



Public Works and Government Services Canada

Requisition No: _____

DRAWINGS & SPECIFICATIONS
for

**Bird Deterrents for Main Substation
and Pump House**

Issued For Tender

December 22, 2016

Project No: R.016116.148

APPROVED BY:

Regional Manager, ___

Date

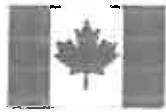
Construction Safety Coordinator

Date

TENDER:

Project Manager

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Regional Manager, 2/1/16 RWM

DEC 28/16
Date


Construction Safety Coordinator

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Date

TENDER:


Project Manager PER J. DISKA

16/12/28
Date

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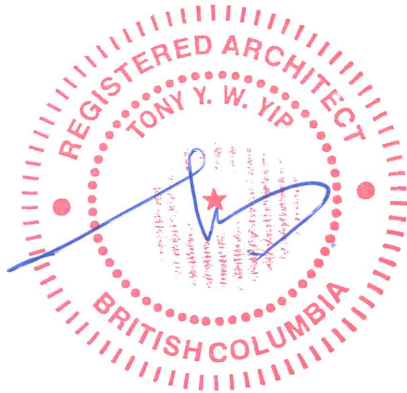
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CONSULTANTS – SEAL & SIGNATURE

Discipline

Seal/Signature/Date

Architectural (Prime)
Chernoff Thompson Architects



1.0 GENERAL

1.1 RELATED SECTIONS

- .1 General Instructions Section 01 11 55

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- .1 Work of this contract comprises of the supply and installation of new bird deterrents at the existing Pumphouse and Main Substation at Esquimalt Graving Dock, 825 Admirals Road, Victoria, B.C. Work is comprised of tasks listed in Section 01 11 55 item 1.2.1.

1.3 CONTRACT METHOD

- 1 Construct work under lump sum contract.

1.4 WORK BY OTHERS

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

1.5 WORK SEQUENCE

- .1 Construct work in stages to accommodate continued use of premises in immediate surrounding areas.
- .2 Do not close public usage of facilities which includes roadways, walkways and building access.

1.6 OWNER OCCUPANCY

- .1 During the entire construction period, the owner will have access to the two buildings for execution of normal operations.
- .2 Co-operate with Departmental Representative in scheduling operations to minimize conflict and to facilitate Owner usage of adjacent areas including those mentioned in 1.6.1. In the event of a conflict the contractor will accommodate changes to their operations to minimize interference with owner operations.

1.7 OWNER AND CONTRACTOR RESPONSIBILITIES

- .1 Owner Responsibilities:
 - .1 Remove all materials from contractor's work area, and provide information on any site specific work policies.
- .2 Contractor Responsibilities:
 - .1 Designate Submittals and delivery date for major building components and equipment in progress schedule.
 - .2 Review all submittals and contract requirements. As soon as it becomes apparent, submit to Departmental Representative written and verbal notification of observed discrepancies or problems anticipated due to non-conformance with Contract Documents.
 - .3 Provide any installation inspections required by public safety authorities and authority having jurisdiction.
 - .4 Receive and unload products and equipment at site.

SUMMARY OF WORK

- .5 Review deliveries jointly with Departmental Representative, record shortages, and damaged or defective items.
- .6 Handle product at site, including uncrating and storage.
- .7 Protect product from damage.
- .8 Repair or replace items damaged by Contractor or subcontractor on site (under their control).

1.8 HERITAGE VALUE

- .1 The two buildings, Pump House and Main Substation, are designated as 'Recognized' status under Federal Heritage Building Review Office. Extreme care must be taken not to damage or intrude into any Character Defining Elements except as shown on drawings. Refer to Appendix B for Heritage Character Statements of these two buildings.

END OF SECTION 01 11 00

1.0 GENERAL

1.1 CODES, BYLAWS, STANDARDS

- .1 Perform work in accordance with the National Building Code of Canada (NBCC) 2015, and other indicated Codes, Construction Standards and/or any other Code or Bylaw of local application.
- .2 Comply with applicable local bylaws, rules and regulations enforced at the location concerned.
- .3 Meet or exceed requirements of Contract documents, specified standards, codes and referenced documents.
- .4 In any case of conflict or discrepancy, the most stringent requirements shall apply.

1.2 DESCRIPTION OF WORK

- .1 Work under this Contract comprises, but is not limited to, the provision of all labour, materials, services and equipment necessary for the supply and installation of bird deterrent to the roof of the existing Pumphouse and Main Substation as fully described in the Tender Documents.

1.3 CONTRACT DOCUMENTS

- .1 The Contract documents, drawings and specifications are intended to complement each other.
- .2 Drawings are, in general, diagrammatic and are intended to indicate the scope and general arrangement of the work.

1.4 TIME OF COMPLETION

- .1 Commence work immediately upon official notification of acceptance of offer and complete the project within **ten (10) weeks** after contract award.

1.5 HOURS OF WORK

- .1 All work shall be executed during the normal operating hours of Esquimalt Graving Dock: Monday through Friday – 07:00 to 17:00 hours, excluding statutory holidays.
- .2 Submit written request to Departmental Representative for authorization prior to working outside of normal working hours.

1.6 WORK SCHEDULE

- .1 Submit Construction schedule in the form of Bar (Gantt) Chart within five (5) working days after award of contract and indicate shop drawings, material delivery, and installation time.

1.7 DIVISION OF SPECIFICATIONS

- .1 The specifications are subdivided in accordance with the current 6-digit National Master Specifications System.
- .2 A division may consist of the work of more than 1 subcontractor. Responsibility for determining which subcontractor provides the labour, material, equipment and services required to complete the work rests solely with the Contractor.

- .3 In the event of discrepancies or conflicts when interpreting the drawings and specifications, the specifications govern.

1.8 REGULATORY REQUIREMENTS

- .1 Furnish inspection certificates in evidence that the work installed conforms with the requirements of the authority having jurisdiction.
- .2 Comply with conditions as stated in Standard Acquisition Clauses and Conditions (SACC) Manual.

1.9 CONTRACTOR'S USE OF SITE

Esquimalt Graving Dock shall be assumed to be fully operational for the duration of the Contract.

- .1 Use of site:
 - .1 Exclusive and complete for execution of work.
 - .2 Assume responsibility for assigned premises for performance of this work.
 - .3 Be responsible for coordination of all work activities on site, including the work of other contractors engaged by the Departmental Representative.
 - .4 Provide security of Contractor's work site and all Contractors and Subcontractor's equipment and material. Secure Contractor's work site at the end of each work day.
 - .5 Perform work in accordance with the Contract documents. Ensure work is carried out in accordance with indicated phasing.
 - .6 Do not unreasonably encumber site with material or equipment
 - .7 Any area of the Esquimalt Graving Dock property to which access is restricted by sign is a secured or restricted area and shall not be entered.
 - .8 Do not obstruct access to other areas outside of the Contractor's work site. Maintain overhead clearances, keep roadways and walkways clear, and maintain routes for emergency response vehicles.
- .2 Perform work in accordance with Contract documents. Ensure work is carried out in accordance with approved schedules. Contractor's work site is indicated on the drawings.
- .3 Do not unreasonably encumber site with material or equipment. Contractor is designed as Prime Contractor on the Contractor's work site and assumes all responsibilities of Prime Contractor as per relevant acts and regulations. Contractor shall be responsible for all work on Contractor's work site.

1.10 EXAMINATION

- .1 Examine site and be familiar and conversant with existing conditions likely to affect work.
- .2 Become familiar with aspects of heritage building components that will need protection during period of work.

