 Provide an application form to all workers including those of subcontractors.
 - .2 Submit a list of names and birth dates for all persons who require security clearance to the Departmental Representative.
 - .3 Coordinate and expedite subcontractor submissions.
 - .4 Assist applicants in filling out the application form and submitting related documentation.
 - .5 Review application form of each applicant for completeness.
 - .6 Have each worker keep a copy of their completed form in case the initial submission gets lost.
 - .7 Submit documentation in an organized manner complete with transmittal letter clearly identifying the specific project for which security clearance is being requested.
 - .8 Send data to the approved mailing address provided by the Departmental Representative.

1.5 VEHICLES AND TRAILORS

- .1 All unattended vehicles on the Institution's property shall have their windows, doors and trunks closed and locked at all times. Keys must be removed and kept securely in the possession of the vehicle's owner or with an employee of the Contractor or subcontractor who owns the vehicle.
- .2 The Director may limit the number and type of vehicles allowed at the Institution at any given time.
- .3 Drivers of delivery vehicles must have a valid CPIC security clearance. Vehicles that must enter the secure perimeter must be under constant escort by Institutional staff or Commissionaires while inside that area.
- .4 Office and Storage trailers:
 - .1 Permission is required from the Director to place and leave trailers on site.
 - .2 If permitted, trailers shall only be placed outside the Secure Perimeter of the Institution and at a specifically designated location on site.

- .3 All trailers shall have their doors kept locked at all times. Windows shall be securely locked when unoccupied.
- .4 All windows shall be covered with expanded steel mesh, securely fastened in place with tamperproof fasteners.

1.6 PARKING OF VEHICLES

- .1 Director will designate a location on site, outside the Secure Perimeter, where construction employee vehicles may be parked.
- .2 All other areas of the site are prohibited and vehicles are subject to being removed by the Institution with towing costs borne by their owner.

1.7 SHIPMENTS

- .1 Shipments of materials, equipment and tools to site shall be clearly marked with the project title and Contractor's name to avoid confusion with the Institution's own shipments.
- .2 Contractor shall have a designated person on site to receive and take possession of all deliveries.
- .3 Under no circumstances will Institutional staff accept any delivery designated for the Contractor or the Work.

1.8 TELEPHONES

- .1 Telephone landlines, facsimile machines and computers with internet connections are not permitted within the Secure Perimeter of the Institution unless prior approval is obtained from the Director.
- .2 If approved, place telephones, facsimile machines and computers with internet connections only where indicated and not accessible to Inmates.
 - .1 Equip computers with approved password protection features which will block internet connection by unauthorized persons.
- .3 Wireless cellular and digital telephones, including but not limited to devices for telephone messaging, pagers, Blackberries, telephone used as 2-way radios, are not

permitted within the Secure Perimeter of the Institution unless prior approval is obtained from the Director.

- .1 Should wireless cellular telephones be permitted, the owner/user of such device shall not permit it's use by an Inmate.
- .4 The Director may approve but limit the use of two way radios.

1.9 WORK HOURS

- .1 Be aware that the Institution operational hours are:
 - .1 Weekdays from Monday to Friday, between the hours of 08:00 and 17:00 but excludes statutory holidays.
 - .2 Changes to previously determined work hours will only be made for special situations and for certain aspects of the Work deemed necessary and where is it determined to be the least disruptive approach to the operations of the Institution as determined by the Director.
 - .1 A minimum of 7 days advance notice is required to obtain permission for changes to work hours.
 - .2 In case of an emergency, the advanced notification may be waived by the Director.
 - .3 Be aware that Off Hour work results in the need for the Institution to provide extra CSC security staff or commissionaires to be posted at the Institution to maintain security surveillance.

1.10 OFF-HOURS SITE ACCESS

- .1 Construction personnel and commercial vehicles will not be permitted access to the Institution outside of the stipulated work hours specified, unless approved by the Director.

1.11 OVERTIME WORK

- .1 No overtime work will be allowed at the end of a work shift.
- .2 Where overtime work is deemed necessary at the end of a work shift to complete a critical component of the work, it shall be planned and requested a minimum of 48 hours beforehand for approval by the Director.

- .3 Should unplanned overtime work occur due to an emergency situation, such as to complete a concrete pour or to make the work site safe and secure, the Contractor shall immediately advise the Director of this pending situation and stringently follow all directions given by the Director.

1.12 TOOLS AND EQUIPMENT

- .1 Make a complete list of all tools and equipment brought on site for use in the Work. Provide copy of the list to the Director and to the Departmental Representative.
- .2 Maintain and update list during the entire course of the Work.
- .3 Keep all tools and equipment under constant supervision. This is of particular importance for power-driven and cartridge-driven tools, cartridges, files, saw blades, rod saws, wire, rope, ladders as well as all types of jacking devices.
- .4 Store all tools and equipment in lockable tool boxes and place in approved and secure location.
- .5 Lock tool boxes when not in use. Keys shall remain in the possession of employees designated by Contractor.
- .6 Scaffolding: Store and securely lock scaffolding components when not erected. Once erected, secure against unauthorized disassembly by use of such of manner as approved by Director.
- .7 Immediately report to the Director any missing tools and/or equipment.
- .8 Tool Check: Be aware that CSC security personnel will conduct tool and equipment checks during the course of the Work against the list provided by Contractor. Frequency of checks to be as follows:
 - .1 At commencement and completion of the project.
 - .2 Weekly basis when the construction period is greater than 1 week.
- .9 Controlled items: entry and use of certain tools and equipment, such as cartridges and hacksaw blades, are highly controlled at the Institution. The Director will determine and advise which items are to be controlled.

- .1 Controlled items will be given to the Contractor at the beginning of each workday and only in sufficient quantity required for one day.
- .2 Controlled items must be returned to CSC security personnel at the end of each workday including all worn down or broken components such as blades, cartridges etc...

- .10 When propane or natural gas is used as fuel for construction heaters, the Contractor shall provide full time supervision of that operation during non-working hours.

1.13 KEYS

- .1 Security keys will not be issued to Contractor. Instruct all construction employees that all security keys must always remain with the security escort.

1.14 SECURITY HARDWARE

- .1 Turn over to Director all security hardware and security devices of items or equipment removed as part of the Work. This includes items intended for disposal as well as those for temporary safekeeping until ready for reinstallation as part of the Work.

1.15 PRESCRIPTION DRUGS

- .1 Construction employees who are required to take prescription drugs during the workday shall obtain approval from the Director beforehand and shall only bring on site a one days supply each day.

1.16 SMOKING RESTRICTIONS

- .1 Contractor and construction employees are not permitted to:
 - .1 Smoke inside the Institution or outdoors within the Secure Perimeter and;
 - .2 Must not possess unauthorized smoking items within the Secure Perimeter of the Institution.
- .2 Persons found in violation of this directive shall immediately cease smoking and dispose of all unauthorized smoking items.

Further smoking violation will result in the removal of the offending person off the Institution.

- .3 Smoking at the Institution is only permitted outdoors, outside the boundary of the Secure Perimeter and in a location designated by the Director.

1.17 CONTRABAND

- .1 Weapons, ammunition, explosives, alcoholic beverages, drugs and narcotics are considered Contraband and are strictly prohibited at the Institution.
- .2 Discovery of Contraband at the site and in work areas by the Contractor shall be reported immediately to the Director, complete with the identification of person(s) in possession of such Contraband.
- .3 Contractor shall be vigilant with construction employees and suppliers to ensure that no contraband items are brought on site. Advise all persons that the discovery of contraband will result in cancellation of their security clearance and their immediate removal from the site. Serious infractions could result in the removal of the subcontractor or Contractor from the Institution for the duration of the Contract.
- .4 Arms and ammunition found in vehicles owned by the Contractor, subcontractors, suppliers or construction employee will result in the immediate cancellation of security clearance for the driver of that vehicle.

