

SPECIFICATION

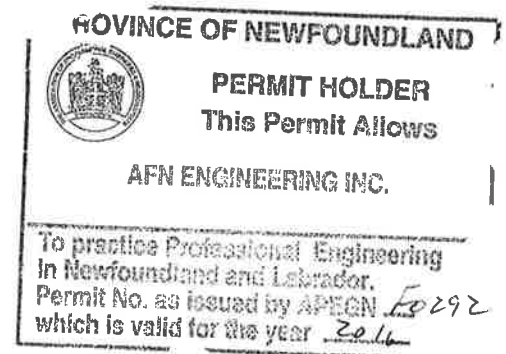
Refurbishment of the
Bacalhao Island Light Tower, NL
F6879-165009

PREPARED FOR

Fisheries and Oceans Canada

DATE

June 1, 2016
Revision 5



LIST OF DRAWINGS

Page 1

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

DRAWING NO

TITLE

02E1004C01901	Site Plan
02E1004C01902	Demolition Plan
02E1004C01903	New Work
02E1004S01901	Existing Elevation and Floor Plans Demolition
02E1004S01902	New Elevation and Floor Plans
02E1004S01903	Details

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

<u>Section</u>	<u>Title</u>	<u>Pages</u>
01 10 10	GENERAL INSTRUCTIONS	12
01 33 00	SUBMITTAL PROCEDURES	5
01 35 24	SPECIAL PROCEDURES ON FIRE SAFETY REQUIREMENTS	5
01 35 29	HEALTH AND SAFETY REQUIREMENTS	12
01 35 43	ENVIRONMENTAL PROCEDURES	4
01 50 00	TEMPORARY FACILITIES	1
01 56 00	TEMPORARY BARRIERS AND ENCLOSURES	1
01 74 11	CLEANING	1
01 78 00	CLOSEOUT SUBMITTALS	1
02 41 16	SITWORK, DEMOLITION AND REMOVAL	3
02 83 12	LEAD PAINT ABATEMENT MAXIMUM PRECAUTIONS	7
05 50 00	METAL FABRICATIONS	4
08 51 13	ALUMINUM WINDOWS	3
08 80 50	GLAZING	2
09 91 13	PAINTING	14

Appendix A: Analytical Data of Paint Sample

Appendix B: General Pictures

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.1 SCOPE

- .1 The work consists of the furnishing of all plant, labour, equipment and material for restoration of the Bacalhao Island Light Tower, NL, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of the Contract. The Site is on an isolated island and is only accessible by boat or helicopter. Approximate site coordinates are Latitude: 49.686889; Longitude: - 54.556833.

1.2 DESCRIPTION OF WORK

- .1 In general, work under this contract consists of, but will not necessarily be limited to, the following:

.1 Re-painting of the exterior galvanized steel catwalk railings (note that if the condition is such that a replacement is required, then the railings/landing/supports/etc. for the catwalk are to be replaced new at no additional contract cost) - Departmental Representative will be sole judge as to whether or not the catwalk components are to be replaced new (For Bidding, assume a full replacement is required). Where galvanized sections can remain, the general requirements will include pressure washing (or abrasive blasting) to remove all existing coatings that are on the steel surfaces. Power tool clean to SSPC-SP-11 to roughen the exposed galvanized surface and to remove all rust that has developed on the surface. Prime surface by applying 2 coats of Amerlock 2 Surface Tolerant Epoxy Coating (or approved equivalent) at 5-7 mils dry film thickness per coat. Apply one coat of Amershield High Solids Polyurethane coating (or

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

approved equivalent) at 3-5 mils dry film thickness. Weld access door shut to restrict future access to the catwalk, as noted on the drawing. Note that if aluminum sections are present, new paint requirements are the same as galvanized steel (preparation of the aluminum surface prior to painting is a light abrasive blast - "sandpaper finish").

.2 Re-painting of the cast iron steel tower (inside and outside). General requirements will include abrasive blast cleaning of the tower to remove all existing paint. All abrasive blasting to be near-white metal blast in accordance with SSPC-SP10. The SSPC-SP10's definition of a near-white metal blast clean requires the surface to be free of all visible oil, grease, dust, dirt, mill scale, rust, coating, oxides, corrosion products, and other foreign matter when viewed without magnification. The standard also provides requirements for "random staining" on the surface which shall not exceed five percent of each unit area of surface. The surface shall be cleaned of oil, grease, and dust after the near-white metal blasting procedure. Any blasted areas that show pitting are to be filled with Belzona 1111 Super Metal Paste Grade Metallic Filler (or approved equivalent). Pits should be filled flush with surrounding steel area prior to priming. Once all pitting has been addressed apply one coat of Amercoat 370 Epoxy (or approved equivalent) at 5 mils Dry Film Thickness. Apply one coat (by Plural Spray) of PPG Amerthane 490 Elastomeric Polyurea Hibrid Coating (or approved equivalent) at 80 Mils Dry Film Thickness

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

Apply one coat of PPG Amersfield High Solids Polyurethane (or approved equivalent) at 3 Mils Dry Film Thickness.

.3 Replacement of the glazing around the perimeter of the lantern room.

.4 Repair/re-installation/repainting of the weather vane at the top of the tower.

.5 Replacement of the steel grating on the windows, as noted on the drawings.

.6 Removal of the stairs/steps/landings on the interior of the tower and replacement new, as note don the drawings.

Do not proceed with any portion of the work until the Departmental Representative has approved the Contractor's written work plan. Note that lead paint is present on the structure and measures will have to be implemented in the Contractor's work plan to limit occupational exposure to lead (this includes a decontamination facility outside the enclosed work area consisting of a clean change room, dirty room and clean room). Work inside the enclosed work area is to contain negative air units (refer to specification section 02 83 12). All scaffolding used in the work is to bear the stamp of a professional engineer licensed by PEG-NL to practice in NL.

1.3 SITE OF WORK

- .1 Work will be carried out at Bacalhao Island, NL.

1.4 DATUM

- .1 Datum used for this project is Lowest Normal Tides (LNT). If requested by the Contractor, the Departmental Representative will establish a benchmark

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

prior to the start of deconstruction activities.

1.5 FAMILIARIZATION WITH SITE

- .1 Before submitting a bid, it is required that bidders visit the site and its surroundings to review and verify the form, nature and extent of the work, materials needed for the completion of the work, the means of access to the site, severity, exposure and uncertainty of weather, any accommodations they may require, and in general shall obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid or costs to do the work. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.
- .2 Contractors, bidders or those they invite to site are to review specification Section 01 35 29 - Health and Safety Requirements before visiting site. Take all appropriate safety measures for any visit to site, either before or after acceptance of bid.
- .3 Obtain prior permission from the Departmental Representative before carrying out such site inspection.

1.6 CODES AND STANDARDS

- .1 Perform work in accordance with the latest edition of the National Building Code of Canada, and any other code of provincial or local application including all amendments up to project bid closing date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

1.7 TERM ENGINEER

- .1 Unless specifically stated otherwise, the term Engineer where used in the Specifications and on the Drawings shall mean the Departmental Representative.

1.8 SETTING OUT
WORK

- .1 Set grades and layout work in detail from control points and grades established by Departmental Representative.
- .2 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated or as directed by Departmental Representative.
- .3 Provide devices needed to layout and construct work.
- .4 Supply such devices required to facilitate Departmental Representative's inspection of work.
- .5 Supply stakes and other survey markers required for laying out work.

1.9 COST BREAKDOWN

- .1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price.
- .2 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components as directed by Departmental

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

Representative.

- .3 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.
- .4 This will be a lump sum project. Individual work items will not be measured separately for payment.

1.10 WORK SCHEDULE

- .1 Submit within 7 work days of notification of acceptance of bid, a construction schedule showing commencement and completion of all work within the time stated on the Bid and Acceptance Form and the date stated in the bid acceptance letter.
- .2 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
- .3 As a minimum, work schedule to be prepared and submitted in the form of Bar (GANTT) Charts, indicating work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a reasonable plan for completion of project within designated time. Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .4 Submit schedule updates on a minimum bi-weekly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.
- .5 The schedule, including all updates, shall be to Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.
- .6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.

1.11 ABBREVIATIONS

- .1 Following abbreviations of standard specifications have been used in this specification and on the drawings:
 - CGSB - Canadian Government Specifications Board
 - CSA - Canadian Standards Association
 - NLGA - National Lumber Grades Authority
 - ASTM - American Society for Testing and Materials
- .2 Where these abbreviations and standards are used in this project, latest edition in effect on date of bid call will be considered applicable.

1.12 SITE OPERATIONS

- .1 Arrange for sufficient space adjacent to project site for conduct of operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. All

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

arrangements for space and access will be made by Contractor.