1.11 LOCATION OF EQUIPMENT AND FIXTURES

- .1 Location of equipment, fixtures and outlets indicated or specified are to be considered as approximate.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space, and in accordance with manufacturer's recommendations for safety, access and maintenance.

- .3 Inform Departmental Representative at least 48 hours prior to impending installation and obtain approval for actual location.
- .4 Submit field drawings or shop drawings to indicate the relative position of various services and equipment when required by the Departmental Representative and/or as specified.

1.12 CUTTING AND PATCHING

- .1 Cut existing surfaces as required to accommodate new work.
- .2 Remove items so shown or specified.
- .3 Do not cut, bore, or sleeve load-bearing members.
- .4 Make cuts with clean, true, smooth edges. Make patches inconspicuous in final assembly.
- .5 Patch and make good surfaces cut, damaged or disturbed, to Departmental Representative's approval. Match existing material, colour, finish and texture. Damages to brick and windows must meet heritage conservation repair standards. Prior to repair work, obtain written approval from Departmental Representative of any repair work involving brick, windows or any other heritage components. Submission of request for approval must state proposed procedures and methods as well as materials.
- .6 Making good is defined as matching construction and finishing materials and the adjacent surfaces such that there is no visible difference between existing and new surfaces when viewed from 1.5 metres in ambient light, and includes painting the whole surface to the next change in plane.

1.13 SETTING OUT OF WORK

- 1 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated.
- .2 Provide devices needed to lay out and construct work.
- .3 Supply such devices as templates required to facilitate Departmental Representative's inspection of work.

1.14 ACCEPTANCE OF SUBTRADES

- .1 Each trade shall examine surfaces prepared by others and job conditions which may affect his work, and shall report defects to the Contractor. Commencement of work shall imply acceptance of prepared work or substrate surfaces.

1.15 QUALITY OF WORK

- .1 Ensure that quality workmanship is performed through use of skilled tradesmen, under supervision of qualified journeyman.
- .2 The workmanship, erection methods and procedures to meet minimum standards set out in the National Building Code of Canada 2015 and Construction Standards as specified herein.
- .3 In cases of dispute, decisions as to standard or quality of work rest solely with the Departmental Representative, whose decision is final.

1.16 WORKS COORDINATION

- .1 Coordinate work of sub-trades:
 - .1 Designate one person to be responsible for review of contract documents and shop drawings and managing coordination of Work.
- .2 Convene meetings between subcontractors whose work interfaces and ensure awareness of areas and extent of interface required.
 - .1 Provide each subcontractor with complete plans and specifications for Contract, to assist them in planning and carrying out their respective work.
 - .2 Develop coordination drawings when required, illustrating potential interference between work of various trades and distribute to affected parties.
 - .1 Pay particularly close attention to overhead work above ceilings and within or near to building structural elements.
 - .2 Identify on coordination drawings, building elements, services lines, rough-in points and indicate location services entrance to site.
 - .3 Facilitate meeting and review coordination drawings. Ensure subcontractors agree and sign off on drawings.
 - .4 Publish minutes of each meeting.
 - .5 Plan and coordinate work in such a way to minimize quantity of service line offsets.
 - .6 Submit copy of coordination drawings and meeting minutes to Departmental Representative for information purposes.
- .3 Submit shop drawings and order of prefabricated equipment or rebuilt components only after coordination meeting for such items has taken place.
- .4 Work cooperation:
 - .1 Ensure cooperation between trades in order to facilitate general progress of Work and avoid situations of spatial interference.
 - .2 Ensure that each trade provides all other trades reasonable opportunity for completion of Work and in such a way as to prevent unnecessary delays, cutting, patching and removal or replacement of completed work.
 - .3 Ensure disputes between subcontractors are resolved.
 - .4 Departmental Representative is not responsible for, or accountable for extra costs incurred as a result of Contractor's failure to coordinate Work.
 - .5 Maintain efficient and continuous supervision.

1.17 APPROVAL OF SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- .1 In accordance with Section 01 33 00, submit the requested shop drawings, product data, MSDS sheets and samples indicated in each of the technical Sections.
- .2 Allow sufficient time for the following:
 - .1 Review of product data.
 - .2 Approval of shop drawings.
 - .3 Review of re-submission.
 - .4 Ordering of approved material and/or products. Refer to individual technical sections of specifications.

1.18 RELICS & ANTIQUITIES

- .1 Relics and antiquities and items of historical or scientific interest shall remain property of the Crown. Protect such articles and request directives from Departmental Representative.

- .2 Give immediate notice to Departmental Representative if evidence of archaeological discoveries are encountered during excavation/construction, and await Departmental Representative's written instructions before proceeding with work in this area.

1.19 SECURITY CLEARANCES

- .1 Personnel employed on this project will be subject to security check. Obtain requisite clearances, as instructed, for each individual required to enter the premises.

1.20 AS-BUILT DOCUMENTS

- .1 The Departmental Representative will provide two (2) sets of drawings and two (2) sets of specifications, including 1 set of drawings and specification for "as-built" purposes and one (1) electronic copy of the original AutoCAD files for "as-built" purposes.
- .2 Keep one set of current white prints of all contract drawings and all addenda, revisions, clarifications, change orders, and reviewed shop drawings in the site office; and have them available at all times for inspection by the Consultant.
- .3 As the Work progresses, maintain accurate records to show all deviations from the Contract documents. Note on as-built specifications, drawings and shop drawings as changes occur.
- .4 At completion of the Work, transfer all deviations, including those called up by addenda, revisions, clarifications, shop drawings and change order, to a set of Issued for Construction drawings. Submit the 'red-marked' as-built set to the Departmental Representative in hard copy with contractor's review stamp and date confirming that the set submitted are a true record of "as-built" information.
- .5 Refer to Section 01 78 00 – Close-out Submittals. Submit one (1) electronic copy of as-built drawings in format compatible with AutoCAD 2013.

1.21 CLEANING

- .1 Conduct daily cleaning and disposal operations. Comply with location ordinances and anti-pollution laws.
- .2 Ensure cleanup of the work areas each day after completion of work.

1.22 DUST CONTROL

- .1 Provide temporary dust tight screens or partitions to localize dust generating activities, and for protection of workers, finished areas of work and public.
- .2 Contain and collect all dust generated from drilling activities using HEPA filtered vacuum.

1.23 ENVIRONMENTAL PROTECTION

- .1 Prevent extraneous materials from contaminating air beyond construction area, by providing temporary enclosures during work.
- .2 Do not dispose of waste or volatile materials into water courses, storm or sanitary sewers.
- .3 Ensure proper disposal procedures in accordance with all applicable Municipal, Provincial, and Federal regulations and relevant Acts.

1.24 MAINTENANCE MATERIALS, SPECIAL TOOLS AND SPARE PARTS

- .1 Specific requirements for maintenance materials, tools and spare parts are specified in individual technical sections of specifications.

1.25 ADDITIONAL DRAWINGS

- .1 The Departmental Representative may furnish additional drawings for clarification. These additional drawings have the same meaning and intent as if they were included with drawings referred to in the Contract Documents.
- .2 Departmental Representative will furnish up to a maximum of three (3) sets of Contract Documents for use by the Contractor at no additional cost. Should more than three (3) sets of documents be required, the Departmental Representative can provide them at additional cost.

1.26 SMOKING

- .1 Smoking within the Contractor's work site is not permitted.
- .2 Smoking is only allowed in designated locations within EGD.

1.27 SYSTEM OF MEASUREMENT

- .1 The metric system of measurement (SI) will be employed on this Contract.