1.18 SEARCHES

- .1 All vehicles and persons entering onto Institutional property may be subject to search.
- .2 Based on reasonable grounds, the Director may order the search of any person suspected to be in possession of contraband at the site.
- .3 Be aware that persons entering the Institution may be subject to screening of their personal effects for traces of contraband drug residue.

1.19 MOVEMENT OF VEHICLES

- .1 Be aware that commercial vehicles will only be allowed to enter or leave the Secure Perimeter of the Institution (ie: pass through the designated vehicle security gate) between the following hours of each day:
 - .1 From 08:15 AM to 11:30 AM and;
 - .2 From 12:00 PM to 16:00 PM.
- .2 Vehicles will not be allowed to leave the Institution until an inmate count has been completed.
- .3 Vehicles must be escorted by an authorized CSC Staff or Commissionaire while inside the Secure Perimeter of the Institution.
- .4 Contractor shall provide 24 hours advance notice to the Director of the arrival of heavy equipment such as excavator, cranes, concrete trucks etc...to the site.
- .5 Vehicles being loaded with soil or other debris at site, or any vehicle considered impossible to search, must be under continuous supervision by CSC staff or Commissionaires working under the authority of the Director.
- .6 Commercial vehicles will only be allowed access onto the Institution's property when their contents are certified by the Contractor, or his representative, as being strictly necessary to the execution of the work.
- .7 Vehicles shall be refused access to Institutional property if, in the opinion of the Director, they contain an article which jeopardizes the security of the Institution.
- .8 Private vehicles of construction employees will NOT be allowed inside the Secure Perimeter area of a medium or maximum security Institution, except for a special situation as may be authorized by the Director.
- .9 Subject to the Director's prior approval, certain construction equipment may be permitted to remain on site overnight and during weekends provided that such equipment is securely locked and the battery removed. The Director may also require that the equipment be tied by chain and padlocked to a solid unmovable object.

1.20 MOVEMENT OF PERSONS AT THE INSTITUTION

- .1 Subject to the requirements of good security, the Director will permit the Contractor and construction employees as much freedom of action and movement in the work areas of the site as is possible.
- .2 Notwithstanding the above clause, the Director will:
 - .1 Prohibit or restrict access to certain parts of the Institution.
 - .2 Require that access to certain areas of the Institution, (either for the entire duration of the work or for certain specific time periods) be only allowed under escort by a member of CSC security staff or by a Commissionaire.
- .3 During lunch and coffee breaks, all construction employees shall remain within the construction work areas of the site. No person shall be permitted to eat in the Officer's lounge or the dining room of the Institution.

1.21 SURVEILLANCE AND INSPECTION

- .1 Construction activities and related movement of personnel and vehicles will be under surveillance and subject to inspection by the Institution security staff to ensure that established site security requirements are stringently followed.
- .2 CSC staff will ensure that an understanding of the need to carry out surveillance and inspections, as specified above, is established among construction employees and maintained throughout the duration of the entire Work.

1.22 STOPPAGE OF WORK

- .1 The Director may, at any given time during the course of the Work, stop Contractor and construction employees from entering the Institution, order their immediate departure or instruct them to remain in a designated location due to an emergency security situation occurring at the Institution.
 - .1 Should this occur, Contractor's Superintendent shall obtain the name of the CSC staff member issuing the order, note the date and time when the notification was received and immediately obey the order as quickly as possible.

- .2 Advise the Departmental Representative within 24 hours of receipt of such notification from the Institution.

1.23 CONTACT WITH INMATES

- .1 Unless specifically authorized, it is forbidden to come into contact with inmates, to talk with them, to receive objects from them or to give them objects. Any construction employee doing any of the above will be removed from the site and his security clearance revoked.
- .2 Note that cameras are not allowed on CSC property.
- .3 Notwithstanding the above, should Director approve the use of cameras for work purposes, it is strictly forbidden to take pictures of inmates, CSC staff members or of any part of the Institution other than those required as part of the Work.

1.24 COMPLETION OF THE WORK

- .1 Prior to takeover and occupancy of the facility or premises by CSC, remove all leftover material, waste, tools and equipment that are not specifically required to complete the Work or which are to remain at the Institution as part of the Work.

END OF SECTION

1.1 REVIEWS AND INSPECTIONS

- .1 Give timely notice requesting reviews and inspection of Work designated for special tests, inspections or approvals by Departmental Representative or by inspection authorities having jurisdiction.
- .2 Furnish labour and facilities to provide access to work being inspected, tested and reviewed.
- .3 In accordance with the General Conditions, the Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with the Project Documents.
- .4 If Contractor covers or permits to be covered Work designated for tests, inspections, reviews or approvals before such is made, uncover Work until particular inspections, tests or reviews have been completed and until such time as Departmental Representative gives permission to proceed.
- .5 Pay costs to uncover and make good work disturbed by inspections and tests.

1.2 TESTING

- .1 Tests on materials, equipment and building systems, as specified in the various sections of the specifications, is the responsibility of the Contractor except where stipulated otherwise.
 - .1 Provide all necessary instruments, equipment and qualified personnel to perform test.
 - .2 At completion of test, submit copies of test report in accordance with Section 01 33 00.
- .2 Unspecified tests may also be made by the Departmental Representative, at the discretion of the Departmental Representative. The costs of these tests will be borne by the Departmental Representative.
- .3 Where tests reveal work not in accordance with contract requirements, the Contractor shall pay costs for additional tests incurred by the Departmental Representative as required to verify acceptability of corrected work.

1.3 ACCESS TO WORK

- .1 Facilitate Departmental Representative's access to Work. If part of Work is being fabricated at locations other than construction site, coordinate to allow access to such Work when it is in progress.
- .2 Furnish labour and facility to provide access to the work being reviewed, inspected and tested.
- .3 Co-operate to facilitate such reviews, inspections and tests.

1.4 REJECTED WORK

- .1 Remove and replace defective Work, whether result of poor workmanship, use of defective or damaged products and whether incorporated in Work or not, which has been identified by Departmental Representative as failing to conform to Project Documents.
- .2 Make good damages to existing or new substrates and finishes resulting from removal or replacement of defective work.

END OF SECTION

1.1 RELATED SECTIONS

- .1 Section 01 14 00: Work Restrictions
- .2 Section 01 35 59: Security Requirements at Correctional Service Canada Facilities
- .3 Section 01 74 11: Cleaning

1.2 SITE ACCESS AND PARKING

- .1 Use only those access routes as designated by Departmental Representative to access work areas of site.
- .2 See Section 01 35 59 for requirements on parking of Contractor and worker vehicles and for placement of storage sheds on site.
- .3 Make good damage resulting from Contractors' use of existing roads, asphalted areas and lawns on site. Make repairs only under favourable and suitable weather conditions.

1.3 BUILDING ACCESS

- .1 Use only those approved doors, corridors and stairwells within building, as designated by Departmental Representative.

1.4 MATERIAL STORAGE AND SITE TRAILORS

- .1 No space exist inside buildings for storage of materials and equipment.
- .2 One trailer may be placed on site for material storage and office. Locate where designated by Departmental Representative.
- .3 Minimize the quantity of materials stored on site at any given time.
 - .1 Do not encumber site and work areas with large quantities of stored materials.
 - .2 Free-standing stockpiles of materials and debris on exterior grounds of site is not permitted.