1.13 PROJECT
MEETINGS

- .1 Departmental Representative will arrange project meetings and assume responsibility for setting times and recording minutes.
- .2 Project meetings will take place on site of work unless so directed by the Departmental Representative.
- .3 Departmental Representative will assume responsibility for recording minutes of meetings and forwarding copies to all parties present at the meetings.
- .4 Have a responsible member of firm present at all project meetings.

1.14 PROTECTION

- .1 Store all materials and equipment to be incorporated into work to prevent damage by any means.
- .2 Repair or replace all materials damaged in transit or storage to the satisfaction of Departmental Representative and at no cost to Canada.

1.15 EXISTING
SERVICES

- .1 Where work involves breaking into or connecting to existing services, carry out work at times directed by governing authorities, with minimum of disturbance to site operations, and tenant operations.
- .2 Before commencing work, establish location and extent of service lines in area of active aid to navigation and notify Departmental Representative of findings.
- .3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .4 Provide temporary services when directed by Departmental Representative to maintain critical facility systems.
- .5 Provide immediate notification to Departmental Representative in the event of accidental service interruption to active aid to navigation.

1.16 DOCUMENTS REQUIRED

- .1 Maintain at job site, one copy each of the following:
 - .1 Contract Drawings
 - .2 Specifications
 - .3 Addenda
 - .4 Contract and any resulting amendments signed by contracting authority.
 - .5 Test Reports
 - .6 Copy of Approved Work Schedule
 - .7 Site specific Health and Safety Plan and other safety related documents.

1.17 PERMITS

- .1 Obtain and pay for all permits, certificates and licenses as required by Municipal, Provincial, Federal and other Authorities.
- .2 Provide appropriate notifications of project to municipal and provincial inspection authorities.
- .3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.
- .4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .5 Comply with all requirements, recommendations and advice by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance of related work.

1.18 CUTTING,
FITTING AND
PATCHING

- .1 Execute cutting, including excavation, fitting and patching required to make work fit properly.

1.19 ACCEPTANCE

- .1 Prior to the issuance of the Certificate of Substantial Performance, in company with Departmental Representative, make a check of all work. Correct all discrepancies before final inspection and acceptance.

1.20 WORKS
COORDINATION

- .1 Responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.
- .2 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. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
- .3 Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

responsibility of the General Contractor and shall be resolved at no extra cost to Canada.

1.21 CONTRACTOR'S
USE OF SITE

- .1 Responsible for arranging the storage of materials on or off site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the Contractor's expense, upon request by Departmental Representative.
- .2 Exercise care so as not to obstruct or damage public or private property in the area.
- .3 At completion of work, restore area to its original condition. Damage to ground and property will be repaired by Contractor. Remove all construction materials, residue, excess, etc., and leave site in a condition acceptable to Departmental Representative.

1.22 WORK
COMMENCEMENT

- .1 Mobilization to project site is to commence immediately after acceptance of bid and submission of Site Specific Safety Plan and insurance and bonding documentation, unless otherwise agreed by Departmental Representative.
- .2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed by Departmental Representative.
- .3 Weather conditions, short construction season, delivery challenges and the location of the work site may require the use of longer working days and additional

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

work force to complete the project within
the specified completion time.

- .4 Make every effort to ensure that
sufficient material and equipment is
delivered to site at the earliest possible
date after acceptance of bid and
replenished as required.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

PART 1 - GENERAL1.1 SECTION
INCLUDES

- .1 Product data.
- .2 Samples.
- .3 Certificates.

1.2 SUBMITTAL
GENERAL REQUIREMENTS

- .1 Submit to Departmental Representative for review submittals listed, including samples, certificates and other data, as specified in other sections of the Specifications. Note that any and all changes to the contract will have to be approved in writing by the Contracting Authority.
- .2 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay in 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.
- .3 Do not proceed with work until relevant submissions are reviewed by Departmental Representative.
- .4 Present product data, samples and mock-ups in SI Metric units.
- .5 Where items or information is not produced in SI Metric units, provide soft converted values.
- .6 Review submittals prior to submission to Departmental Representative. Ensure during review that necessary requirements have been determined and verified, required field measurements or data have been taken, and that

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

each submittal has been checked and co-ordinated 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.

.7 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.8 Verify field measurements and affected adjacent work and coordinate.

.9 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.

.10 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative's review.

.11 Submittal format: paper originals, or alternatively clear and fully legible photocopies of originals. Facsimiles are not acceptable, except in special circumstances pre-approved by Departmental Representative. Poorly printed non-legible photocopies or facsimiles will not be accepted and be returned for resubmission.

.12 Make changes or revision to submissions which Departmental Representative may require, consistent with Contract Documents and resubmit as directed by Departmental Representative. When resubmitting, notify Departmental Representative in writing of any revisions other than those requested.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .13 Keep one reviewed copy of each submittal document on site for duration of Work.

1.3 PRODUCT DATA

- .1 Product data includes drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 Submit sufficient copies of product data which are required by the General Contractor and sub-contractors plus 2 copies which will be retained by Departmental Representative. Ensure sufficient numbers are submitted to enable one complete set to be included in each of the maintenance manuals specified, if applicable.
- .3 Allow 10 calendar days for Departmental Representative's review of each submission.
- .4 Adjustments or corrections made on product data by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, advise Departmental Representative in writing prior to proceeding with Work.
- .5 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 product data are rejected and noted to be Resubmitted, do not proceed with that portion of work until resubmission and review of corrected product data, through same submission procedures indicated above.
- .6 Accompany each submission with transmittal letter, containing:

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .1 Date.
- .2 Project title and project number.
- .3 Contractor's name and address.
- .4 Identification and quantity of each product data and sample.
- .5 Other pertinent data.
- .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 approval 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 product data submission addresses.
 - .6 Details of appropriate portions of Work.
- .8 After Departmental Representative's review, distribute copies.
- .9 The review of samples and product data by the Departmental Representative or their delegated representative is for sole purpose of ascertaining conformance with general concept. This review shall not mean that the Departmental Representative approves the detail design inherent in the product data, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in product data or of responsibility for meeting all requirements of the construction and Contract Documents. Without restricting generality of foregoing, Contractor is

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of all sub-trades.

1.4 SCHEDULES,
PERMITS AND
CERTIFICATES

- .1 Upon acceptance of bid, submit to Departmental Representative copy of Work Schedule and various other schedules, permits, certification documents and project management plans as specified in other sections of the Specifications.
- .2 Submit copy of permits, notices, compliance Certificates received by Regulatory Agencies having jurisdiction and as applicable to the Work.
- .3 Submission of above documents to be in accordance with Submittal General Requirements procedures specified in this section.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.1 SECTION
INCLUDES

- .1 Fire Safety Requirements.
- .2 Hot Work Permit.

1.2 RELATED WORK

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

1.3 REFERENCES

- .1 Fire Protection Standards issued by Fire Protection Services of Human Resources Development Canada as follows:
 - .1 National Fire Code - Standard for Construction Operations - latest edition (http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/301/page00.shtml).
 - .2 National Fire Code - Standard for Welding and Cutting - latest edition (http://www.hrsdc.gc.ca/eng/labour/fire_protection/policies_standards/commissioner/302/page00.shtml).
 - .3 FCC standards, may also be viewed at the Regional Labour Canada Office located at Baine Johnson Centre, 10 Fort William Place, St. John's, NL, A1C 1K4; Telephone 1-800-641-4049; fax 1-709-772-5985.

1.4 DEFINITIONS

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

1.5 SUBMITTALS

- .1 Submit copy of Hot Work Procedures and sample of Hot Work permit to Departmental Representative for review, within five (5) calendar days after notification of acceptance of bid.
- .2 Submit in accordance with the Submittal

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

General Requirements specified in Section
01 33 00.

1.6 FIRE SAFETY
REQUIREMENTS

- .1 Implement and follow fire safety measures during Work. Comply with following:
 - .1 National Fire Code, latest edition.
 - .2 Fire Protection Standards FCC 301 and FCC 302 - latest edition.
 - .3 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 29 - Health and Safety Requirements.
- .2 In event of conflict between any provisions of above authorities the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, Departmental Representative will advise on the course of action to be followed.

1.7 HOT WORK
AUTHORIZATION

- .1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot work on site.
- .2 To obtain authorization submit to Departmental Representative:
 - .1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
 - .2 Description of the type and frequency of Hot Work required.
 - .3 Sample Hot Work Permit to be used.
- .3 Upon review and confirmation that effective fire safety measures will be implemented during performance of hot work, Departmental Representative will provide authorization to proceed as follows:
 - .1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

.2 Separate work, or segregate certain parts of work, into individual entities. Each entity requiring a separately written "Authorization to Proceed" from Departmental Representative. Follow Departmental Representative's directives in this regard.