1.28 FAMILIARIZATION WITH SITE

- .1 Before submitting tender, visit site as indicated in tender documents and become familiar with all conditions likely to affect the cost of the work.

1.29 SUBMISSION OF TENDER

- .1 Submission of a tender is deemed to be confirmation of the fact that the Tenderer has analyzed the Contract documents and inspected the site, and is fully conversant with all conditions.

1.30 COST BREAKDOWN

- .1 Before submitting the first progress claim, submit a breakdown of the Contract price in detail as directed by the Departmental Representative and aggregating Contract price. After approval, the cost breakdown will form the basis of progress payments.
- .2 Within 10 days after award of contract, provide a monthly cash flow projection for the whole contract period in detail as directed by Departmental Representative. Contractor should provide a monthly update of the cash flow projection according to the actual work schedule and progress payment submitted.

1.0 GENERAL

1.1 ADMINISTRATIVE

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

1.2 SHOP DRAWINGS AND PRODUCT DATA

- .1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.
- .2 When specified in the Contract document, submit drawings stamped and signed by professional engineer registered or licensed in Province of British Columbia of Canada.
- .3 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

SUBMITTAL PROCEDURES

- .4 Allow 10 days for Departmental Representative's review of each submission, unless noted otherwise.
- .5 Adjustments made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Departmental Representative prior to proceeding with Work.
- .6 Make changes in shop drawings as Departmental Representative may require consistent with Contract Documents. When resubmitting, notify Departmental Representative in writing of revisions other than those requested.
- .7 Accompany submissions with transmittal letter, in duplicate, containing:
 - .1 Date.
 - .2 Project title and number.
 - .3 Contractor's name and address.
 - .4 Identification and quantity of each shop drawing, product data and sample.
 - .5 Other pertinent data.
- .8 Submissions include:
 - .1 Date and revision dates.
 - .2 Project title and number.
 - .3 Name and address of:
 - .1 Subcontractor.
 - .2 Supplier.
 - .3 Manufacturer.
 - .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.
 - .5 Details of appropriate portions of Work as applicable:
 - .1 Fabrication.
 - .2 Layout, showing dimensions, including identified field dimensions, and clearances.
 - .3 Setting or erection details.
 - .4 Capacities.
 - .5 Performance characteristics.
 - .6 Standards.
 - .7 Operating weight.
 - .8 Wiring diagrams.
 - .9 Single line and schematic diagrams.
 - .10 Relationship to adjacent work.
- .9 After Departmental Representative's review, distribute copies.
- .10 Submit electronic copy of shop drawings for each requirement requested in specification sections and as Departmental Representative may reasonably request.
- .11 Submit electronic copies of product data sheets or brochures for requirements requested in specification Sections and as requested by Departmental Representative where shop drawings will not be prepared due to standardized manufacture of product.
- .12 Submit electronic copies of test reports for requirements requested in specification Sections and as requested by Departmental Representative.
 - .1 Report signed by authorized official of testing laboratory that material, product or

SUBMITTAL PROCEDURES

- system identical to material, product or system to be provided has been tested in accord with specified requirements.
- .2 Testing must have been within 3 years of date of contract award for project.
- .13 Submit electronic copies of certificates for requirements requested in specification Sections and as requested by Departmental Representative.
- .1 Statements printed on manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that product, system or material meets specification requirements.
- .2 Certificates must be dated after award of project contract complete with project name.
- .14 Submit electronic copies of manufacturers instructions for requirements requested in specification Sections and as requested by Departmental Representative.
- .1 Pre-printed material describing installation of product, system or material, including special notices and Material Safety Data Sheets concerning impedances, hazards and safety precautions.
- .15 Submit copies of Manufacturer's Field Reports for requirements requested in specification Sections and as requested by Departmental Representative.
- .16 Documentation of the testing and verification actions taken by manufacturer's representative to confirm compliance with manufacturer's standards or instructions.
- .17 Submit electronic copies of Operation and Maintenance Data for requirements requested in specification Sections and as requested by Departmental Representative.
- .18 Delete information not applicable to project.
- .19 Supplement standard information to provide details applicable to project.
- .20 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections are made, electronic copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.
- .21 The review of shop drawings by Departmental Representative is for sole purpose of ascertaining conformance with general concept.
- .1 This review shall not mean that Departmental Representative approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting requirements of Construction and Contract Documents.
- .2 Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of Work of sub-trades.
- .22 Shop drawings format larger than 11" x 17" (275mm x 430mm) must be submitted with one (1) hardcopy together with electronic format.

SUBMITTAL PROCEDURES

- .23 Electronic submissions will only be reviewed and returned electronically. No hardcopies will be returned to contractor.

1.3 SAMPLES

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

1.4 MOCK-UPS

- .1 Erect mock-up of extendable pole with fabricated pipe guard, concrete paver and roofing protection at location directed by Departmental Representative.

1.5 PHOTOGRAPHIC DOCUMENTATION

- .1 Submit electronic copy of colour digital photography in jpg format, standard resolution monthly with progress statement and as directed by Departmental Representative.
- .2 Project identification: name and number of project and date of exposure indicated.
- .3 Viewpoints and their locations as reasonably determined by Departmental Representative.
- .4 Provide photographic documentation of adjacent existing conditions prior to commencement of construction for determining and accidental damage as a result of contractor's work.
- .5 Frequency of photographic documentation: monthly as directed by Departmental Representative.
- .1 Provide photographic documentation clearly showing before, during and at completion of Work.
- .2 Photographic documentation shall be detailed and of adequate volume to clearly show various stages of construction, sequence of construction, installation of all components, and completion of finished work.

1.6 CERTIFICATES AND TRANSCRIPTS

- .1 Submit electronic copies of test results and inspection reports required as noted in each section of specifications.

1.0 GENERAL

1.1 REFERENCES

- .1 Government of Canada.
 - .1 Canada Labour Code - Part II
 - .2 Canada Occupational Health and Safety Regulations.
- .2 National Building Code of Canada (NBC):
 - .1 Part 8, Safety Measures at Construction and Demolition Sites.
- .3 Canadian Standards Association (CSA) as amended:
 - .1 CSA Z797-2009 Code of Practice for Access Scaffold
 - .2 CSA S269.1-1975 (R2003) Falsework for Construction Purposes
 - .3 CSA S350-M1980 (R2003) Code of Practice for Safety in Demolition of Structure
 - .4 CSA Z1006-10 – Management of Work In Confined Space
- .4 National Fire Code of Canada 2010 (as amended)
 - .1 Part 5 – Hazardous Processes and Operations and Division B as applicable and required.
- .5 American National Standards Institute (ANSI):
 - .1 ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.
- .6 Province of British Columbia:
 - .1 Workers Compensation Act Part 3-Occupational Health and Safety.
 - .2 Occupational Health and Safety Regulation
- .7 NMS Section 00 10 10 Specification Index (Appendix A thru Appendix E)

1.2 RELATED SECTIONS

- .1 Submittal Procedures Section 01 33 00
- .2 Temporary Facilities Section 01 51 00

1.3 WORKERS' COMPENSATION BOARD COVERAGE

- .1 Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the work.
- .2 Maintain Workers' Compensation Board coverage during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

1.4 COMPLIANCE WITH REGULATIONS

- .1 PSPC may terminate the Contract without liability to PSPC where the Contractor, in the opinion of PSPC, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.
- .2 It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.