1.5 WASTE DUMPSTERS

- .1 Provide wheeled carts and other suitable equipment to remove demolition debris and waste from interior of building at end of each work shift.

1.6 INTERIOR DUST CONTROL

- .1 Develop and implement a Dust Control Plan, as an integral part of the Work.
 - .1 The Plan shall indicate protective measures and work procedures to be followed to minimize the creation of dust and dirt, stop their propagation to other areas of the building and for cleaning and reinstatement of operational during the course of the Work.
 - .2 The Plan shall be in writing. Submit and discuss with Departmental Representative before proceeding with work to determine the best possible approaches to meet the Plan objectives.
 - .3 Revise Plan as work progresses to address changes in work requirements.
- .2 Dust control measures shall include:
 - .1 evaluating the various dust generating work activities to be undertaken and the physical layout of each room and work area.
 - .2 developing specifically tailored strategy to control dust for each work area.
 - .3 pre-determining the extent and location of dust barriers and protective devices needed to confine dust and to maintain air quality in Occupied areas.
 - .4 obtaining Departmental Representative's approval of proposed control measures for major dust generating activities.
- .3 Incorporate within Plan the following minimum requirements:
 - .1 Provide full height dustproof partition to fully enclose the room or area where work will be performed for each work shift.
 - .2 Construct partition of minimum 10 mil polyethylene sheathing, installed tightly to abutting walls, floor and roof deck, sealed with continuous duct tape along all edges and seams and supported with 38 x 89 wood framing as required to maintain the integrity of seals. Overlap seams by 150 mm.
 - .3 Use compressible neoprene gaskets at locations where duct tape cannot provide an effective seal.

- .4 Do not terminate partition at the underside of a suspended ceiling leaving the above ceiling space open to other rooms.
 - .5 Provide a dust-tight access door in partition by the use of two overlapping and weighted poly sheet curtains.
 - .6 Provide additional polyethylene seals over doorways, windows and other wall openings in work area.
 - .7 Disassemble and temporarily move employee workstations, desks, office equipment and other furnishings in work area to protect them against damage.
 - .8 Provide fabric drop sheets and other protective devices, such as plywood, over carpet, office equipment and furnishings which cannot be moved from work area.
 - .9 Assist facility staff in moving computers and other IT equipment from work areas. Provide 24 hour advance notice to Departmental Representative of specific work shifts where such equipment must be disconnected and moved.
 - .10 Shut down ventilation system and seal diffusers, grilles, ducts etc... to stop dust spread. Coordinate shut down with Facility Manager.
-
- .4 At end of each work shift:
 - .1 Remove protective covers, surplus materials, debris, tools and equipment from inside the building.
 - .2 Reassemble workstations, reinstall office equipment and furnishings displaced by work and make area operational.
 - .3 Clean area and premises as specified in Section 01 74 11.

1.7 SANITARY FACILITIES

- .1 Contractor is responsible for providing sanitary facilities for own forces during the course of the Work.

1.8 POWER AND COMMUNICATIONS

- .1 Power supply is available and will be provided for construction usage at no cost.
 - .1 Make arrangements for the use of such services through the by Departmental Representative.
 - .2 by Departmental Representative will designate each location of existing power source to which connections can be made to obtain temporary power service.
 - .3 Connect to existing power supply in accordance with Canadian Electrical Code.

1.9 WATER SUPPLY

- .1 Water supply is available on site and will be provided for construction usage at no cost. Make arrangements for the use and transportation of such services to work area through the Departmental Representative.

1.10 SCAFFOLDING

- .1 Erect and maintain scaffolding in rigid, secure and safe manner. Erect independent of walls.

1.11 HEATING AND VENTILATION

- .1 Existing heating system may be used for construction purposes within buildings.
- .2 Shut down air distribution system in work areas to stop spread of dust and fumes beyond the immediate work area(s).
- .3 Ventilate work areas and enclosed spaces as required to:
 - .1 Facilitate progress of work.
 - .2 Provide adequate ventilation to meet health regulations for safe working environment.
 - .3 Prevent accumulations of dust, fumes, mists, vapours or gases within building.
 - .4 Prevent harmful accumulation of hazardous substances into atmosphere.
 - .5 Dispose of exhaust materials in manner that will not result in harmful exposure to persons.
- .4 Continue operation of ventilation and exhaust system for time after cessation of work process to assure removal of harmful contaminants.
- .5 Maintain strict supervision of operation of temporary ventilating equipment to:
 - .1 Conform with applicable codes and standards.
 - .2 Enforce safe practices.
 - .3 Prevent abuse of services.

END OF SECTION

PART 1. GENERAL

1.1 DESCRIPTION OF WORK

1. Install one (1) 10,000 L capacity double wall steel aboveground fuel oil storage tank to serve as temporary fuel oil storage system throughout the project construction period.
2. Install fuel oil supply (FOS) and fuel oil return (FOR) piping from temporary aboveground fuel oil storage tank to connect to existing "Tank 2 System" FOS and FOR, as indicated, to form a complete fuel oil transfer system.
3. Install temporary concrete slab for temporary aboveground fuel oil storage tank on top of asphalt, as indicated.
4. Install fencing c/w gates to surround the fuel oil tank storage area.
5. Acquire all permits required and register installation as required by code and local authority having jurisdiction. This trade shall bear all costs associated with permits and registrations.
6. Perform aboveground fuel oil tank system inventory control as required by code and local authority having jurisdiction.
7. Perform aboveground fuel oil tank system monitoring.
8. Remove fuel oil storage tank, concrete slab, fencing and piping. Restore temporary storage site to existing conditions after removal of tank.

1.2 INSTALLATION AND REMOVAL

- .1 All work associated with installation and removal of aboveground fuel oil storage tank, fuel oil supply piping, and fuel oil return piping, shall be done in accordance with all relevant regulations and guidelines, including, but not limited to:
 - .1 the *Petroleum Management Regulations* made under *Section 25 and 84 of the N.S. Environment Act*,

- .2 CSA B139-04 Installation Code for Oil Burning Equipment,
 - .3 National Fire Code 2010.
 - .4 Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations June 2008,
 - .5 CCME Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products 2003,
 - .6 National Building Code 2010, and
 - .7 local authority having jurisdiction.
- .2 Waste handling to be done in accordance with section 01 74 21 - Construction/Demolition Waste Management and Disposal.

1.3 SUBMITTALS

- .1 Submit to Departmental Representative, work plan for the provision of a temporary fuel oil storage system.
- .2 Work plan to include:
 - .1 List of equipment and accessories.
 - .2 Documentation of manufacturing standards of equipment and accessories.
 - .3 Piping schematic showing final installation details such as tie-ins, capped-off pipes and locations of wall/ floor penetrations.
 - .4 Proposed piping support method.
 - .5 Final tank location and orientation relative to Building A5 and the new oil storage system.
 - .6 Construction schedule indicating the following milestones:
 - .1 Installation.
 - .2 Start-up.
 - .3 Decommissioning.
 - .4 Restoration of temporary fuel oil storage site to existing conditions.
- .3 Contractor to obtain approval from Departmental Representative prior to installation of temporary fuel oil storage system and accessories.