.4 Requirement for individual authorization based on:

- .1 Nature or phasing of work;
- .2 Risk to Facility operations;
- .3 Quantity of various trades needing to perform hot work on project or;
- .4 Other situation deemed necessary by Departmental Representative to ensure fire safety on premises.

.5 Do not perform any Hot Work until receipt of Departmental Representative's written "Authorization to Proceed" for that portion of work.

1.8 HOT WORK PROCEDURES

.1 Develop and implement safety procedures and work practices to be followed during the performance of Hot Work.

.2 Procedures to include:

- .1 Requirement to perform hazard assessment of site and immediate hot work area for each hot work event in accordance with Hazard Assessment and Safety Plan requirements of Section 01 35 29.
- .2 Use of a Hot Work Permit system for each hot work event.
- .3 The step by step process of how to prepare and issue permit.
- .4 Permit shall be issued by Contractor's site Superintendent, or other authorized person designated by Contractor, granting permission to worker or subcontractor to proceed with hot work.
- .5 Provision of a designated person to

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

carryout a Fire Safety Watch for a minimum of 60 minutes immediately upon completion of the hot work.

.6 Compliance with fire safety codes and standards specified herein and occupational health and safety regulations specified in Section 01 35 29.

.3 Generic procedures, if used, must be edited and supplemented with pertinent information tailored to reflect specific project conditions. Clearly label as being the Hot Work Procedures applicable to this contract.

.4 Hot Work Procedures shall clearly establish worker instructions and allocate responsibilities of:

.1 Worker(s),

.2 Authorized person issuing the Hot Work Permit,

.3 Fire Safety Watcher,

.4 Subcontractors and Contractor.

.5 Brief all workers and subcontractors on Hot Work Procedures and Permit system established for project. Stringently enforce compliance.

.1 Failure to comply with the established procedures may result in the issuance of a Non-Compliance Notification at Departmental Representative's discretion with possible disciplinary measures imposed as specified in Section 01 35 29.

1.9 HOT WORK PERMIT

.1 Hot Work Permit to include, as a minimum, the following data:

.1 Project name and project number.

.2 Building name, address and specific room or area where hot work will be performed.

.3 Date when permit issued.

.4 Description of hot work type to be performed.

.5 Special precautions required, including

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

type of fire extinguisher needed.

.6 Name and signature of person authorized to issue the permit.

.7 Name of worker (clearly printed) to which the permit is being issued.

.8 Time Duration that permit is valid (not to exceed 8 hours). Indicate start time and date, and completion time and date.

.9 Worker signature with date and time upon hot work termination.

.10 Specified time period requiring safety watch.

.11 Name and signature of designated Fire Safety Watcher, complete with time and date when safety watch terminated, certifying that surrounding area was under continual surveillance and inspection during the full watch time period specified in Permit and commenced immediately upon completion of Hot Work.

.2 Permit to be typewritten form. Industry Standard forms shall only be used if all data specified above is included on form.

.3 Each Hot Work Permit to be completed in full and signed as follows:

.1 Authorized person issuing Permit before hot work commences.

.2 Worker upon completion of Hot Work.

.3 Fire Safety Watcher upon termination of safety watch.

.4 Returned to Contractor's Site Superintendent for safe keeping.

1.10 DOCUMENTS
ON SITE

.1 Keep Hot Work Permits and Hazard assessment documentation on site for duration of Work.

.2 Upon request, make available to Departmental Representative or to authorized safety representative for inspection.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.1 RELATED WORK

- .1 Section 01 35 24 - Special Procedures on Fire Safety Requirements.

1.2 DEFINITIONS

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

1.3 SUBMITTALS

- .1 Make submittals in accordance with Section 01 33 00.
- .2 Submit to Departmental Representative, copies of the following documents including updates.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .1 Site specific Health and Safety Plan.
- .2 Building permit, compliance certification and other permits obtained.
- .3 Reports or directives issued by Federal and Provincial Inspectors and other Authorities having jurisdiction.
- .4 Accident or incident reports.
- .5 WHMIS - MSDS data sheets.
- .6 Name of Contractor's Representative designated to perform health and safety supervision in site.
- .7 Certificate of clearance from Workplace Health Safety and Compensation Commission (Assessment Services Department) of Newfoundland and Labrador.

- .3 Submit within five (5) work days of notification of Bid Acceptance. Provide one (1) copy.
- .4 Departmental Representative will review Health and Safety Plan and provide comments.
- .5 The Contractor will revise the Plan as appropriate and resubmit within five (5) work days after receipt of comments.
- .6 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.
- .7 Submit revisions and updates made to the Plan during the course of Work.

1.4 COMPLIANCE
REQUIREMENTS

- .1 Comply with the Occupational Health and Safety Act for the Province of

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

Newfoundland and Labrador, and the
Occupational Health and Safety Regulations
made pursuant to the Act.

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

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.5 RESPONSIBILITY

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

1.6 SITE CONTROL
AND ACCESS

- .1 Control the Work and entry points to Work Site. Approve and grant access only to workers and authorized persons. Immediately stop and remove non-authorized persons.
 - .1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized persons have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.
- .2 Isolate Work Site from other areas of the premises by use of appropriate means.
 - .1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment.
 - .2 Post signage at entry points and other strategic locations indicating

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

restricted access and conditions for
access.

- .3 Provide safety orientation session to persons granted access to Work Site. Advise of hazards and safety rules to be observed while on site.
- .4 Ensure persons granted site access wear appropriate PPE. Supply PPE to inspection authorities who require access to conduct tests or perform inspections.
- .5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm. Provide security guard where adequate protection cannot be achieved by other means.

1.7 PROTECTION

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

1.8 FILING OF NOTICE

- .1 File Notice of Project with pertinent provincial health and safety authorities prior to beginning of Work.

1.9 PERMITS

- .1 Post permits, licenses and compliance Certificates at Work Site.
- .2 Where a particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed before carrying

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

out applicable portion of work.

1.10 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 progress of work, including when new trades and subcontractors arrive on site.
- .3 Record results and address in Health and Safety Plan.
- .4 Keep documentation on site for entire duration of the Work.

1.11 PROJECT/SITE
CONDITIONS

- .1 The following are known or potential project related safety hazards at site:
 - .1 Working in close proximity of water.
 - .2 Remote site location.
 - .3 Wet and slippery conditions.
 - .4 Inclement weather conditions.
 - .5 Heavy lifting.
 - .6 Working at heights.
 - .7 Cutting tools and other construction power tools.
 - .8 Hazardous materials, including lead paint.
 - .9 Sharp objects (construction debris).
 - .10 Surrounding steep terrain/cliffs/risk of falling.
- .2 Above items shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work.
- .3 Include above items into hazard assessment

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

process.

1.12 MEETINGS

- .1 Contractor to hold pre-construction health and safety meeting prior to commencement of Work. Ensure attendance of:
 - .1 Superintendent of Work.
 - .2 Contractor's designated Health & Safety Site Representative.
 - .3 Subcontractor's Health and Safety Site Representative.
 - .4 Health and Safety Site Coordinator.
- .2 Conduct regularly scheduled tool box and safety meetings during the Work in conformance with Occupational Health and Safety regulations.
- .3 Keep documents on site.

1.13 HEALTH AND
SAFETY PLAN

- .1 Prior to commencement of Work, develop written Health and Safety Plan specific to the work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.
- .2 Health and Safety Plan shall include the following components:
 - .1 List of health risks and safety hazards identified by hazard assessment.
 - .2 Control measures used to mitigate risks and hazards identified.
 - .3 On-site Contingency and Emergency Response Plan as specified below.
 - .4 On-site Communication Plan as specified below.
 - .5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.
 - .6 Names, competence and reporting relationship of other supervisory

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

personnel used in the Work for
occupational health and safety
purposes.

- .3 On-site Contingency and Emergency Response Plan shall include:
 - .1 Operational procedures, evacuation measures and communication process to be implemented in the event of an emergency.
 - .2 Evacuation Plan: site and floor plan layouts showing escape routes, marshaling areas. Details on alarm notification methods, fire drills, location of fire fighting equipment and other related data.
 - .3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.
 - .4 Emergency Contacts: name and telephone number of officials from:
 - .1 General Contractor and subcontractors.
 - .2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
 - .3 Local emergency resource organizations.
- .4 On-site Communication Plan:
 - .1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.
- .5 Address all activities of the Work including those of subcontractors.
- .6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

subcontractor arrive at Work Site.

- .7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.
- .8 Post copy of the Plan, and updates, prominently on Work Site.