1.5 SUBMITTALS

HEALTH & SAFETY REQUIREMENTS

- .1 Submit to Departmental Representative submittals listed for review. In accordance with Section 01 33 00
- .2 Work effected by submittal shall not proceed until review is complete.
- .3 Submit the following:
 - .1 Site Specific Health and Safety Plan.
 - .2 Copies of reports or directions issued by Federal and Provincial health and safety inspectors.
 - .3 Copies of incident and accident reports.
 - .4 Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Material Information System (WHMIS) requirements.
 - .5 Copy of Contractors' Construction Safety Manual
 - .6 Emergency Procedures
- .4 The Departmental Representative will review the Contractor's Site Specific Project Health and Safety Plan and Emergency Procedures, and provide comments to the Contractor within 5 (five) days after receipt of the plan. Revise the plan as appropriate and resubmit to Departmental Representative.
- .5 Medical surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of work, and submit additional certifications for any new site personnel to Departmental Representative.
- .6 Submission of the Site Specific Health and Safety Plan, and any revised version, to the Departmental Representative is for information and reference purposes only. It shall not:
 - .1 Be construed to imply approval by the Departmental Representative.
 - .2 Be interpreted as a warranty of being complete, accurate and legislatively compliant.
 - .3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

1.6 RESPONSIBILITY

- .1 Assume responsibility as the Prime Contractor for work under this contract.
- .2 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.
- .3 Comply with and enforce compliance by employees with safety requirements of Contract documents, applicable Federal, Provincial, Territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.7 HEALTH AND SAFETY COORDINATOR

- .1 The contractor shall appoint a Health and Safety Coordinator who shall:
 - .1 Be responsible for completing all health and safety training, and ensuring that personnel that do not successfully complete the required training are not permitted to enter the site to perform work.
 - .2 Be responsible for implementing, daily enforcing, and monitoring the site-specific Health and Safety Plan.
 - .3 Be on site during execution of work.

1.8 GENERAL CONDITIONS

- .1 Provide safety barricades and lights around the Contractor's Work Site (as required) and the Contractor Off-Site Offload Facility (as required) to provide a safe working environment for workers and protection for pedestrian and vehicular traffic.
- .2 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work sites.
 - .1 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel, and temporary lighting as required.
 - .2 Secure site at night time as deemed necessary to protect site against entry.

1.9 Utility Clearances

- .1 The Contractor is solely responsible for all utility detection and clearances prior to starting the work.
- .2 The Contractor will not rely solely upon the Reference Drawings or other information provided for utility locations.

1.10 PROJECT/SITE CONDITIONS

- .1 The Esquimalt Graving Dock is a dry dock and ship repair facility. It is an industrial site wherein industrial, manufacturing, fabrication, heavy construction, and like works are conducted by a variety of contractors and sub-trades for a variety of owners and sub-trades for a variety of owners and/or PWGSC.
- .2 Work at site will involve a number of hazards known to PWGSC as noted in the Preliminary Hazard Assessment Form. This site may involve contact with hazardous and/or toxic materials and substances such as, but not limited to:
 - .1 Waste sandblast grit.
 - .2 Paint spray, including solvents and mineral spirits.
 - .3 Waste water.
 - .4 Contaminated soils and debris.
 - .5 Polychlorinated biphenyl (PCB).
 - .6 Creosote and creosote materials.
 - .7 Asbestos.
 - .8 Lead paints and other paints containing toxic substances such as arsenic and carcinogens.
- .3 Other safety hazards or risks which may be encountered include, but are not limited to:
 - .1 Contact with traveling and mobile cranes, forklifts, manlifts and other motorized vehicles.
 - .2 Overhead hazards such as that created by material transported by cranes.
 - .3 Fall hazards.
 - .4 Drowning hazards.
 - .5 Confined space hazards.
 - .6 Electrical hazards.
 - .7 Contact with operating mechanical, electrical, electronic, pneumatic, thermal, and hydraulic machinery and equipment.
 - .8 Fire hazards.

1.11 REGULATORY REQUIREMENTS

- .1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe

operations at site.

- .2 In event of conflict between any provision of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the Departmental Representative will advise on the course of action to be followed.

1.12 WORK PERMITS

- .1 Obtain specialty permits related to project before start of work.

1.13 FILING OF NOTICE

- .1 The Prime Contractor is to complete and submit a Notice of Project as required by Provincial authorities.
- .2 Provide copies of all notices to the Departmental Representative.

1.14 HEALTH AND SAFETY PLAN

- .1 Conduct a site-specific hazard assessment for the Contractor's Work Site and the Contractors' Off-Site Offload Facility (as required), based on a review of Contract documents, required work, and both project work sites. Identify any known and potential health risks and safety hazards.
- .2 Develop, implement, and enforce a Site Specific Project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:
 - .1 Primary requirements:
 - .1 Contractor's safety policy.
 - .2 Identification of applicable compliance obligations.
 - .3 Definition of responsibilities for project safety/organization chart for project.
 - .4 General safety rules for project.
 - .5 Job-specific safe work, procedures.
 - .6 Inspection policy and procedures.
 - .7 Incident reporting and investigation policy and procedures.
 - .8 Occupational Health and Safety Committee/Representative procedures.
 - .9 Occupational Health and Safety meetings.
 - .10 Occupational Health and Safety communications and record keeping procedures.
 - .2 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.
 - .3 List hazardous materials to be brought on site as required by work.
 - .4 Indicate Engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.
 - .5 Identify personal protective equipment (PPE) to be used by workers.
 - .6 Identify personnel and alternates responsible for site safety and health.
 - .7 Identify personnel training requirements and training plan, including site orientation for new workers.
- .3 Develop the Site Specific project health and Safety Plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.
- .4 Revise and update Site Specific Project Health and Safety Plan as required, and re-submit to the Departmental Representative.

- .5 Departmental Representative's review: the review of the contractors' Site Specific Safety Project Health and Safety Plan by Public Services and Procurement Canada (PSPC) shall not relieve the Contractor of responsibility for errors or omissions in final Site Specific Project Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract documents.

1.15 EMERGENCY PROCEDURES

- .1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:
 - .1 Designated personnel from own company.
 - .2 Regulatory agencies applicable to work and as per legislated regulations.
 - .3 Local emergency resources.
 - .4 Departmental Representative and other PSPC staff as required.
- .2 Include the following provisions in the emergency procedures:
 - .1 Notify workers and the first-aid attendant, of the nature and location of the emergency.
 - .2 Evacuate all workers safely.
 - .3 Check and confirm the safe evacuation of all workers.
 - .4 Notify the fire department or other emergency responders.
 - .5 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
 - .6 Notify Departmental Representative and PSPC site staff.
- .3 Provide written rescue/evacuation procedures as required for, but not limited to:
 - .1 Work at high angles
 - .2 Work in confined spaces or where there is a risk of entrapment.
 - .3 Work with hazardous substances.
 - .4 Underground work.
 - .5 Work on, over, under and adjacent to water
 - .6 Workplaces where there are persons who require physical assistance to be moved.
- .4 Design and mark emergency exit routes to provide quick and unimpeded exit.
- .5 At least once each year, emergency drills must be held to ensure awareness and effectiveness of emergency exit routes and procedures, and a record of the drills must be kept
- .6 Revise and update emergency procedures as required, and re-submit to the Departmental Representative

1.16 HAZARDOUS PRODUCTS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and regarding labeling and provision of Material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.
- .2 Where use of hazardous and toxic products cannot be avoided:
 - .1 Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents as per [Section 013300].
 - .2 In conjunction with Departmental Representative, schedule to carry out work

- during "off hours" when tenants have left the building.
- .3 Provide adequate means of ventilation in accordance with NMS Sections as indicated in Section 000110 Specification Index.