PART 2. PRODUCTS

2.1 ABOVEGROUND FUEL OIL STORAGE TANK

- .1 10,000 L (2,200 Imp. Gal.) capacity, shop fabricated, aboveground horizontal, double walled steel (360o), vacuum monitored storage tank. Manufactured in accordance with ULC S601 Code.
 - .1 Exterior finish: Blast cleaned to SSPC-SP6 with one coat of grey primer and one finish coat of white epoxy enamel.
 - .2 Tank to be complete with:
 - .1 End supports fabricated from wide flange designed to support tank.
 - .2 Lifting lugs.
 - .3 Emergency vents.
 - .4 Dipstick and gauge chart.
 - .5 Normal vent c/w riser pipe.
 - .6 Access stairs c/w handrail and platform.
 - .7 Level indicator c/w level monitor.
 - .8 Vacuum monitor.
 - .9 Overfill spill container c/w locking fill cap.
 - .10 Documentation and/or certification indicating equipment is suitable for intended use.

2.2 TANK ACCESSORIES

- .1 Anti-siphon valves
 - .1 Heavy bronze body with oil-proof gasketing, spring-loaded poppet, composition seat and dashpot.
- .2 Overfill prevention valves
 - .1 ULC listed.
 - .2 Materials:
 - .1 Valve body, adaptor and collar: cast aluminum.
 - .2 Poppet: cast aluminum, hard-coated.
 - .3 Cam: stainless steel.
 - .4 Follower: brass.
 - .5 Shaft: zinc-plated.
 - .6 Float: closed-cell nitrile.
 - .3 Fully adjustable.
 - .4 690 kPa (100 PSI) pressure rated with low pressure

drop.

- .3 Open atmospheric vents
 - .1 Materials: Aluminum body with 40-mesh brass screen.
 - .2 Attach to top of vent line with set screws.

2.3 CONCRETE

- .1 .1 In accordance with Section 03 30 00 - Cast-in-Place Concrete, and as indicated on drawings.

2.4 PIPING, VALVES AND FITTINGS

- .1 .1 Schedule 40 piping, fittings and valves in accordance with Section 33 56 13 - Aboveground Fuel Tanks, Part 2.4.

2.5 OVERFILL PROTECTION

- .1 .1 Vent whistle-fill fitting.
 - .1 50 mm whistle-fill fitting mounted on tank vent pipe to give whistle sound during filling until risk of overfilling.

2.6 LEVEL GAUGING

- .1 .1 Tank gauging stick: to manufacturer's standard.
- .2 .2 Mechanical level gauge:
 - .1 Mechanical clock gauge with metric face for measuring liquid level in aboveground storage tank.
 - .2 Vapour tight construction.
 - .3 Stainless steel float and cable, aluminum body.
 - .4 360° degree swivel for adjustable orientation.
 - .5 Maximum measurement shall be at least 3,600 mm.
 - .6 Gauge suitable for reading level within 3mm accuracy at a distance of 6 meters from gauge.
 - .7 Provide gauge chart for horizontal tank. Volume shall be in litres and depth shall be in 1 cm increments.
 - .8 Provide protection from weather and UV-radiation.

2.7 FENCING

- .1 In accordance with Section 32 31 00 - Chain Link Fence.

PART 3. EXECUTION

3.1 ABOVEGROUND FUEL TANK AND ACCESSORIES

- .1 .1 Install tank and accessories in accordance with CAN/CSA-B139, National Fire Code of Canada, CCME PN 1326 and manufacturer's recommendations.
- .2 Position tank using lifting lugs and hooks, and where necessary use spreader bars. Do not use chains in contact with tank walls.
- .3 Install tanks using installers certified by Nova Scotia Department of Environment.
- .4 Provide certification of installation to Departmental Representative.
- .5 Test tanks for leaks to requirements of authority having jurisdiction.
- .6 Locate tank to:
 - .1 maintain at least minimum clearances from buildings as dictated by the National Fire Code of Canada, local authority having jurisdiction, and as indicated on drawings.
 - .2 minimize interference with construction of new fuel oil tanks, new infrastructure, and piping.
 - .3 ensure easy-access filling of tank.

3.2 ABOVEGROUND FUEL PIPING

- .1 Install temporary FOS and FOR piping to minimize interference with construction of new fuel oil tanks, associated infrastructure and piping.
- .2 Provide pipe supports in accordance with Section 23 05 29 - Hangers and Supports, National Plumbing Code, National Fire Code and National Building Code.

- .3 Piping shall be supported so that they are not in direct contact with the ground.

3.3 LEVEL GAUGE SYSTEM

- .1 Provide leak and vapour proof caulking at connections.
- .2 Calibrate system.
- .3 Installation: Follow manufacturer's instructions.

3.4 ANTI-SIPHON VALVE

- .1 Locate in a vertical position at the highest point in supply line with no part of the line between the valve and the tank below the maximum oil storage level. Spring is to be with appropriate tension for elevation.
- .2 Installation: Follow manufacturer's instructions.

END OF SECTION

1.1 RELATED SECTIONS

- .1 Section 01 14 10: Scheduling and Management of Work.
- .2 Section 01 35 28: Health and Safety Requirements.
- .3 Section 01 50 00: Temporary Facilities.

1.2 GENERAL

- .1 Use new material and equipment unless otherwise specified.
- .2 Within 7 days of written request by Departmental Representative, submit the following information for any materials and products proposed for supply:
 - .1 Name and address of manufacturer
 - .2 Trade name, model and catalogue number
 - .3 Evidence of Compliance with specified standards
 - .4 Performance, descriptive and test data
 - .5 Manufacturer's installation or application instructions;
 - .6 Evidence of arrangements to procure
 - .7 Evidence of manufacturer delivery problems or unforeseen delays
- .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.

1.3 PRODUCT QUALITY & REFERENCED STANDARDS

- .1 Contractor is responsible for submitting relevant technical data and independent test reports to confirm whether a product or system proposed meets the project requirements and specified standards.
- .2 Final decision as to whether a product or system meets contract requirements rests solely with the Departmental Representative in accordance with the General Conditions of the Contract.

1.4 MANUFACTURERS INSTRUCTIONS

- .1 Unless otherwise specified, comply with the manufacturer's latest printed instructions for materials and installation methods to be used. Obtain written instructions directly from manufacturers.
- .2 Notify Departmental Representative in writing of conflicts between these specifications and the manufacturer's instructions. The Departmental Representative will designate which document is to be followed.

1.5 AVAILABILITY

- .1 Immediately notify Departmental Representative in writing of material delivery problems from manufacturer. Provide support documentation per clause 1.1.2 above.

1.6 WORKMANSHIP

- .1 Ensure quality of work is of the highest standard, executed by workers experienced and skilled in the respective duties for which they are employed.
- .2 Remove unsuitable or incompetent workers from site in accordance with the General Conditions of the Contract.
- .3 Ensure cooperation of workers in laying out work. Maintain efficient and continuous supervision on site at all times.
- .4 Coordinate work between trades and sub-trades.
- .5 Coordinate placement of openings, sleeves and accessories.

1.7 ROUGHING-IN

- .1 Be responsible for correct roughing-in and hook-up of equipment and fixtures.

1.8 FASTENINGS - GENERAL

- .1 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur.

- .2 Use heavy duty commercial grade fasteners of type as recommended by manufacturer of material being fastened.
- .3 Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors and spacers for exterior work and in humid interior areas.
- .4 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage.
- .5 Keep exposed fastenings to minimum, space evenly and lay out neatly.
- .6 Fastenings which cause spalling or cracking of material to which anchorage is made, are not acceptable.
- .7 Do not use explosive actuated fastening devices unless approved by Departmental Representative. See section 01 35 28 on Health and Safety in this regard.
- .8 Use lock-tight washers, gaskets and resilient washers where vibrations occur or where vibration is anticipated.