1.14 SAFETY SUPERVISION

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

.2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibility and authority to:

- .1 Implement, monitor and enforce daily compliance with health and safety requirements of the Work
 - .2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
 - .3 Conduct site safety orientation session to persons granted access to Work Site.
 - .4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent to their activities at the site or are escorted by a competent person while on the Work Site.
 - .5 Stop the Work as deemed necessary for reasons of health and safety.
- .3 Health & Safety Site Representative must:
- .1 Be qualified and competent person in occupational health and safety.
 - .2 Have site-related working experience specific to activities of the Work.
 - .3 Be on Work Site at all times during execution of the Work.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .4 All supervisory personnel assigned to the Work shall also be competent persons.
- .5 Inspections:
 - .1 Conduct regularly scheduled safety inspections of the Work on a minimum daily basis. Record deficiencies and remedial action taken.
 - .2 Conduct Formal Inspections on a minimum monthly basis. Use standardized safety inspection forms. Distribute to subcontractors.
 - .3 Follow-up and ensure corrective measures are taken.
- .6 Keep inspection reports and supervision related documentation on site.

1.15 TRAINING

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

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.16 MINIMUM
SITE SAFETY RULES

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

1.17 CORRECTION OF
NON-COMPLIANCE

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

1.18 INCIDENT
REPORTING

- .1 Investigate and report the following incidents to Departmental Representative:
 - .1 Incidents requiring notification to Provincial Department of Occupational

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

Safety and Health, Workers Compensation
Board or to other regulatory Agency.

.2 Medical aid injuries.

.3 Property damage in excess of
\$10,000.00.

.2 Submit report in writing.

1.19 HAZARDOUS
PRODUCTS

.1 Comply with requirements of Workplace
Hazardous Materials Information System
(WHMIS).

.2 Keep MSDS data sheets for all products
delivered to site.

.1 Post on site.

.2 Submit copy to Departmental
Representative.

1.20 SITE RECORDS

.1 Maintain on Work Site copy of safety
related documentation and reports
stipulated to be produced in compliance
with Acts and Regulations of authorities
having jurisdiction and of those documents
specified herein.

.2 Upon request, make available to
Departmental Representative or authorized
Safety Officer for inspection.

1.21 POSTING OF
DOCUMENTS

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

.2 Post other documents as specified herein,
including:

.1 Site specific Health and Safety Plan.

.2 WHMIS data sheets.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- | | | |
|---|----|--|
| <u>1.1 RELATED WORK</u> | .1 | Section 02 41 16 - Sitework, Demolition and Removal. |
| <u>1.2 DEFINITIONS</u> | .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 health of persons, animals, or plant life when released into the environment. |
| <u>1.3 DISPOSAL OF
WASTES AND
HAZARDOUS
MATERIALS</u> | .1 | Do not bury rubbish and waste materials on site. |
| | .2 | Do not dispose of hazardous waste or volatile materials, such as mineral spirits, paints, thinners, oil or fuel into waterways, storm or sanitary sewers or waste landfill sites. |
| | .3 | Store, handle and dispose of hazardous materials and hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines. |
| | .4 | Dispose of construction waste materials and demolition debris, resulting from work, at approved landfill sites only. Carryout such disposal in strict accordance with provincial and municipal rules and regulations. Separate out and prevent improper disposal of items banned from landfills. |
| | .5 | Establish methods and undertake construction practices which will minimize waste and optimize use of construction materials. Separate at source all construction waste materials, demolition debris and product packaging and delivery containers into various waste categories in order to maximize recycling abilities of various materials and avoid disposal of debris at landfill site(s) |

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

in a "mixed state". Where recycling firms, specializing in recycling of specific materials exist, transport such materials to the recycling facility and avoid disposal at landfill sites.

- .6 Communicate with landfill operator prior to commencement of work, to determine what specific construction, demolition and renovation waste materials have been banned from disposal at the landfill and at transfer stations.

1.5 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with governing regulations and requirements.
- .4 Pumped water must meet applicable federal, provincial, and municipal standards before it can be discharged to a surface water body. If regulatory guidelines exceedences are noted, the Departmental Representative has the right to issue stop pumping instructions to the Contractor. Contractor will not be compensated for any delays associated with retrofitting equipment to meet guidelines.

1.6 PERMITS

- .1 All guidelines and instructions stated on permits must be strictly adhered to.

1.7 WORK ADJACENT

- .1 Do not operate construction equipment in

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

TO WATERWAYS

waterways.

- .2 Do not use waterway beds for borrow material.
- .3 Do not dump excavated fill, waste material or debris in waterways.
- .4 At borrow sites, design and construct temporary crossings to minimize erosion to waterways in strict conformance with provincial and federal environmental regulations.
- .5 Do not skid logs or construction materials across waterways.
- .6 Ensure refueling of any type of equipment does not, either directly or indirectly, create pollution by causing or permitting any leaks or spills.
- .7 Maintain equipment in good working condition with no fluid leaks, loose hoses or fittings.

1.8 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 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.
- .4 Have emergency spill response equipment and rapid clean-up kit, appropriate to work, at site. Locate adjacent to work and where hazardous materials are stored. Provide personal protective equipment as required for clean-up.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .5 Report, to Federal and Provincial Department of the Environment, spills of petroleum and other hazardous materials as well as accidents having potential of polluting the environment. Also notify Departmental Representative and submit a written spill report to Departmental Representative within 24 hours of occurrence.

1.9 WILDLIFE PROTECTION

- .1 Should sea bird nests be encountered during work, immediately notify Departmental Representative for directives to be followed.
 - .1 Do not disturb nest site and neighbouring vegetation until nesting is completed.
 - .2 Minimize work immediately adjacent to such areas until nesting is completed.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- | | | |
|--|----|--|
| <u>1.1 SANITARY FACILITIES</u> | .1 | Provide sanitary facilities for work force in accordance with governing regulations and ordinances. |
| | .2 | Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition. |
| <u>1.2 WATER SUPPLY</u> | .1 | Arrange, pay for and maintain temporary water supply in accordance with governing regulations and ordinances. |
| <u>1.3 SCAFFOLDING</u> | .1 | Design, construct and maintain scaffolding in rigid, secure and safe manner in accordance with CSA797-09, or other applicable standard acceptable to Departmental Representative. Scaffolding is to be designed and stamped by a Professional Engineer, licensed to practice by PEG-NL in the Province of NL. Provide stamped design drawings and design notes to Departmental Representative. Erect scaffolding independent of walls. Remove when no longer required. |
| <u>1.4 CONSTRUCTION SIGN AND NOTICES</u> | .1 | Contractor or subcontractor advertisement signboards are not permitted on site. |
| | .2 | Only notices of safety or instructions are permitted on site. |
| | .3 | Maintenance and Disposal of Site Signs:
.1 Maintain approved signs and notices in good condition for duration of project and dispose of off site on completion of project or earlier if directed by Departmental Representative. |
| <u>1.5 REMOVAL OF TEMPORARY FACILITIES</u> | .1 | Remove temporary facilities from site when directed by Departmental Representative. |

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

PART 1 - GENERAL

1.1 SECTION
INCLUDES

.1 Barriers.

1.2 INSTALLATION
AND REMOVAL

.1 Provide temporary controls in order to
execute work expeditiously.

.2 Remove from site all such work after use.

1.3 HOARDING

.1 Erect temporary site enclosure if required
by governing authorities, using new 1.2 m
high snow fence wired to rolled steel "T" bar
fence posts spaced at 2.4 m centres. Provide
one lockable truck gate. Maintain fence in
good repair.

1.4 GUARD RAILS
AND BARRICADES

.1 Provide secure, rigid guard rails and
barricades as required to protect against
falls. Note steep cliffs around work area
and construct barricades to protect workers.

.2 Provide as required by governing authorities.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

PART 1 - GENERAL1.1 GENERAL

- .1 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.
- .2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .3 Prevent accumulation of wastes which create hazardous conditions.
- .4 Provide adequate ventilation during use of volatile or noxious substances.

1.2 CLEANING DURING
CONSTRUCTION

- .1 Maintain project grounds and public properties in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.
- .2 Provide on-site garbage containers for collection of waste materials and debris.
- .3 Remove waste materials and debris from site on a daily basis.

1.3 FINAL CLEANING

- .1 In preparation for acceptance of the Work perform final cleaning. Final cleaning to include exterior rake of work area, to satisfaction of Departmental Representative.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.1 SECTION
INCLUDES

- .1 Project Record Documents as follows:
 - .1 Manual of paint products used, including Manufacturer's literature brochures.
 - .2 Manufacturer's data and reviewed shop drawings of all exterior door hardware.