1.17 OFFSITE CONTINGENCY AND EMERGENCY RESPONSE PLAN

- .1 Prior to commencing Work involving handling of hazardous materials, develop off site Contingency and Emergency Response Plan.
- .2 Plan must provide immediate response to serious site occurrence such as explosion, fire, or migration of significant quantities of toxic or hazardous material from Site.
- .3 Notification of fire departments [4.17 – Worksafe BC Regulations Part 4 Buildings, Structures, Equipment, and Site Conditions]
- (1) An employer having at a workplace hazardous products covered by WHMIS, explosives, pesticides, radioactive material, consumer products or hazardous wastes in quantities which may endanger firefighters, must ensure the local fire department is notified of the nature and location of the hazardous materials or substances and methods to be used in their safe handling.
- (2) Subsection (1) does not apply to a workplace
- (a) where materials are kept on site for less than 15 days if the employer ensures an alternative effective means for notification of fire departments is in place in the event of fire or other emergency, or
- (b) which is not within the service area of a fire department.
- [Amended by B.C. Reg. 30/2015, effective August 4, 2015.]

1.18 PERSONNEL HEALTH, SAFETY, AND HYGIENE

- .1 Training: ensure personnel entering Site are trained in accordance with specified personnel training requirements. Training session must be completed by Health and Safety Officer.
- .2 Levels of Protection: establish levels of protection for each Work area based on planned activity and location of activity.
- .3 Personal Protective Equipment
- .4 Furnish site personnel with appropriate PPE as specified above. Ensure that safety equipment and protective clothing is kept clean and maintained
- .5 Develop protective equipment usage procedures and ensure that procedures are strictly followed by site personnel; include following procedures as minimum:
- .6 Ensure prescription eyeglasses worn are safety glasses and do not permit contact lenses on site within work zones.
- .7 Ensure footwear is steel-toed safety shoes or boots and is covered by rubber overshoes when entering or working in potentially contaminated work areas.
- .8 Dispose of or decontaminate PPE worn on site at end of each workday.
- .9 Decontaminate reusable PPE before reissuing.
- .10 Ensure site personnel have passed respirator fit test prior to entering potentially contaminated work areas.

- .11 Ensure facial hair does not interfere with proper respirator fit.

Respiratory Protection:

1. Provide site personnel with extensive training in usage and limitations of, and qualitative fit testing for, air purifying and supplied-air respirators in accordance with specified regulations.
2. Develop, implement, and maintain respirator program.
3. Monitor, evaluate, and provide respiratory protection for site personnel.
4. Ensure levels of protection as listed have been chosen consistent with site-specific potential airborne hazards associated with major contaminants identified on site.
5. In absence of additional air monitoring information or substance identification, retain an industrial hygiene specialist to determine minimum levels of respiratory protection required.
6. Immediately notify Departmental Representative when level of respiratory protection required increases.
7. Ensure appropriate respiratory protection during Work activities. As minimum requirement, ensure that persons entering potentially contaminated work areas are supplied with and use appropriate respiratory protection.

Heat Stress/Cold Stress:

Implement heat stress or cold stress monitoring program as applicable and include in site-specific Health and Safety Plan.

Personnel Hygiene and Personnel Decontamination Procedures.

Provide minimum as follows:

1. Suitable containers for storage and disposal of used disposable PPE.
2. Potable water and suitable sanitation facility.

Emergency and First-Aid Equipment:

1. Locate and maintain emergency and first-aid equipment in appropriate location on site including first-aid kit to accommodate number of site personnel; portable emergency eye wash; 9 kg ABC type dry chemical fire extinguishers as required.

1.19 ASBESTOS HAZARD

- .1 Modifications to spray- or trowel-applied asbestos surfaces can be hazardous to health.
- .2 Removal and handling of asbestos will be performed as per Worksafe B.C. Regulations Part 6 Substance Specific Requirements Asbestos and all applicable regulations.

1.20 PCB REMOVALS

- .1 Mercury-containing fluorescent tubes and ballasts which contain polychlorinated biphenyls (PCBs) are classified as hazardous waste.
- .2 Remove, handle, transport and dispose of as indicated in Section 00 01 10 Specification Index.

1.21 REMOVAL OF LEAD-CONTAINING PAINTS

- .1 All paints containing TCLP lead concentrations above 5 ppm are classified as hazardous.
- .2 Carry out demolition activities involving lead-containing paints in accordance with Worksafe B.C. Regulations Part 6 Substance Specific Requirements Lead and all

applicable regulations.

1.22 ELECTRICAL SAFETY REQUIREMENTS

- .1 Comply with authorities and ensure that, when installing new facilities or modifying existing facilities, all electrical personnel are completely familiar with existing and new electrical circuits and equipment and their operation.
 - .1 Before undertaking any work, coordinate required energizing and de-energizing of new and existing circuits with Departmental Representative.
 - .2 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under this Contract, as well as safety of other personnel on site.
 - .3 Develop, implement and enforce a communication plan with Departmental representative and EGD maintenance staff for all electrical work and lockout procedures.

1.23 ELECTRICAL LOCKOUT

- .1 Develop, implement and enforce use of established procedures to provide electrical lockout and to ensure the health and safety of workers for every event where work must be done on any electrical circuit or facility.
- .2 Prepare the lockout procedures in writing, listing step-by-step processes to be followed by workers, including how to prepare and issue the request/authorization form. Have procedures available for review upon request by the Departmental Representative.
- .3 Keep the documents and lockout tags at the site and list in a log book for the full duration of the Contract. Upon request, make such data available for viewing by Departmental Representative or by any authorized safety representative.

1.24 OVERLOADING

- .1 Ensure no part of work is subjected to a load which will endanger its safety or will cause permanent deformation.

1.25 FALSEWORK

- .1 Design and construct falsework in accordance with CSA S269.1- 1975 (R2003).

1.26 SCAFFOLDING

- .1 Design, construct and maintain scaffolding in a rigid, secure and safe manner, in accordance with CSA Z797-2009 and B.C. Occupational Health and Safety Regulations.

1.27 CONFINED SPACES

- .1 Carry out work in confined spaces in compliance with Worksafe B.C. Part 9 Confined Spaces and CSA Z1006-10 Management of Work in Confined Space.

1.28 RESTRICTED ACCESS

- .1 Contractor shall perform a hazard assessment and develop an appropriate restricted access entry plan in accordance with Worksafe B.C. regulations.

1.29 CONFINED SPACE AND RESTRICTED SPACE OUTSIDE OF DEFINED WORK SITE

- .1 Carry out work in confined spaces in compliance with Worksafe B.C. Part 9 Confined Spaces and CSA Z1006-10 Management of Work in Confined Space. Coordinate all confined space entry work with PSPC Departmental Representative through the contractor's confined space entry permit system.

- .2 Contractor shall perform a hazard assessment and develop an appropriate restricted access entry plan in accordance with Worksafe B.C. regulations. Coordinate all restricted access space entry work with the PSPC Departmental Representative prior to entry.
- .3 The Contractor is required to provide a reasonable amount of time to the Departmental Representative for making arrangements for entry and/or access to Confined Space or Restricted Access spaces located outside the designated work site.

1.30 POWDER-ACTUATED DEVICES

- .1 Use powder-actuated devices in accordance with ANSI A10.3 only after receipt of written permission from the Departmental Representative.