1.9 FASTENINGS - EQUIPMENT

- .1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for the service for which they are employed.
- .2 Use heavy hexagon heads, semi-finished unless otherwise specified.
- .3 Bolts may not project more than one diameter beyond nuts.
- .4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur and, use resilient washers with stainless steel.

1.10 STORAGE, HANDLING AND PROTECTION

- .1 See Section 01 50 00 regarding site storage restrictions.
- .2 Deliver, handle and store materials in manner to prevent deterioration and soiling in accordance with manufacturer's instructions.

- .3 Deliver to site in original undamaged containers with manufacturer's seals and labels intact. Do not remove from packaging or handling until required in Work.
- .4 Provide additional protective cover where manufacturer's packaging is insufficient to provide adequate protection.
- .5 Store products subject to damage from weather in weatherproof enclosures.
- .6 Store cementitious products clear of earth or concrete floors, and away from walls.
- .7 Immediately remove damaged and rejected materials from site.
- .8 Touch-up damage to factory finished surfaces. Use touch-up materials to match factory finish. Do not paint over or otherwise conceal manufacturers name plates or equipment identification tags on new or existing equipment.

END OF SECTION

1.1 RELATED SECTIONS

- .1 Section 01 50 00: Temporary Facilities

1.2 GENERAL

- .1 Conduct cleaning and disposal operations in compliance with local ordinances and anti-pollution laws.
- .2 Store volatile waste in covered metal containers, and remove from premises at the end of each working day.
- .3 Provide adequate ventilation during the use of volatile or noxious substances. Use of building ventilation systems is not permitted for this purpose.
- .4 The work outlined in this section applies to those areas of the Facility which have been affected by the execution of the work of this Contract.

1.3 MATERIALS

- .1 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning product manufacturer.

1.4 CLEANING DURING CONSTRUCTION

- .1 Maintain the work areas in a tidy condition, free from accumulation of material, waste, debris, dirt and dust. Conduct cleaning on a daily basis.
- .2 Keep building entrances, corridors, stairwells and occupied areas in a clean dust free condition at all times. Conduct thorough cleaning of these areas at the end of each work shift when used by workers or affected by the Work.
- .3 Provide on-site containers for collection of waste materials and debris. Coordinate location of on-site containers with Departmental Representative and Institution Director.
- .4 Use separate collection bins, clearly marked as to purpose, for source separation and recycling of waste and debris in accordance with waste management requirements specified.

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- .5 Remove waste and debris from work areas on a daily basis.
 - .6 No waste dumpsters will be allowed to remain on site inside the security perimeter of the Institution.
 - .7 Schedule cleaning and vacuuming operations as a integral part of work shift function.
 - .8 Schedule cleaning operations so that resulting dust, debris and other contaminants will not contaminate wet, newly painted surfaces or building systems.
 - .9 Provide dust barriers, dividers, seals on doors and employ other dust control measures as required to ensure that dust and dirt, generated by work, are not transmitted to other areas of building. Should dust migrate into interior occupied areas; employ such means as necessary to immediately clean contaminated surfaces.
 - .1 See Section 01 50 00 for requirements on dust control and for erection of dust partitions.
 - .10 Immediately clean dust, dirt, smears, scuffs and soiled surfaces in resulting from the Work.
 - .1 Perform cleaning, dusting and washing operations, carpet vacuuming (including shampooing) and floor washing as necessary to thoroughly clean soiled surfaces to pre-construction condition.

1.5 CLEANING OF OCCUPIED AREAS

- .1 Clean interior occupied areas at end of each work shift which have been dirtied or soiled by the Work or by workers when used to gain access to work areas.
- .2 Cleaning of Occupied Areas to include; as a minimum:
 - .1 Washing of walls, floors and other surfaces dirtied or smeared.
 - .2 Vacuuming carpets.
 - .3 Dusting and vacuuming of workstations, desk tops, chairs and other office furnishings.
- .3 Use competent persons experienced in commercial cleaning functions.
 - .1 Ensure that personnel arrive at an appropriate times near the end of each work shift to conduct required cleaning before Facility employees arrive for their work.

- .2 Be present on premises for 1 additional hour after Contractor's off-hour work shift has terminated to address any complaints and concerns from Facility staff on the degree of cleanliness required and to perform additional cleaning as needed.

1.6 FINAL CLEANING

- .1 In preparation for acceptance of the project on an Interim or Final Certificate of Completion, perform final cleaning of areas and surfaces affected by the Work.
- .2 Remove grease, dust, dirt, stains, labels, fingerprints, marks and other foreign materials, from finished surfaces.
- .3 Replace items with broken pieces, scratches or disfigured.
- .4 Clean lighting reflectors, lenses, and other lighting surfaces.
- .5 Vacuum clean and dust building interiors, behind grilles, louvers and screens.
- .6 Inspect finishes, fitments and equipment. Ensure specified workmanship and operation.
- .7 Remove debris and surplus materials from crawl areas, roof areas and other accessible concealed spaces.

END OF SECTION

1.1 DEFINITIONS

- .1 Hazardous Material: Product, substance, or organism that is used for its original purpose, and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect the health of persons, animals, or plant life when released into the environment.

1.2 WASTE MANAGEMENT

- .1 Incorporate environmental and sustainable practices in managing waste resulting from work.
- .2 Divert as much waste as possible from landfills.
- .3 Coordinate work of subtrades and subcontractors to ensure all possible waste reduction and recycling opportunities are taken. Follow waste management requirements specified.
- .4 Reduce waste during installation of new materials. Undertake to optimize full use of materials and minimize waste.
- .5 Develop procedures to reduce quantity of waste generated by construction such as delivering materials to site with minimal packaging etc.
- .6 Provide on-site facilities to collect, handle and store anticipated quantities of reusable, salvageable and recyclable materials. Coordinate facilities with Departmental Representative and Institution Directori9.
- .7 During demolition and removal work, separate materials and equipment at source, carefully dismantling, labeling and stockpiling like items for the following purposes:
 - .1 Reinstallation into the work where indicated.
 - .2 Salvaging reusable items not needed in project which Contractor may sell to other parties.
 - .3 Sending as many items as possible to locally available recycling facility.
 - .4 Segregating remaining waste and debris into various individual waste categories for disposal in a "non-mixed state" as recommended by waste processing/landfill sites.
- .8 Separate product packaging and containers from the general waste stream. Send to recycling facility or return to supplier/manufacturer.
- .9 Recycle leftover and remnant material whenever possible.
- .10 Establish methods whereby hazardous and toxic materials, and their containers, used on site are properly handled, stored and disposed

of in accordance with applicable federal, provincial and municipal laws and regulations.

1.3 DISPOSAL REQUIREMENTS

- .1 Burying or burning of rubbish and waste materials is prohibited.
- .2 Do not dispose volatile materials, such as mineral spirits, oil, paint, and other hazardous materials into waterways, storm, or sanitary sewers. Abide by applicable federal, provincial and municipal laws and regulations.
- .3 Dispose of waste only at authorized waste processing facilities or landfill sites approved by authority having jurisdiction.
- .4 Contact the authority having jurisdiction prior to commencement of work, to determine what, if any, demolition and construction waste materials have been banned from disposal in landfills and at transfer stations. Take appropriate action to isolate such banned materials at site of work and dispose of in strict accordance with federal, provincial and municipal regulations.
- .5 Transport and dispose of waste intended for waste processing plant or landfill facility in separated condition and to Operator's rules and recommendations in support of their effort to recycle, reduce and divert certain waste stream from general landfill.
- .6 Collect, bundle and transport salvaged materials to be recycled in separated categories and condition as directed by recycling facility. Ship materials only to approved recycling facilities.
- .7 Sale of salvaged items by Contractor to other parties is not permitted on the work site.