1.2 PROJECT RECORD
DOCUMENTS

- .1 Departmental Representative will provide two white print sets of contract drawings and two copies of Specifications.
- .2 Maintain at site one set of the contract drawings and specifications to record actual "As-Built" site conditions.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

PART 1 - GENERAL1.1 DESCRIPTION

- .1 This section specifies requirements for demolishing and removing wholly or in part various items designated to be removed or partially removed.
- .2 Demolition and removal will consist of, but not necessarily be limited to, the following:
 - .1 Removal of the exterior paint from the steel railings in the catwalk area, using pressure washing or abrasive blasting (carry in Bid price, the costs for complete replacement of the catwalk). Refer to other sections of these specifications and the drawings for specific requirements to limit occupational exposure to lead dust during paint removal activities. Note that the door to the catwalk is to be welded shut at project completion, to restrict access on to the catwalk. All supports, trims, railings and the landing for the catwalk are to be replaced new (to match existing), unless otherwise acceptable to Departmental Representative.
 - .2 Removal of the exterior and interior paint from the cast iron tower, using abrasive blasting. Refer to other sections of these specifications and the drawings for specific requirements to limit occupational exposure to lead dust during paint removal activities.
 - .3 Removal of the cast iron grates on the windows (and replacement with new, to match existing).
 - .4 Removal of all stairs/steps/landings on the interior of the lighthouse, as noted on the drawings.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

.5 Removal of the exterior door from the adjacent building and replacement of the door and frame to match the existing. Departmental Representative will provide specific requirements for replacement of the door in the adjacent building, at the pre-tender site visit.

1.2 MEASUREMENT FOR
PAYMENT

- .1 This portion of the work will not be measured for payment but will be included in the Lump Sum Amount of the contract.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

3.1 EXECUTION

- .1 Inspect site and verify with Departmental Representative objects designated for removal.
- .2 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.

3.2 REMOVAL

- .1 Remove in their entirety all materials and objects specified for removal.
- .2 Do not disturb adjacent work designated to remain in place.

3.3 DISPOSAL OF
MATERIAL

- .1 All demolished materials will become property of contractor and will be removed from site and disposed of to satisfaction of Departmental Representative and in accordance with environmental guidelines. It is the sole responsibility of the contractor to dispose of all demolished materials at an

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

approved disposal site. Ensure that disposal site is approved and willing to accommodate any materials disposed of from work site.

- .2 Contractor shall obtain and pay for all necessary permits and disposal fees for use of an approved waste disposal site.

3.4 RESTORATION

- .1 Upon completion of work, remove debris, trim surfaces and leave work site in clean condition.
- .2 Reinstate areas and existing works outside areas of demolition to conditions that existed prior to commencement of work.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

PART 1 - GENERAL

- 1.1 REFERENCES
- .1 Guideline for Lead on Construction Projects from Occupational Health and Safety Branch, Ontario Ministry of Labour, April 2011.
 - .2 Health Canada
 - .1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
 - .3 Human Resources and Social Development Canada (HRSDC)
 - .1 Canada Labour Code Occupational Health and Safety Regulations.
 - .4 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
 - .5 Management of Disposal of Construction, Abatement and Demolition Waste Containing Lead-Based Paint, 2010, NL Department of Environment and Conservation.
- 1.2 SCOPE
- .1 For the purposes of this work scope, lead based paint is defined by the federal Ministry of Health, under the Hazardous Products Act, as a paint or other similar material that dries to a solid film that contains over 90 mg/kg (0.009%) dry weight of lead. Reference the analytical data appended to the specifications which defines the paint as lead-based (in addition, note that the lead leachate concentrations are greater than 5mg/L and in this regard all paint and spent abrasives are to be disposed of as hazardous waste.
 - .2 Comply with requirements of this

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

Section when performing following
Work:

.1 Removal of lead based paint from the existing steel railings and cast iron tower (inside and outside), as indicated on the drawings. Consider this activity to be a Type 3b activity as defined in the document referenced in Part 1.1.1 of this specification section. As noted on the drawings, the catwalk (railings, landing, supports) is to be replaced new (to match existing) if the condition of the existing railings is unacceptable to the Departmental Representative (carry costs in Bid for a full replacement of the catwalk).

.2 Disposal of lead based paint and abrasive blasting material in accordance with the NL Department of Environment Regulations, as defined in the reference document noted under Part 1.1.5 of this specification section. For the purposes of transportation and disposal, the lead paint is considered leachable and is to be disposed of as hazardous waste.

- 1.3 SUBMITTALS
- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of lead based paint waste in accordance with requirements of authority having jurisdiction. Note that it is the Contractor's responsibility to determine an approved waste site for all flaking/peeling paint and spent abrasives (for Bidding, the lead paint and spent abrasives are to be considered hazardous and will require out of Province disposal).

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

.3 Quality Control:

- .1 Provide proof satisfactory to Departmental Representative that employees had instruction on hazards of lead exposure, respirator use, dress, entry and exit from Work Area, and aspects of work procedures and protective measures.
- .2 Provide proof that supervisory personnel have attended lead abatement course, of not less than one day duration, approved by Departmental Representative. Minimum of one supervisor for every ten workers.
- .4 Contractor to submit Shop Drawings on decontamination facility set-up and enclosed work area.
- .5 All shop drawings for scaffolding, temporary supports and structures to be utilized in the work shall be submitted under seal of professional engineer licensed to practice in Newfoundland & Labrador.

1.4 QUALITY
ASSURANCE

- .1 Regulatory Requirements: comply with federal, provincial/Territorial and local requirements pertaining to lead, in case of conflict among those requirements or with these specifications the more stringent requirement applies. Comply with regulations in effect at time work is performed.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

PART 2 - PRODUCTS

- 2.1 MATERIALS
- .1 Polyethylene 0.15 mm unless otherwise specified; in sheet size to minimize joints.
 - .2 FR polyethylene: 0.15 mm woven fibre reinforced fabric bonded both sides with polyethylene.
 - .3 Tape: fibreglass - reinforced duct tape suitable for sealing polyethylene under dry conditions and wet conditions using amended water.
 - .4 Slow - drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for trapping residual lead paint residue.
 - .5 Lead waste containers: metal fibre type acceptable to approved facility with tightly fitting covers and 0.15 mm sealable polyethylene liners.
 - .1 Label containers with pre-printed cautionary warning "Lead" clearly visible when ready for removal to disposal site (labelling to be in accordance with Transportation of Dangerous Goods requirements).

PART 3 - EXECUTION

- 3.1 SUPERVISION
- .1 Approved Supervisor must remain within Work Area during disturbance, removal, or handling of lead based paints.
- 3.2 RESPIRATORS
- .2 For Type 3b operation, as per Part 1.2.1 of this specification section, use type CE abrasive blast supplied respirator operated in a positive pressure mode with a tight fitting mask facepiece.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

3.3 GENERAL

- .1 Washing facilities to be established on site before removal of lead paint surfaces. Washing facilities to consists of a wash basin, water, soap and towels.
- .2 No eating, drinking, chewing gum or smoking in work area.
- .3 Drop sheets to be used below all lead operations which produce or may produce dust, chips or debris containing lead.
- .4 Dust and waste to be cleaned up and removed by vacuuming with a HEPA filter equipped vacuum.
- .5 Clean-up after ach operation to be done to prevent lead contamination and exposure to lead.

3.4 MEASURES

- .1 Type 3a (removal of paint from steel railings and cast iron tower):
 - .1 Post signs to warn of lead hazard.
 - .2 Wear respirators in accordance with Part 3.2 of this specification, during all paint removal activities, involving pressure washing or abrasive blasting.
 - .3 Wear protective clothing to prevent skin contamination, including but not limited to coveralls, gloves, hats and footwear or disposable coverlets; safety glasses, face shields or goggles. All protective clothing to be removed at the end of each shift and be decontaminated.
 - .4 Construct full tight enclosure (with tarps that are generally impermeable and fully sealed joints and entryways). Install negative pressure machine system and operate continuously from installation of polyethylene sheeting

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- until completion of final cleanup.
- .5 Seal off openings, polyethylene sheeting sealed with tape. Cover floor surfaces or working platform in work area from wall to wall with FR polyethylene drop sheets. Build airlocks at entrances and exits from work areas to ensure work areas are always closed off by one curtained doorway when workers enter or exit. At point of access to work areas install warning signs.
 - .6 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to Authority having jurisdiction
 - .7 Where water application is required provide temporary water supply by use of appropriately sized hoses for application of water as required.
 - .8 Provide electrical power and shut off for operation of powered tools and equipment. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.
 - .9 Worker Decontamination Enclosure System includes Equipment and Access Room and Clean Room, as follows:
 - .1 Equipment and Access Room: construct between exit and work areas, with two curtained doorways, one to the rest of the site, and one to work area. Install waste receptor and storage facilities for workers' shoes and protective clothing to be re-worn in work areas. Build large enough to accommodate specified facilities, equipment needed, and at least one worker allowing sufficient space to change comfortably.
 - .2 Clean Room: construct with curtained doorway to outside of

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

enclosures. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.