1.31 FIRE SAFETY AND HOT WORK

- .1 Coordinate all hot work with PSPC Departmental Representative through the contractors' hot work permit system
- .2 Obtain Departmental Representative's authorization before any welding, cutting or any other hot work operations can be carried out on site.
- .3 Hot work includes cutting/melting with use of torch, flame heating roofing kettles, or other open flame devices and grinding with equipment which produces sparks.

1.32 FIRE SAFETY REQUIREMENTS

- .1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.
- .2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

1.33 FIRE PROTECTION AND ALARM SYSTEM

- .1 Fire protection and alarm systems shall not be:
 - .1 Obstructed.
 - .2 Shut off.
 - .3 Left inactive at the end of a working day or shift.
- .2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.
- .3 Be responsible/liable for costs incurred from the fire department, the building owner and the tenants, resulting from false alarms.

1.34 UNFORESEEN HAZARDS

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

1.35 POSTED DOCUMENTS

- .1 Post legible versions of the following documents on site:
 - .1 Site Specific Health and Safety Plan.
 - .2 Sequence of work.
 - .3 Emergency procedures.

- .4 Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.
 - .5 Notice of Project.
 - .6 Floor plans or site plans.
 - .7 Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.
 - .8 Workplace Hazardous Materials Information System (WHMIS) documents.
 - .9 Material Safety Data Sheets (MSDS).
 - .10 List of names of Qualified Health and Safety Coordinator, Joint Health and Safety Committee members, or Health and Safety Representative, as applicable.
- .2 Post all Material Safety Data Sheets (MSDS) on site, in a common area, visible to all workers and in locations accessible to tenants when work of this Contract includes construction activities adjacent to occupied areas.
 - .3 Postings should be protected from the weather, and visible from the street or the exterior of the principal construction site shelter provided for workers and equipment, or as approved by the Departmental Representative.

1.36 MEETINGS

- .1 Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.
- .2 All personnel employed by the contractor and its subcontractors shall attend the mandatory EGD Safety Orientation presentation prior to performing Work at the EGD Work Site.

1.37 CORRECTION OF NON-COMPLIANCE

- .1 Immediately address health and safety non-compliance issues identified by the Departmental Representative.
- .2 Provide Departmental Representative with written report of action taken to correct non-compliance with health and safety issues identified.
- .3 The Departmental Representative may issue a "stop work order" if non-compliance of health and safety regulations is not corrected immediately or within posted time. The Contractor will be responsible for any costs arising from such a "stop work order".

1.0 GENERAL

1.1 DEFINITIONS

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

1.2 SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative. Environmental Protection Plan is to present comprehensive overview of known or potential environmental issues which must be addressed during construction.
- .3 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .4 Environmental protection plan to include:
 - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting contaminated materials and hazardous waste to be removed from site.
 - .3 Names and qualifications of persons responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.
 - .5 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
 - .6 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, do not become air borne and travel off project site.
 - .7 Contaminant prevention plan that: identifies potentially hazardous substances to be used on job site; identifies intended actions to prevent introduction of such materials into air, water, or ground; and details provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.

1.3 FIRES

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

1.4 WASTE MANAGEMENT AND DISPOSAL

- .1 Accomplish maximum control of construction waste to preserve environment and prevent pollution and environmental damage.
 - .1 All disposal, recycling and waste manifests shall be provided to the Departmental Representative.
- .2 Identify opportunities for waste reduction, reuse, and recycling of materials.

- .3 Provide on-site facilities for collection, handling, and storage of anticipated quantities of reusable and recyclable materials.
- .4 Provide containers to deposit reusable and recyclable materials.
- .5 Collect handle, store on-site, and transport off-site, salvaged materials in separated condition.
- .6 Store materials to be reused, salvaged, and salvaged in locations as directed by the Departmental Representative.
- .7 Unless otherwise specified, materials for removal become Contractors property.
- .8 Separate non-salvageable materials from salvaged items. Transport and deliver non-salvageable items to licensed disposal facility.
- .9 Do not bury rubbish and waste materials on site.
- .10 Do not dispose of wastes into water courses, storm, or sanitary sewers.

1.5 WORK ADJACENT TO WATERWAY

- .1 Do not dump waste material or debris in waterways.
- .2 Maintain fully stocked spill kit(s) on site at all times if mobile equipment or machinery is being used during execution of the Work.

1.6 NOTIFICATION

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

1.7 PROJECT CLEANLINESS

- .1 Maintain Work in tidy condition, free from accumulation of waste products and debris, including that caused by owner or other Contractors.
- .2 Remove waste materials from site at daily regularly scheduled times or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.
- .3 Provide on-site containers for collection of waste materials and debris.
- .4 Provide and use marked separate bins for recycling.
- .5 Dispose of waste materials and debris off site.

- .6 Clean project areas prior to start of finishing work, and maintain areas free of dust and other contaminants during finishing operations.
- .7 Store volatile waste in covered metal containers, and remove from premises at end of each working day.
- .8 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

1.8 FINAL CLEANING

- .1 When Work is Substantially Performed remove surplus products, tools, construction machinery and equipment not required for performance of remaining work.
- .2 Remove waste products and debris other than that caused by others, and leave Work and roof clean.
- .3 Prior to final review remove surplus products, tools, construction machinery and equipment.
- .4 Remove all waste materials from site or dispose of as directed by Departmental Representative. Do not burn waste materials on site, unless approved by Departmental Representative.

END OF SECTION 01 35 43

TEMPORARY FACILITIES

1.0 GENERAL

1.1 ACCESS AND DELIVERY

- .1 Only the designated entrance may be used for access to the site. The designated entry and exit will be via the Main Esquimalt Graving Dock gate on Admirals Road, along the North Main Entrance Roadway, and along the north side of the dry dock. Access to the south side of the dock will be only by special permission from the Departmental Representative.
- .2 Vehicular movement in and out of the Esquimalt Graving Dock will pass through check points and be monitored by EGD security. All Contractor's and Subcontractor's staff must carry current photo identification and a PWGSC security pass.
- .3 Contractor is required to use only the designated entrance to access the work site, for deliveries to site, and as the exit for offsite disposal.
 - .1 Maintain for duration of contract.
 - .2 Make good damage resulting from Contractor's use.
- .4 Use of the Esquimalt Graving Dock facility will be granted to the Contractor through the Departmental Representative.
 - .1 The contractor's work site is to be used for loading and unloading purposes.
 - .2 Parking for the Contractor will be designated by the Departmental Representative. Parking in other locations will be prohibited and vehicles may be subject to removal.
 - .3 Parking for Contractor's staff is not allowed on site. Security will be instructed to have unauthorized vehicles towed at the Contractor's expense.
- .5 Provide and maintain access roads, sidewalk crossing ramps and construction runways as may be required for access to the work. All roadways and walkways outside of the Contractor's work site must be kept clear of materials and equipment at all times.
- .6 Provide and maintain competent flag operators, traffic signals, barricades and flares, lights or lanterns as may be required to perform work and protect other users of the Esquimalt Graving Dock.

1.2 STORAGE FACILITIES

- .1 Storage space will be limited to the contractor's work area as identified on the drawings.

1.3 POWER

- .1 Electrical power may be obtained at site for use during duration of the work free of charge.
 - .1 Contractor shall provide 48 hours written notice to the Departmental Representative requesting use of electrical power at site

1.4 AIR

- .1 Compressed air may be obtained at site for use during duration of the work free of charge.
 - .1 Contractor shall provide 48 hours written notice to the Departmental Representative requesting use of compressed air at site.