END OF SECTION

1.1 SECTION INCLUDES

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

1.2 RELATED SECTIONS

- .1 Section 01 78 00 - Closeout Submittals.

1.3 INSPECTION AND DECLARATION

- .1 Contractor's Inspection: Coordinate and perform an inspection and check of all Work in concert with sub-trades. Identify and correct deficiencies, defects, repairs and perform outstanding items to complete the work in conformance with Project Documents.
 - .1 Notify Departmental Representative in writing when deficiencies from Contractor's inspection have been rectified and that the Work is deemed to be complete and ready for Departmental Representative's review of the completed work.
- .2 Departmental Representative's Review: Accompany Departmental Representative during all interim and final reviews of the Work.
 - .1 Address defects, faults and outstanding items of work identified by such inspections.
 - .2 Advise Departmental Representative when deficiencies identified have been rectified.
 - .3 Note that Departmental Representative will not issue a Certificate of Substantial Performance of the work until such time as the Contractor performs the following work and turns over the specified documents
 - .1 Project record as-built documents
 - .2 Final Operations and Maintenance Manuals
 - .3 Maintenance materials, parts and tools
 - .4 Compliance certificates from applicable authorities
 - .5 Reports resulting from designated tests
 - .6 Demonstration and training complete with user manuals
 - .7 Manufacturer's Guarantee certificates
 - .8 Testing, adjusting and balancing of equipment and systems complete with submission of test reports
 - .9 Commissioning of equipment and systems specified
 - .4 Correct discrepancies before Departmental Representative will issue the Certificate of Completion.

END OF SECTION

1.1 SECTION INCLUDES

- .1 Project Record Documents.
- .2 Operations and Maintenance data.

1.2 REFERENCED STANDARDS

- .1 Canadian Environmental Protection Act, Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations, 2008 (CEPA)

1.3 RELATED SECTIONS

- .1 Section 01 77 00 - Closeout Procedures
- .2 Section 01 33 00 - Submittal Procedures

1.4 SUBMITTALS

- .1 Two copies of project drawings and specifications will be provided to the contractor, specifically for "as-built" purposes.
- .2 Maintain one set of the project drawings, and specifications at site to record actual "as-built" site conditions.
- .3 Maintain project up-to-date, real time as-built drawings and specifications in good condition and make available for review by the Departmental Representative upon request.
- .4 As-Built Drawings:
 - .1 Record changes in red ink on the prints. Retain the services of a Draftsperson and Professional Engineer licensed to practice in the province of Nova Scotia. Generate CAD drawings reflecting these changes.
 - .2 All drawings of both sets shall be stamped "As-Built Drawings" and be signed and dated by the Contractor. The same drawings shall be stamped and signed by a Professional Engineer as per CEPA 34.
 - .3 Submit both sets to Departmental Representative prior to application for certificate of Substantial Performance.

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- .4 Show all modifications, substitutions and deviations from what is shown on the project drawings or in the specifications.
 - .5 Record following information:
 - .1 Location of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of structure
 - .2 Field changes of dimension and detail
 - .3 Location of capped or terminated services or utilities
 - .4 Chases for mechanical, electrical and other services
 - .5 Reflected ceiling plan condition showing finished layout of ceiling-mounted services and devices
 - .6 Plumbing, heating, air conditioning, ventilation, sprinkler and electrical services moved or affected by the work: all to be dimensioned and referenced to building columns or load bearing walls
 - .7 Design elevations, sections, floor plans and details, dimensioned and detailed to show finished installation conditions
 - .8 Additional details produced by the Departmental Representative during the course the Work to supplement or to change existing design drawings;
 - .9 Addenda, Change Orders or site instructions issued during the Work documenting accurately and consistently the changed condition as it applies to affected drawing details;
 - .10 Manufacturer, trade name, and catalogue number of each product actually installed, particularly those items substituted from that specified.
 - .11 Other items as required by CEPA 34.
 - .5 As-built Specifications: legibly mark in red each item to record actual construction, including:
 - .1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly items substituted from those specified.
 - .2 Changes made by Addenda, Change Orders and Site Instruction.
 - .3 Mark up both copies of specifications; stamp "As-Built", sign and date similarly to drawings per above clause.
 - .6 Maintain As-Built documents current as the contract progresses. Departmental Representative will conduct reviews of the documents on a regular basis.
 - .7 The contractor shall be required to fill out and turn in to Departmental Representative the completed asset data collection forms for each new piece of equipment installed and/or removed.

- .8 "Dismantling, Decommissioning or Deconstruction Notice" to be filled out for each piece of equipment removed that contains Halocarbon.
- .9 Provide scanned copy of the red line as-builts to Departmental Representative.

1.5 REVIEWED SHOP DRAWINGS

- .1 Compile full set of reviewed shop drawings for inclusion into each copy of the O&M Manuals specified.

1.6 OPERATIONS & MAINTENANCE MANUAL

- .1 Definition: an organized compilation of operating and maintenance data including detailed technical information, documents and records describing operation and maintenance of individual products or systems as, specified the in individual sections of the Project Specifications.
- .2 Manual Language: final manuals to be in English.
 - .1 Upon review and acceptance by the Departmental Representative, submit 4 final copies. Include 2 red line copies.
 - .2 Submit digital copy of O&M Manuals to departmental representative.
- .3 Submission Date: submit complete operation and maintenance manual to Departmental Representative 3 weeks prior to application for Certificate of Substantial Performance of the Work.
- .4 Binding:
 - .1 Assemble, coordinate, bind and index required data into Operation and Maintenance Manual.
 - .2 Use vinyl, hard covered, 3 "D" ring binders, loose leaf, sized for 215 x 280 mm paper, with spine pocket.
 - .3 Where multiple binders are needed, correlate data into related consistent groupings.
 - .4 Identify contents of each binder on spine, and Front Cover.
 - .5 Organize and divide data following same numerical system as the section numbers of the Specification.
 - .6 Dividers: separate each section by use of cardboard dividers and labels. Provide tabbed fly leaf for each individual product and system and give description of

-
- product or component.
 - .7 Type lists and notes. Do not hand write.
 - .8 Drawings, diagrams and manufacturers' literature must be legible. Provide with reinforced, punched binder tab. Bind in with text; fold larger drawings to size of text pages and insert in plastic sleeve.
- .5 Manual Contents:
- .1 Cover sheet containing:
 - .1 Date submitted.
 - .2 Project title, location and project number.
 - .3 Names and addresses of Contractor, and all Subtrades.
 - .2 Table of Contents: provide full table of contents in each binder(s), clearly indicate which contents are in each binder.
 - .3 List of maintenance materials.
 - .4 List of spare parts.
 - .5 List of special tools.
 - .6 Original or certified copy of warranties and product guarantees.
 - .6 Copy of approval documents and certificates issued by Inspection Authorities.
 - .7 Copy of reports and test results performed by Contractor as specified.
 - .8 Product Information (PI Data) on materials, equipment and systems as specified in various sections of the Project Specifications. Data to include:
 - .1 List of equipment including manufacturer's name, supplier, local source of supplies and service depot(s). Provide full addresses and telephone numbers.
 - .2 Nameplate information including equipment number, make, size, capacity, model number and serial number.
 - .3 Parts list.
 - .4 Installation details.
 - .5 Operating instructions.
 - .6 Maintenance instructions for equipment.
 - .7 Maintenance instructions for finishes.
 - .9 Contractor shall be familiar with Departmental Representative manual guidelines in Appendix A of this specification document.
- .6 Shop drawings:
- .1 Include complete set of reviewed shop drawings into each copy of the Operations and Maintenance Manuals.
 - .2 Fold and bind material professionally in a manner that corresponds with the specification section numbering system.
 - .3 When a large quantity of data is submitted, place into

separate binders of same size as O&M binders.