.10 Construction of Decontamination

Enclosures:

.1 Construct framing for enclosures or otherwise provide portable enclosures as approved by the Departmental Representative. Line enclosure with polyethylene sheeting and seal with tape, apply two layers of FR polyethylene on floor.

.2 Construct curtain doorways between enclosures so when people move through or waste containers and equipment are moved through doorway, one of two closure comprising doorway always remains closed.

.3 Shower room in decontamination facility to be provided with the following:

.1 Hot and cold water or water of constant temperature not less than 40 degrees Celsius or more than 50 degrees Celsius.

.2 Individual controls inside to regulate water flow and temperature.

.4 Prior to each shift in which a decontamination facility is being used, a competent person should inspect the facility to ensure that there are no defects that would allow lead-containing dust to escape. Defects should be repaired before the facility is used. The decontamination facility should be maintained in a clean and sanitary condition.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

PART 1 - GENERAL1.1 REFERENCES

- .1 American Society for Testing and Materials International, (ASTM)
 - .1 ASTM A 53/A53M-10, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A 269-10, Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - .3 ASTM A307-10, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
 - .4 ASTM A123/A123M-09, Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.40-97, Anti-corrosive Structural Steel Alkyd Primer.
 - .2 CAN/CGSB-1.181-99, Ready-Mixed, Organic Zinc-Rich Coating.
- .3 Canadian Standards Association (CSA International)
 - .1 CSA-G40.20/G40.21-04 (R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
 - .2 CAN/CSA-S16.1-09, Design of Steel Structures.
 - .3 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
 - .4 CSA W59-03 (R2008), Welded Steel Construction (Metal Arc Welding).

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .4 The Environmental Choice Program
 - .1 CCD-047a-98, Paints, Surface Coatings.
 - .2 CCD-048-98, Surface Coatings - Recycled Water-borne.

1.2 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's:
 - .1 For finishes, coatings, primers and paints.
- .2 Shop Drawings
 - .1 Submit shop drawings in accordance with Section 01 33 00 - Submittal Procedures.
 - .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.

1.3 QUALITY ASSURANCE

- .1 Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
- .2 Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.4 DELIVERY,
STORAGE, AND
HANDLING

- .1 Packing, Shipping, Handling and Unloading:
- .2 Deliver, store, handle and protect materials to satisfaction of Departmental Representative.
- .3 Storage and Protection:
 - .1 Cover exposed stainless steel surfaces with pressure sensitive heavy protection paper or apply strippable plastic coating, before shipping to job site.
 - .2 Leave protective covering in place until final cleaning of building. Provide instructions for removal of protective covering.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Do all metal installations as per drawings.
- .2 Where not indicated on the drawings, all steel sections and plates: to CAN/CSA-G40.20/G40.21, Grade 300W.
- .3 Welding materials: to CSA W59.
- .4 Welding electrodes: to CSA W48 Series.
- .5 Bolts and anchor bolts: to ASTM A 307.

2.2 FABRICATION

- .1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Use self-tapping shake-proof flat headed screws on items requiring assembly by screws or as indicated.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .3 Where possible, fit and shop assemble work, ready for erection.
- .4 Ensure exposed welds are continuous for length of each joint. File or grind exposed welds smooth and flush.
- .5 Carry all costs in Bid price to take accurate field measurements to ensure fabrications suit the existing site conditions. Ensuring aluminum and steel sections are fabricated to suit site conditions is the responsibility of the Contractor.

2.3 FINISHES

- .1 Galvanizing: hot dipped galvanizing with zinc coating to ASTM-A123/A123M.
- .2 Shop coat primer: to CAN/CGSB-1.40.
- .3 Zinc primer: zinc rich, ready mix to CAN/CGSB-1.181.

PART 3 - EXECUTION

3.1 ERECTION

- .1 Do welding work in accordance with CSA W59 unless specified otherwise.
- .2 Erect metalwork square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

3.2 CLEANING

- .1 Perform cleaning after installation to remove construction and accumulated environmental dirt.
- .2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.1 REFERENCES

- .1 Aluminum Association (AA),
 - .1 AA-DAF 45, Designation System for Aluminum Finishes.
- .2 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-1.40, Anticorrosive Structural Steel Alkyd Primer.
 - .2 CAN/CGSB-79.1, Insect Screens.
- .3 Canadian Standards Association (CSA)
 - .1 CSA-A440-00/A440.1, A440, Windows / Special Publication A440.1, User Selection Guide to CSA Standard A440, Windows.
 - .2 CAN/CSA-Z91, Health and Safety Code for Suspended Equipment Operations.

1.2 SUBMITTALS

- .1 Indicate materials and details in full size scale for head, jamb and sill, profiles of components, interior and exterior trim junction between combination units, elevations of unit, anchorage details, location of isolation coating, description of related components and exposed finishes fasteners, and caulking. Indicate location of manufacturer's nameplates. Submit test reports on wind load resistance, condensation resistance, forced entry resistance, window classification, air tightness and water tightness.

1.3 WARRANTY

- .1 Provide a written warranty for work under this section from manufacturer for failure due to defective materials and from contractor for failure due to defective installation and workmanship, for five (5) years respectively from the date of Substantial Completion.

1.4 MATERIALS

- .1 Materials: to CSA-A440/A440.1 supplemented as follows:

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .2 All aluminum windows by same manufacturer.
- .3 Sash: aluminum thermally broken.
- .4 Main frame: aluminum thermally broken.
- .5 Glass: in accordance with Section 08 80 50 Glazing.
- .6 Exterior metal sills: extruded aluminum of type and size to suit job conditions; minimum 3 mm thick, complete with joint covers, jamb drip deflectors, chairs, anchors, anchoring devices.
- .7 Isolation coating: alkali resistant bituminous paint.

1.5 WINDOW TYPE

- .1 Fixed: with insulated glass.
- .2 Classification rating: to CSA-A440/A440.1 for applicable region in NL.
- .3 Energy ratings: windows to be Energy Star certified to Canadian Standards Association for applicable region in NL.
- .4 Fabricate in accordance with CSA-A440/A440.1.
- .5 Finish exposed surfaces of aluminum components in accordance with Aluminum Association Designation System for Aluminum Finishes.
 - .1 Clear anodic finish: designation to match AA-M10C22A31.
- .6 Isolate aluminum from following components, by means of isolation coating:
 - .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
 - .2 Concrete, mortar and masonry.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

.3 Wood.

- .7 Glaze windows in accordance with
CSA-A440/A440.1 and Section 08 80 50 -
Glazing.
- .8 Install in accordance with CSA-A440 and
manufacturer's instructions. Seal joints as
per manufacturer's recommendations.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.1 REFERENCES

- .1 Glass Association of North American (GANA)
 - .1 GANA Glazing Manual.
 - .2 GANA Laminated Glazing Reference Manual
- .2 Canadian General Standards Board (CGSB).
 - .1 CAN/CGSB-12.1, Tempered or Laminated Safety Glass.
 - .2 CAN/CGSB-12.3, Clear Float Glass
 - .3 CAN/CGSB-12.5, Mirrors, Silvered.
 - .4 CAN/CGSB-12.8, Insulating Glass Units.
 - .5 CAN/CGSB-12.11, Wired Safety Glass.

Performance Requirements:

- .1 Provide continuity of building enclosure vapour and air barrier using glass and glazing materials as follow:
 - .1 Utilize inner light of multiple light sealed units for continuity of air and vapour seal.
- .2 Size glass to withstand wind loads, dead loads and positive and negative live loads as measured in accordance with ANSI/ASTM E330 and NBC latest edition.
- .3 Limit glass deflection to 1/200 with full recovery of glazing materials.

1.2 SUBMITTALS

- .1 Product Data:
 - .1 Submit manufacturer's printed product literature, specifications and data sheet.
- .2 Manufacturer's Instructions:
 - .1 Submit manufacturer's installation instructions.