1.5 WATER SUPPLY

- .1 Water supply may be obtained at site for use during duration of the work free of charge.
 - .1 Contractor shall provide 48 hours written notice to the Departmental Representative requesting use of water at site.

1.6 CRANE SERVICES

- .1 Crane services may be obtained at site for use during duration of the work free of charge.
- .2 Contractor shall provide 48 hours written notice to the Department Representative requesting use of crane services at site.
- .3 Contractor is responsible to provide qualified rigger(s) and spotter(s), all required rigging and associated equipment required below the hook necessary to perform lifts.

1.7 REMOVAL OF TEMPORARY FACILITIES

- .1 Remove temporary facilities from site when directed by the Departmental Representative.

1.8 SIGNS AND NOTICES

- .1 Signs and notices for safety and instruction shall be in both official languages or graphic symbols conforming to CAN/CSA-Z321.
- .2 Maintain approved signs and notices in good condition for duration of project, and dispose of off-site on completion of project or when directed by Departmental Representative.

END OF SECTION 01 51 00

1.0 GENERAL

1.1 SUBMISSION

- .1 Prepare instructions and data by personnel experienced in maintenance of described products.
- .2 Revise content of documents as required before final submittal.
- .3 If requested, furnish evidence as to type, source and quality of products provided.
- .4 Defective products will be rejected, regardless of previous inspections. Replace products at own expense.

1.2 FORMAT

- .1 Organize data in the form of an instructional manual.
- .2 Binders: Vinyl, hard covered, 3 D" ring, loose leaf 219 x 279 mm with spine and face pockets.
- .3 Cover: Identify each binder with type or printed title. "Project Record Documents", list title of project and identify subject matter of contents.
- .4 Arrange content by product under section numbers and sequence of Table of Contents.
- .5 Provide tabbed fly leaf for each separate product, with typed description of product and major component parts of equipment.
- .6 Text: Manufacturer's printed data, or typewritten data.
- .7 Drawings: Provide with reinforced punched binder tab. Bind in with text, fold larger drawings to size of text pages.

1.3 CONTENTS, EACH VOLUME

- .1 Table of Contents – provide the following:
 - .1 Title of project.
Date of submission.
 - .2 Names, addresses, and telephone numbers of Consultant and Contractor with name of responsible parties.
 - .3 Schedule of products, indexed to content of volume.
- .2 For each product, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts.
- .3 Product data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- .4 Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.

1.4 AS-BUILT DOCUMENTS

- .1 Contract drawings and shop drawings: Legibly mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.

CLOSEOUT SUBMITTALS

- .2 Changes made by change orders.
- .3 Details not on original Contract drawings.
- .4 References to related shop drawings and modifications.

- .2 Contract Specifications: legibly mark each item to record actual "Workmanship of Construction", including:
 - .1 Manufacturer, trade name, and catalogue number of each "Product/Material" actually installed, particularly optional items and substitute items.
 - .2 Changes made by addenda and change orders.

- .3 As-built Information:
 - .1 Record changes in red ink.
 - .2 On site "Red Line" As-Built documents to be reviewed with Departmental Representative at project meetings to ensure up-to-date and accurate As-Built documents at the end of the project.
 - .3 Mark on 1 set of drawings, specifications and shop drawings at completion of project and, before final inspection.
 - .4 Provide 1 set of CD's in AutoCAD 2013 file format with all as-built information on the CD's.
 - .5 Submit to the Departmental Representative.

1.5 WARRANTIES, BONDS, TEST REPORTS, INSPECTION REPORTS

- .1 Separate each Document with index tab sheets keyed to Table of Contents listing.

- .2 List subcontractor, supplier and manufacturer with name, address, and telephone number of responsible principal.

- .3 Obtain Warranties, Bonds, Test Results, Inspection Reports executed in duplicate by subcontractors, suppliers, manufacturers, and inspection agencies within 10 days after completion of the applicable item of work.

- .4 Except for items put into use with the Departmental Representative's permission, leave date of beginning of time of warranty until the date of substantial performance is determined.

- .5 Verify that documents are in proper form, contain full information, and are notarized.

- .6 Co-execute submittals when required.

- .7 Retain warranties and bonds until time specified for submittal.

1.6 COMPLETION

- .1 Submit a written certificate that the following have been performed:
 - .1 Work has been completed and inspected for compliance with the Contract documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Equipment and systems have been tested, adjusted, and balanced when required.
 - .4 Work is complete and ready for final inspection.

1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Bird Control Devices Section 10 81 13

1.2 REFERENCES

- 1 ASTM International
 - .1 ASTM A 53/A 53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .2 ASTM A 269 08, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
 - .3 ASTM A 307-07v, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .2 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 G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
 - .3 CSA S16-09, Design of Steel Structures.
 - .4 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
 - .5 CSA W59-M03(R2008), Welded Steel Construction (Metal Arc Welding) [Metric].
 - .1 GS-11-2008, 2nd Edition], Paints and 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 - current edition.
- .5 Green Seal Environmental Standard GS 03 (anti-corrosive primer).

1.3 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 – Submittal Procedures.
- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for sections, plates, pipe, tubing, bolts and include product characteristics, performance criteria, physical size, finish and limitations.
 - .2 Submit one (1) copy of WHMIS MSDS in accordance with Section 01 35 33 - Health and Safety Requirements
 - .1 For finishes, coatings, primers, and paints applied on site: indicate VOC concentration in g/L.
- .3 Shop Drawings:
 - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of British Columbia, Canada. Submit Model Schedule B and C.
 - .2 Indicate materials, core thicknesses, finishes, connections, joints, method of anchorage, number of anchors, supports, reinforcement, details, and accessories.
 - .3 Submit shop drawings minimum 10 days prior to start of fabrication.

1.4 QUALITY ASSURANCE

- .1 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.

- .2 Certifications: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

1.5 DELIVERY, STORAGE & HANDLING

- .1 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .2 Storage and Handling Requirements:
 - .1 Store materials off ground in dry location and in accordance with manufacturer's recommendations in clean, dry, well-ventilated area.
 - .2 Replace defective or damaged materials with new.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Stainless Steel plates: conforming to ASTM A240/A240 M-16 Type 304.
- .2 Exterior Steel and pipe: to ASTM A 53/A 53M standard weight galvanized finish.
- .3 Welding materials: to CSA W59.
- .3 Bolts and anchor bolts: to ASTM A 307.
- .4 Stainless Steel Pipes: Conforming to ANSI/ASME 36.19, Type 304.
- .5 Security fasteners: screws and bolts with spanner type heads to prevent removal except with special tools; non-corrosive type.

2.2 FABRICATION

- .1 Fabricate work square, true, straight and accurate to required size, with joints closely fitted and properly secured.
- .2 Use stainless steel hardware on items requiring assembly.
- .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 Welding: in accordance with CSA W47.1-09 (R2014), CSA W47.2-11(2015), and CSA W48-14 and shall be performed by fabricators fully approved and certified by the Canadian Welding Bureau under CSA W47.1.

2.3 FINISHES

- .1 All stainless Steel to be #4 Satin Finish.

2.4 ISOLATION COATING

- .1 Isolate 2 different metals from following components, by means of neoprene pads:
 - .1 Dissimilar metals except stainless steel, zinc, or white bronze of small area.
 - .2 Concrete, mortar and masonry.
 - .3 Wood.

3.0 EXECUTION

3.1 EXAMINATION

- .1 Verification of Conditions: verify conditions of substrates previously installed are acceptable for metal fabrications installation in accordance with manufacturer's written instructions.
 - .1 Visually inspect substrate in presence of Departmental Representative.
 - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
 - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.
 - .4 Contractor shall verify field measurements are as shown on shop drawings prior to fabrication.