- .7 Equipment and Systems Data: the following list indicates the type of data and extent of information required to be included for each item of equipment and for each system:
- .1 Description of unit or system, and component parts. Give function, normal operation characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
 - .2 Panel board circuit directories: provide electrical service characteristics, controls, and communications.
 - .3 Include installed color coded wiring diagrams.
 - .4 Operating Procedures: include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
 - .5 Maintenance Requirements: include routine procedures and guide for trouble-shooting, disassembly, repair, and reassembly instructions, alignment, adjusting, balancing, and checking instructions.
 - .6 Servicing and lubrication schedule, and list of lubricants required.
 - .7 Manufacturer's printed operation and maintenance instructions.
 - .8 Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
 - .9 Provide installed control diagrams by controls manufacturer.
 - .10 Provide Contractor's coordination drawings, with installed color coded piping diagrams.
 - .11 Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
 - .12 Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
 - .13 Include test and balancing reports.
 - .14 Additional requirements as specified in individual specification sections.
 - .15 Refer to "Operations and Maintenance Manual" document attached for further requirements.

END OF SECTION

1.1 RELATED SECTIONS

- .1 Section 01 78 00: Operations and Maintenance Manual

1.2 DESCRIPTION

- .1 Demonstrate scheduled operation and maintenance of equipment and systems to Facility staff prior date of final inspection.
- .2 Departmental Representative will provide a list of persons to receive training.
- .3 Cooperate with the Departmental Representative in coordinating time and attendance of personnel with the manufacturer's training Representatives.

1.3 QUALITY CONTROL

- .1 Ensure that only personnel from own forces, Sub-trades or Suppliers who are competent and fully knowledgeable in the particular component, equipment or system installed are used to provide training and demonstrations.
- .2 When specified, obtain the manufacturer's authorized Representative to provide demonstration and instruction on the operation of equipment and systems and to provide a written report when completed.
- .3 Upon request, provide evidence of individual trainer's knowledge and qualifications.

1.4 SUBMITTALS

- .1 Submit training schedule indicating date and time of each training session, complete with a list of equipment and systems to be demonstrated. Submit Schedule 2 weeks in advance of designated date for Departmental Representatives review and acceptance.
- .2 Submit report within 1 week after completion of training sessions, certifying that demonstration and instructions have been satisfactorily completed.
 - .1 Indicate actual date and time when training was held and the list of persons present.

1.5 CONDITIONS FOR DEMONSTRATIONS

- .1 Before conducting demonstration and training sessions, ensure that equipment and systems have been inspected, tested, are fully operational and that performance verification and TAB have been carried out.
- .2 Provide copies of completed O&M manuals for use during demonstration and training sessions.

1.6 PREPARATION

- .1 Verify that conditions for demonstration and instructions comply with requirements.
- .2 Ensure that designated personnel are present.

1.7 DEMONSTRATION AND INSTRUCTIONS

- .1 Include the following as part of the demonstration and training:
 - .1 Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, and maintenance of each piece of equipment.
 - .2 Instruct personnel in phases of operation and maintenance using operation and maintenance manuals as the basis of instruction.
 - .3 Review contents of manual in detail to explain all aspects of operation and maintenance.
 - .4 Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instructions.
 - .5 Provide other specific training and instructions as specified in trade sections.

1.8 TIME ALLOCATED FOR INSTRUCTIONS

- .1 Observe the time period allocated for each item as specified. Provide additional time when required to ensure personnel fully understand all aspects of the information and instructions being provided. Allow for questions by participants.

END OF SECTION

1.1 SUMMARY

- .1 Section Includes:
 - .1 Description of overall structure of Cx Plan and roles and responsibilities of Cx team.

1.2 RELATED SECTIONS

- .1 Section 25 05 01: Controls General Requirements

1.3 REFERENCES

- .1 Public Works and Government Services Canada (PWGSC)
 - .1 PWGSC - Commissioning Guidelines CP.4 -3rd edition -03.
- .2 Underwriters' Laboratories of Canada (ULC)

1.4 GENERAL

- .1 Provide a fully functional system:
 - .1 Systems, equipment and components meet user's functional requirements before date of acceptance, and operate consistently.
 - .2 O&M personnel have been fully trained in aspects of installed systems.
 - .3 Complete documentation relating to installed equipment and systems.
- .2 Term "Cx" in this section means "Commissioning".
- .3 Use this Cx Plan as master planning document for Cx:
 - .1 Outlines organization, scheduling, allocation of resources, documentation, pertaining to implementation of Cx.
 - .2 Communicates responsibilities of team members involved in Cx Scheduling, documentation requirements, and verification procedures.
 - .3 Sets out deliverables relating to O&M, process and administration of Cx.
 - .4 Describes process of verification of how built works meets design requirements.
 - .5 Produces a complete functional system prior to issuance of Certificate of Substantial Completion.

- .1 Changes resulting from Client program modifications.
- .2 Design and construction changes, including Addenda, Change Orders and site instructions.
- .2 Revise, refine and update as required during construction phase. At each revision, indicate revision number and date.
- .3 Submit each revised Cx Plan to Departmental Representative for review and obtain written authorization.
- .4 Include testing parameters at full range of operating conditions and check responses of equipment and systems.

1.7 COMPOSITION, ROLES AND RESPONSIBILITIES OF Cx TEAM

- .1 Departmental Representative to maintain overall responsibility for project and is sole point of contact between members of commissioning team.
- .2 Project Manager will select Cx Team consisting of following members:
 - .1 Departmental Representative Design Quality Review Team: during construction, will conduct periodic site reviews to observe general progress.
 - .2 Departmental Representative Quality Assurance Commissioning Manager: ensures Cx activities are carried out to ensure delivery of a fully operational project including:
 - .1 Review of Cx documentation from operational perspective.
 - .2 Review for performance, reliability, durability of operation, accessibility, maintainability, operational efficiency under conditions of operation.
 - .3 Protection of health, safety and comfort of occupants and O&M personnel.
 - .4 Monitoring of Cx activities, training, development of Cx documentation.
 - .5 Work closely with members of Cx Team.
 - .3 Departmental Representative is responsible for:
 - .1 Monitoring operations Cx activities.
 - .2 Monitoring of Training Plan.
 - .4 Construction Team: contractor, sub-trades, suppliers and support disciplines, are responsible for construction/installation in accordance with contract documents, including:
 - .1 Testing.

- .2 TAB.
- .3 Performance of Cx activities.
- .4 Delivery of training and Cx documentation.
- .5 Assigning one person as point of contact with Departmental Representative and PWGSC Cx Manager for administrative and coordination purposes.
- .5 Contractor's Cx agent implements specified Cx activities including:
 - .1 Demonstrations.
 - .2 Training.
 - .3 Testing.
 - .4 Preparation, submission of test reports.
- .6 Property Manager: represents lead role in Operation Phase and onwards and is responsible for:
 - .1 Receiving facility.
 - .2 Day-To-Day operation and maintenance of facility.