1.3 WARRANTY

- .1 Provide ten (10) year warranty for glazing units from the date of Substantial Completion.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

1.4 MATERIALS

- .1 Glazing Lantern Room:
Extruded polycarbonate glazing UV stabilized. Standard of Acceptance: Lexan XL thickness to match existing.
- .2 Install glazing when ambient temperature is 10°C minimum. Maintain ventilated environment for 24 hours after application.
- .3 Maintain minimum ambient temperature before, during and 24 hours after installation of glazing compounds.
- .4 Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalogue installation instructions, product carton installation instructions, and data sheets.
- .5 Verify that openings for glazing are correctly sized and within tolerance. Verify that surfaces of glazing channels or recesses are clean, free of obstructions, and ready to receive glazing.
- .6 Perform work in accordance with GANA Glazing Manual and GANA Laminated Glazing Reference Manual for glazing installation methods.
- .7 After installation, mark light with an "X" by using removable plastic tape or paste. Do not mark heat absorbing or reflective glass units. Repair damage to adjacent materials caused by glazing installation.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

PART 1 GENERAL

- 1.1 General .1 All cast iron sections are to be inspected by a certified NACE inspector, acceptable to the specifying authority and Departmental Representative, prior to repainting. The cost of the NACE inspector is to be borne by the Contractor. Assume a minimum of five (5) inspections from the NACE inspector is to be made prior to and during application of paint on cast iron sections, to ensure proper application. After each site visit, provide written report to the Departmental Representative within five (5) working days with the testing results and certifications..
- 1.2 References .1 Canada Green Building Council (CaGBC)
- .1 LEED Canada-NC Version 1.0-2004, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Package for New Construction and Major Renovations.
- .2 Environmental Protection Agency (EPA)
- .1 Test Method for Measuring Total Volatile Organic Compound Content of Consumer Products, Method 24 (for Surface Coatings).
- .3 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
- .1 Material Safety Data Sheets (MSDS).
- .4 The Master Painters Institute (MPI)
- .1 Architectural Painting Specification Manual - February 2004.
- .2 Standard GPS-1-05, MPI Green Performance Standard for Painting and Coatings.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .5 National Fire Code of Canada.
- .6 Society for Protective Coatings (SSPC)
 - .1 Systems and Specifications, SSPC Painting Manual 2005.

1.3 Quality Assurance

- .1 Qualifications:
 - .1 Qualified journeypersons as defined by local jurisdiction to be engaged in painting work
 - .2 Apprentices: may be employed provided they work under direct supervision of qualified journeyperson in accordance with trade regulations.
 - .3 Conform to latest MPI requirements for exterior painting work including preparation and priming.
 - .4 Materials: in accordance with MPI Painting Specification Manual "Approved Product" listing and from a single manufacturer for each system used.
 - .5 Paint materials such as linseed oil, shellac, and turpentine to be highest quality product of an approved manufacturer listed in MPI Painting Specification Manual and to be compatible with other coating materials as required.

1.4 Performance Requirements

- .1 Environmental Performance Requirements:
 - .1 Green Performance in accordance with MPI Standard GPS-1.

1.5 Scheduling

- .1 Submit work schedule for various stages of painting to Departmental Representative for approval. Submit schedule minimum of 48 hours in advance of proposed operations.
- .2 Obtain written authorization from

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

Departmental Representative for changes in
work schedule.

- .3 Schedule painting operations to prevent
disruption of occupants in and about
building.

1.6 Submittals

- .1 Provide submittals in accordance with
Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's printed product
literature, specifications and
datasheet and include product
characteristics, performance
criteria, physical size, finish and
limitations.
 - .3 Upon completion, submit records of
products used. List products in relation
to finish system and include the
following:
 - .1 Product name, type and use.
 - .2 Manufacturer's product number.
 - .3 Colour numbers.
 - .4 MPI Environmentally Friendly
classification system rating.
 - .5 Manufacturer's Material Safety Data
Sheets (MSDS).
 - .4 Provide samples in accordance with Section
01 33 00 - Submittal Procedures.
 - .1 Submit duplicate 200 x 300 mm sample
panels of each paint, stain, clear
coating with specified paint or
coating in colours, gloss/sheen and
textures required to MPI Painting
Specification Manual standards
submitted on the following substrate
materials:
 - .1 3 mm plate steel for finishes
over metal surfaces.
 - .2 13 mm birch plywood for finishes

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

over wood surfaces.

.3 13 mm gypsum board for finishes
over gypsum board and other
smooth surfaces.

.4 10 hardboard for finishes over
wood surfaces.

.2 When approved, samples shall become
acceptable standard of quality for
appropriate on-site surface with one
of each sample retained on-site.

.3 Submit full range of available
colours where colour availability is
restricted.

1.7 Quality
Control

.1 Provide mock-up and test patches (to check
adhesion) to approval of Departmental
Representative and as required by paint
manufacturer's standard data sheets.

1.8 Maintenance

.1 Extra Materials:

.1 Submit maintenance materials in
accordance with Section 01 78 00 -
Closeout Submittals.

.2 Submit one, four litre can of each type
and colour of finish coating. Identify
colour and paint type in relation to
established colour schedule and finish
system.

1.9 Delivery,
Storage And
Handling

.1 Deliver, store and handle as follows:

.1 Deliver and store materials in
original containers, sealed, with
labels intact.

.2 Labels: to indicate:

.1 Manufacturer's name and address.

.2 Type of paint or coating.

.3 Compliance with applicable
standard.

.4 Colour number in accordance with
established colour schedule.

.3 Remove damaged, opened and rejected

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

materials from site.

- .4 Provide and maintain dry, temperature controlled, secure storage.
- .5 Observe manufacturer's recommendations for storage and handling.
- .6 Store materials and supplies away from heat generating devices.
- .7 Store materials and equipment in well ventilated area with temperature range 7 degrees C to 30 degrees C.
- .8 Store temperature sensitive products above minimum temperature as recommended by manufacturer.
- .9 Keep areas used for storage, cleaning and preparation, clean and orderly to approval of Departmental Representative. After completion of operations, return areas to clean condition to approval of Departmental Representative.
- .10 Remove paint materials from storage only in quantities required for same day use.
- .11 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling storage, and disposal of hazardous materials.
- .12 Fire Safety Requirements:
 - .1 Provide one 9 kg Type ABC dry chemical fire extinguisher adjacent to storage area.
 - .2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
 - .3 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

.2 Waste Management and Disposal:

- .1 Paint, stain and wood preservative finishes and related materials (thinners, solvents, etc.) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
- .2 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
- .3 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
- .4 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into the ground the following procedures shall be strictly adhered to:
 - .1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
 - .2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
 - .3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
 - .4 Dispose of contaminants in an approved legal manner in accordance with hazardous waste regulations.
 - .5 Empty paint cans are to be dry prior to disposal or recycling (where available).

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- .5 Close and seal tightly partly used sealant and adhesive containers and store protected in well ventilated fire-safe area at moderate temperature.

1.10 Ambient
Conditions

- .1 Heating, Ventilation and Lighting:
 - .1 Provide temporary ventilating and heating equipment. Do not perform painting work unless adequate and continuous ventilation and sufficient heating facilities are in place to maintain ambient air and substrate temperatures above 10 degrees C for 24 hours before, during and after paint application until paint has cured sufficiently. In all cases, adhere to manufacturer's recommendations. NACE inspector will provide final recommendation to Departmental Representative with respect to whether or not cast iron sections are suitable for painting. In all cases, cooperate with the NACE inspector to ensure surfaces are suitable for painting.
 - .2 Where required, provide continuous ventilation for seven days after completion of application of paint.
 - .3 Perform no painting work unless a minimum lighting level of 323 Lux is provided on surfaces to be painted. Adequate temporary lighting facilities to be provided by General Contractor.
- .2 Temperature, Humidity and Substrate Moisture Content Levels:
 - .1 Unless specifically pre-approved by specifying body, Paint Inspection Agency and, applied product manufacturer, perform no painting work when:
 - .1 Ambient air and substrate

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

- temperatures are below 10 degrees C.
- .2 Substrate temperature is over 32 degrees C unless paint is specifically formulated for application at high temperatures.
- .3 Substrate and ambient air temperatures are expected to fall outside MPI or paint manufacturer's prescribed limits.
- .4 Relative humidity is above 85 % or when dew point is less than 3 degrees C variance between air/surface temperature.
- .5 Rain or snow is forecast to occur before paint has thoroughly cured or when it is foggy, misty, raining or snowing at site.
- .2 Perform no painting work when maximum moisture content of substrate exceeds that recommended by paint supplier.
- .3 Conduct moisture tests using a properly calibrated electronic Moisture Meter.
- .3 Surface and Environmental Conditions:
 - .1 Apply paint to adequately prepared surfaces and to surfaces within moisture limits noted herein.
 - .2 Apply paint when previous coat of paint is dry or adequately cured.
 - .3 Apply paint finishes when conditions forecast for entire period of application fall within manufacturer's recommendations.
 - .4 Do not apply paint when:
 - .1 Temperature is expected to drop below 10 degrees C before paint has thoroughly cured.
 - .2 Substrate and ambient air temperatures are expected to

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

fall outside MPI or paint
manufacturer's limits.

- .3 Surface to be painted is wet,
damp or frosted.
- .5 Provide and maintain cover when paint
must be applied in damp or cold
weather. Heat substrates and
surrounding air to comply with
temperature and humidity conditions
specified by manufacturer. Protect
until paint is dry or until weather
conditions are suitable.
- .6 Schedule painting operations such
that surfaces exposed to direct,
intense sunlight are scheduled for
completion during early morning.
- .7 Remove paint from areas which have
been exposed to freezing, excess
humidity, rain, snow or condensation.
Prepare surface again and repaint.