1.8 Cx PARTICIPANTS

- .1 Employ the following Cx participants to verify performance of equipment and systems:
 - .1 Installation contractor and sub-trades:
 - .1 Equipment and systems except as noted.
- .2 Equipment manufacturer: equipment specified to be installed and started by manufacturer.
 - .1 To include performance verification.
- .3 Specialist sub-trades: equipment and systems supplied and installed by specialist sub-trades.
- .4 Specialist Cx agency:
 - .1 Possessing specialist qualifications and installations providing environments essential to client's program but are outside scope or expertise of Cx specialists on this project.
- .5 Ensure that Cx participants:
 - .1 Can complete work within scheduled time frames.
 - .2 Are available for emergency and troubleshooting services during the first year of operation by user for adjustments and modifications outside of responsibility of O&M personnel, including:
 - .1 Changes to EMCS control strategies beyond level of training provided to O&M personnel.

- .6 Provide names of participants to Departmental Representative and details of instruments and procedures to be followed for Cx 1 month prior to starting date of Cx for review.

1.9 EXTENT OF CX

- .1 Cx Structural and Architectural Systems:
 - .1 Architectural and structural:
 - .1 In-situ soils and imported bedding and fill materials.
 - .2 Exterior systems.
 - .3 Accessibility and operational safety.
 - .2 Commission mechanical systems and associated equipment:
 - .1 Plumbing systems
 - .1 Storm water systems.
 - .2 Oil interceptor.
 - .2 Seismic restraint and control measures.
 - .3 EMCS
 - .3 Commission electrical systems and equipment:
 - .1 Low voltage below 750 V:
 - .1 Low voltage equipment.
 - .2 Low voltage distribution systems.
 - .3 Electronic data and communications information systems.

1.10 DELIVERABLES RELATING TO O&M PERSPECTIVES

- .1 General requirements:
 - .1 Compile English documentation.
 - .2 Documentation to be computer-compatible format ready for inputting for data management.
- .2 Provide deliverables:
 - .1 Warranties.
 - .2 Project record documentation.
 - .3 Inventory of spare parts, special tools and maintenance materials.
 - .4 Maintenance Management System (MMS) identification system used.
 - .5 WHMIS information.
 - .6 MSDS data sheets.

- .7 Electrical Panel inventory containing detailed inventory of electrical circuitry for each panel board. Duplicate of inventory inside each panel.

1.11 DELIVERABLES RELATING TO THE CX PROCESS

- .1 General:
 - .1 Start-up, testing and Cx requirements, conditions for acceptance and specifications form part of relevant technical sections of these specifications.
- .2 Definitions:
 - .1 Cx as used in this section includes:
 - .1 Cx of components, equipment, systems, subsystems, and integrated systems.
 - .2 Factory inspections and performance verification tests.
- .3 Deliverables: provide:
 - .1 Cx Specifications.
 - .2 Startup, pre-Cx activities and documentation for systems, and equipment.
 - .3 Completed installation checklists (ICL).
 - .4 Completed product information (PI) report forms.
 - .5 Completed performance verification (PV) report forms.
 - .6 Results of Performance Verification Tests and Inspections.
 - .7 Description of Cx activities and documentation.
 - .8 Description of Cx of integrated systems and documentation.
 - .9 Training Plans.
 - .10 Cx Reports.
 - .11 Prescribed activities during warranty period.
- .4 Departmental Representative to witness tests.

1.12 PRE-CX ACTIVITIES AND RELATED DOCUMENTATION

- .1 Items listed in this Cx Plan include the following:
 - .1 Pre-Start-Up reviews by Departmental Representative prior to start up and rectification of deficiencies.
 - .2 Departmental Representative may monitor some of these pre-start-up reviews.
 - .3 Include completed documentation with Cx report.

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- .4 Conduct pre-start-up tests: conduct pressure, static, flushing, cleaning, and "bumping" during construction as specified in technical sections. To be witnessed by Departmental Representative and does not form part of Cx specifications.
 - .5 Include completed documentation in Cx report.
 - .2 Pre-Cx activities - ARCHITECTURAL AND STRUCTURAL:
 - .1 In-situ soil property confirmation.
 - .2 Fill material source quality confirmation.
 - .3 Bedding material source quality confirmation.
 - .3 Pre-Cx activities - MECHANICAL:
 - .1 Plumbing systems:
 - .1 "Bump" each item of equipment in its "stand-alone" mode.
 - .2 At this time, complete pre-start-up checks and complete relevant documentation.
 - .3 After equipment has been started, test related systems in conjunction with control systems on a system-by-system basis.
 - .2 EMCS:
 - .1 EMCS trending to be available as supporting documentation for performance verification.
 - .2 Perform point-by-point testing in parallel with start-up.
 - .3 Carry out point-by-point verification.
 - .4 Demonstrate performance of systems, to be witnessed by Departmental Representative prior to start of 30 day Final Acceptance Test period.
 - .5 Perform final Cx and operational tests during demonstration period and 30 day test period.
 - .6 Only additional testing after foregoing have been successfully completed to be "Off-Season Tests".

1.13 START-UP

- .1 Start up components, equipment and systems.
- .2 Equipment manufacturer, supplier, installing specialist sub-contractor, as appropriate, to start-up, under Contractor's direction.
- .3 Departmental Representative to monitor some of these start-up activities.
 - .1 Rectify start-up deficiencies.

- .4 Performance Verification (PV):
 - .1 Approved Cx Agent to perform.
 - .1 Repeat when necessary until results meet design requirements.
 - .2 Use procedures to suit project requirements.
 - .3 Departmental Representative reserves right to verify up to 30% of reported results.
 - .4 Failure of randomly selected item shall result in rejection of PV report or report of system startup and testing.

1.14 CX ACTIVITIES AND RELATED DOCUMENTATION

- .1 Perform Cx by specified Cx agency using procedures developed by Departmental Representative.
- .2 Departmental Representative to monitor Cx activities.
- .3 Upon satisfactory completion, Cx agency performing tests to prepare Cx Report using approved PV forms.
- .4 Departmental Representative to witness, certify reported results of, Cx activities.
- .5 Departmental Representative reserves right to verify a percentage of reported results at no cost to contract.

1.15 CX SCHEDULES

- .1 Prepare detailed Cx Schedule and submit to Departmental Representative for review at the same time as the project Construction Schedule. Include:
 - .1 Milestones, testing, documentation, training and Cx activities of components, equipment, subsystems, systems and integrated systems, including:
 - .1 Design criteria, design intents.
 - .2 Submission of list of instrumentation with relevant certificates: 21 days before start of Cx.
 - .3 Identification of deferred Cx.
 - .4 Implementation of training plans.
 - .5 Cx reports: immediately upon successful completion of Cx.
 - .2 Detailed training schedule to demonstrate no conflicts with testing, completion of project and hand-over.
 - .3 After acceptance, incorporate Cx Schedule into Construction Schedule.

- .4 Contractor, Contractor's Cx agent and Departmental Representative will monitor progress of Cx against this schedule.
- .2 After authorization/permission, incorporate Cx Schedule into Construction Schedule.
- .3 Contractor, Contractor's Cx agent, and Departmental Representative will monitor progress of Cx against this schedule.

1.16 CX REPORTS

- .1 Submit reports to Departmental Representative who will verify reported results.
- .2 Include completed and certified PV reports in properly formatted Cx Reports.
- .3 Before reports are accepted, reported results to be subject to verification by Departmental Representative.

1.17 ACTIVITIES DURING WARRANTY PERIOD

- .1 Cx activities must be completed before issuance of Interim Certificate. Certain Cx activities may be necessary during Warranty Period.

1.18 FINAL SETTINGS

- .1 Upon completion of Cx lock control devices in their final positions, indelibly mark settings marked and include in Cx Reports.

END OF SECTION