PART 2 PRODUCTS

2.1 Materials

- .1 Paint materials listed in latest edition
of MPI Approved Products List (APL) are
acceptable for use on this project.
- .2 Paint materials for paint systems: to be
products of single manufacturer.
- .3 Acceptable products (or approved
equivalents), are as follows:
 - .1 Steel railings at catwalk area (only
if approved by Departmental Representative
to remain - otherwise, replace new as per
drawings): Prime surface by applying 2
coats of Amerlock 2 Surface Tolerant Epoxy
Coating (or approved equivalent) at 5-7
mils dry film thickness per coat. Apply
one coat of Amershield High Solids
Polyurethane coating (or approved
equivalent) at 3-5 mils dry film
thickness.
 - .2 Cast iron tower (inside and outside):

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

Any blasted areas that show pitting are to be filled with Belzona 1111 Super Metal Paste Grade Metallic Filler (or approved equivalent). Pits should be filled flush with surrounding steel area prior to priming. Once all pitting has been addressed apply one coat of Amercoat 370 Epoxy (or approved equivalent) at 5 mils Dry Film Thickness. Apply one coat (by Plural Spray) of PPG Amerthane 490 Elastomeric Polyurea Hibrid Coating (or approved equivalent) at 80 Mils Dry Film Thickness. Apply one coat of PPG Amershield High Solids Polyurethane (or approved equivalent) at 3 Mils Dry Film Thickness.

- | | |
|--------------------|--|
| <u>2.2 Colours</u> | <ul style="list-style-type: none">.1 The intent is to match the existing colours (Coast Guard "red/white")..2 Selection of colours will be from manufacturers full range of colours..3 Where specific products are available in restricted range of colours, selection will be based on limited range. |
|--------------------|--|

PART 3 EXECUTION

- | | |
|-------------------------------------|--|
| <u>3.1 Manufacture Instructions</u> | <ul style="list-style-type: none">.1 Compliance: comply with manufacturer's written recommendations or specifications, including product technical bulletins, handling, storage and installation instructions, and datasheets. |
|-------------------------------------|--|

- | | |
|------------------------|---|
| <u>3.2 Preparation</u> | <ul style="list-style-type: none">.1 Perform preparation and operations for exterior painting in accordance with MPI Maintenance Repainting Manual except where specified otherwise..2 Apply paint materials in accordance with paint manufacturer's written application |
|------------------------|---|

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

instructions.

- .3 Clean and prepare exterior surfaces to be repainted in accordance with MPI Maintenance Repainting Manual requirements. Refer to the MPI Manual in regard to specific requirements and as follows:

- .1 Steel railing (only if approved by Departmental Representative to remain - otherwise, replace new as per drawings): Refer to Section 02 83 12 for specific requirements to limit occupational exposure to lead dust during paint removal activities associated with steel surfaces. Pressure wash or abrasive blast to remove all existing coatings that are on the steel surface. Power Tool Clean to SSPC-SP-11 to roughen the exposed surface and to remove all rust that has developed on the surface. Allow surfaces to drain completely and allow to dry thoroughly.

- .2 Cast iron tower: Refer to Section 02 83 12 for specific requirements to limit occupational exposure to lead dust during paint removal activities associated with cast iron surfaces. Abrasive blast clean the tower (inside and outside) to remove all existing paint. All abrasive blasting to be near-white metal blast in accordance with SSPC-SP10.

- .4 Prevent contamination of cleaned surfaces by salts, acids, alkalis, other corrosive chemicals, grease, oil and solvents before priming and between applications of remaining coats. Touch-up, spot prime, and apply primer, paint, or pre-treatment as soon as possible after cleaning and before deterioration occurs.

3.3 Protection

- .1 Protect factory finished products and equipment.
- .2 Protect passing pedestrians, and general

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

public in and about building.

- .3 Remove light fixtures, surface hardware on doors, and other surface mounted equipment, fittings and fastenings prior to undertaking painting operations. Store items and re-install after painting is completed.
- .4 As painting operations progress, place "WET PAINT" signs in pedestrian and vehicle traffic areas to approval of Departmental Representative.

3.4 Application

- .1 Method of application to be approved by Departmental Representative. Apply paint by brush, roller or sprayer. Conform to manufacturer's application instructions unless specified otherwise. Note that only painters with past experience in the application of plural spray will be permitted to paint the exterior/interior cast iron sections of the tower. Departmental Representative will make final decision in this regard, after a review of the proposed painters qualifications and past experience working in similar applications.
- .2 Spray Application:
 - .1 Provide and maintain equipment that is suitable for intended purpose, capable of properly atomizing paint to be applied, and equipped with suitable pressure regulators and gauges.
 - .2 Keep paint ingredients properly mixed in containers during paint application either by continuous mechanical agitation or by intermittent agitation as frequently as necessary.
 - .3 Apply paint in a uniform layer, with overlapping at edges of spray pattern. Brush out immediately runs and sags. Use

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

brushes to work paint into cracks,
crevices and places that are not
adequately painted by spray.

.3 Brush and Roller Application:

- .1 Apply paint in a uniform layer using brush and/or roller of types suitable for application.
- .2 Work paint into cracks, crevices and corners.
- .3 Paint surfaces and corners not accessible to brush using spray, daubers and/or sheepskins. Paint surfaces and corners not accessible to roller using brush, daubers or sheepskins.
- .4 Brush and/or roll out runs and sags, and over-lap marks. Rolled surfaces shall be free of roller tracking and heavy stipple unless approved by Departmental Representative.
- .5 Remove runs, sags and brush marks from finished work and repaint.
- .4 Apply coats of paint as continuous film of uniform thickness. Repaint thin spots or bare areas before next coat of paint is applied.
- .5 Allow surfaces to dry and properly cure after cleaning and between subsequent coats for minimum time period as recommended by manufacturer.
- .6 Sand and dust between coats to remove visible defects.
- .7 Finish surfaces both above and below sight lines as specified for surrounding surfaces, including such surfaces as projecting ledges.
- .8 Finish top, bottom, edges and cutouts of doors after fitting as specified for door surfaces.

Refurbishment of the
Bacalhao Island Light Tower, NL

F6879-165009

2016-06-01

3.5 Field
Quality Control

- .1 Inspection:
 - .1 Advise Departmental Representative when each surface and applied coating is ready for inspection. Do not proceed with subsequent coats until previous coat has been approved.

3.6 Cleaning

- .1 Proceed in accordance with Section 01 74 11 - Cleaning.
 - .1 Remove paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.

3.7 Restoration

- .1 Clean and re-install hardware items removed before undertaken painting operations.
- .2 Remove protective coverings and warning signs as soon as practical after operations cease.
- .3 Remove paint splashings on exposed surfaces that were not painted. Remove smears and spatter immediately as operations progress, using compatible solvent.
- .4 Protect freshly completed surfaces from paint droppings and dust to approval of Departmental Representative. Avoid scuffing newly applied paint.
- .5 Restore areas used for storage, cleaning, mixing and handling of paint to clean condition as approved by Departmental Representative.

Appendix A: Analytical Data of Paint Sample

Maxxam Job #: B2J5658
Report Date: 2013/02/27

AMEC Environment & Infrastructure
Client Project #: TF12076457
Site Location: BACALHAO ISLAND
Sampler Initials: CT

ELEMENTS BY ATOMIC SPECTROSCOPY (PAINT)

Maxxam ID		PY3129	PY3130	PY3131	PY3132	PY3133	PY3134		
Sampling Date		2012/11/22	2012/11/22	2012/11/22	2012/11/22	2012/11/22	2012/11/22		
	Units	BAC-PS-18	BAC-PS-19	BAC-PS-21	BAC-PS-22	BAC-PS-23	BAC-PS-24	RDL	QC Batch

Metals									
Acid Extractable Lead (Pb)	mg/kg	<5.0	<5.0	7500	3300	20000	2600	5.0	3070242
Acid Extractable Mercury (Hg)	mg/kg	<1.0	<1.0	23	9.2	50	2.7	1.0	3070242

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		PY3135	PY3136	PY3137	PY3138	PY3139		
Sampling Date		2012/11/22	2012/11/22	2012/11/22	2012/11/22	2012/11/22		
	Units	BAC-PS-25	BAC-PS-20	BAC-PS-DUP-1	BAC-PS-DUP-2	BAC-PS-DUP-3	RDL	QC Batch

Metals								
Acid Extractable Lead (Pb)	mg/kg	8.3	6.4	760	910	50000	5.0	3070242
Acid Extractable Mercury (Hg)	mg/kg	<1.0	<1.0	<1.0	<1.0	9.7	1.0	3070242

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Appendix B: General Pictures