3.2 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 Provide anchorage as per specifications and as per approved shop drawings.
- .4 Exposed fastening devices to match finish and be compatible with material through which they pass.
- .5 Supply components for work in accordance with shop drawings and schedule.
- .6 Weld field connection.
 - .1 Field welding of components on the roof areas is not permitted unless authorized in writing by the Departmental Representative.

3.3 CLEANING

- .1 Progress Cleaning: clean in accordance with Section 01 11 55, clause 1.21 – Cleaning.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.

3.4 PROTECTION

- .1 Protect installed products and components from damage during construction.
- .2 Repair damage to adjacent materials caused by metal fabrications installation.

END OF SECTION 05 50 00

1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Metal Fabrications Section 05 50 00

1.2 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-installation meetings: Conduct pre-installation meeting one week prior to commencing work of this Section and on-site installations to:
- .1 Verify project requirements, including mock-up requirements.
 - .2 Verify substrate conditions.
 - .3 Co-ordinate products, installation methods and techniques.
 - .4 Sequence work of related sections.
 - .5 Co-ordinate with other building subtrades.
 - .6 Review manufacturer's installation instructions.
 - .7 Review masonry cutting operations, methods and tools and determine worker safety and protection from dust during cutting operations.
 - .8 Review heritage components of building with Departmental Representative and note that work is not to damage such components
- .2 Mock-ups:
- .1 Construct mock-ups in accordance with Section 01 33 00 – Submittal Procedures.
 - .2 Mock-up used:
 - .1 To judge workmanship, substrate preparation, operation of equipment and material application.
 - .3 Construct mock-up where directed by Departmental Representative.
 - .4 Allow 24 hours for inspection of mock-up by Departmental Representative before proceeding with work.
 - .5 When accepted by Departmental Representative, mock-up will demonstrate minimum standard for this work. Mock-up may remain as part of finished work.
 - .6 Start work only upon receipt of written acceptance of mock-up by Departmental Representative.

1.3 ACTION & INFORMAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
- .1 Provide product literature, specifications and datasheet and include product characteristics, performance criteria, limitations and colours.
 - .2 Provide two copies of Workplace Hazardous Materials Information System (WHMIS) – Material Safety Data Sheets (MSDS) in accordance with Section 01 35 33 – Health & Safety Requirements.
- .3 Samples:
- .1 Wire material and each type of wiring hardware.
 - .2 Furnish samples of system(s) so installation can be coordinated with existing conditions and within on-site conditions.
- .4 Submit shop drawings showing location of pole and wire configuration and mounting details.

1.4 PRODUCT HANDLING

- .1 Protect products from damage before, during and after the installation.

1.5 QUALITY ASSURANCE

- .1 Submit electronic copy of inspection and test reports to Departmental Representative.
- .2 Prepare mockup of two typical wires, poles and clips installation.

1.6 WARRANTY

- .1 Provide 5 years manufacturer's warranty on material against ultra-violet breakdown and defective workmanship.

1.7 CLOSEOUT SUBMITTALS

- .1 Provide manufacturer's instructions for care, cleaning and maintenance of prefaced components for incorporation into manual specified in Section 01 78 00 – Closeout Submittals.

2.0 PRODUCTS

2.1 MATERIALS

- .1 Steel Wire
 - .1 Material: High-density 302/304-grade stainless steel 7/7 braided wire.
 - .2 Sizes: 0.96mm maximum
- .2 Mounting System
 - .1 Install hardware of the system, connection hardware and cable anchoring hardware as specified and as required to suit site conditions as per approved shop drawings.
 - .1 For anchor point attachments in concrete, use expanding corner net bolts.
 - .2 Perimeter support system shall be sufficient to withstand the tension of the proposed grid system.
 - .3 Upon completion of installing anchor point attachments, the 0.96mm stainless steel wire is attached to the cable stop spacer by wrapping the wire around the spacer and crimping with two 1mm copper ferrules. On longer runs of wire, three 1mm copper ferrules are to be provided at each termination point, Maximum spacing between support poles to be 15' (4500mm) and maximum opening between wires to be 3'x3' (915x915mm). Hardware determines max cable run lengths.
 - .4 Special crimping tools to be applied to insure proper installation of the system.
 - .5 Turnbuckles: Stainless steel, hook & eye turnbuckles, contractor to determine cable size, cable run and maximum allowable loading to suit design requirement.
 - .6 Wire Rope Clamps: Stainless steel, use 2 clamps per connection. Use in conjunction with Cable Thimble.
 - .7 Cable Thimble: Stainless steel cable thimble to prevent cable fraying and creasing when tensioning cable system.
 - .8 Eyebolts: for steel, iron, and heavy gauge sheet metal. Extreme duty stainless steel eyebolt, 2" (5.1cm) long, 9/16" I.D. (14.2mm) with 1/4-20 stainless steel hex nut. Maximum spacing between eyebolts: 50' (15.2m).
 - .9 Screw Eyes: extreme duty stainless steel screw eyes 2" (5.1cm) long, 17/32" I.D. (13.5mm). Pilot holes for all surfaces. Maximum spacing between screw eyes: 50' (15.2m).
 - .10 Eyebolts and Machine Screw Anchors: for concrete surfaces. Eyebolt

BIRD CONTROL DEVICES

specs are same as above. Machine Screw Anchor: Stainless steel anchor – 1/2" (12.7mm) diameter x 1" (25.4mm) deep with 1/4-20 threads inside. Setting tool included with anchors.

- .11 Protection layer, at location where the concrete paver to be located, placed under the concrete paver and above the existing gravel roof. Material to be neoprene pad or approved material.
- .3 Pole Cable Support
 - .1 Stainless steel pole to raise wire systems.
 - .2 Top of pole to have 4 holes designed to accommodate with perimeter cable and turn buckles.
 - .3 Bolts half way up the poles can be loosened to adjust poles to required height.
 - .4 Stainless steel floor base (305mm x 305mm).
 - .5 Pole to be extendable from 1.2m to 2.4m

3.0 EXECUTION

3.1 EXAMINATION

- .1 Examine installation area. Notify Departmental Representative of detrimental work conditions
- .2 Do not proceed until conditions are corrected

3.2 PREPARATION

- .1 Field measurements: Verify dimensions of the areas to be protected. Ensure sufficient quantity of wiring, hardware and surface cleaning products to be applied for the installation of the bird wiring system as per requirements prior to starting installation works.

3.3 SURFACE PREPARATION

- .1 All surfaces to be clean, dry and free of obstructions before bird deterrent system is installed.
- .2 Treat, neutralize and safely remove all bird waste from installation surfaces. Comply with Municipal, Provincial, and Federal regulations governing the proper removal and disposal of bird droppings.
- .3 Use surface cleaning products to neutralize any bird droppings, nests and related waste materials that may be present. Allow all surfaces to air dry completely, and then reapply to sanitize and deodorize the surface before proceeding. Strictly follow treatment instructions provided with surface cleaning products. Products used by the contractor for cleaning bird droppings shall not have corrosive effect on Heritage masonry or flashings and shall not react in any manner with existing roofing membranes so to cause damage.
- .4 Follow Contractor's Site Specific Health and Safety Plan when working around surfaces contaminated with bird droppings.
- .5 If active or abandoned nests are encountered, stop work and notify Departmental Representative immediately. Nests shall be disturbed or removed only by Departmental Representative, who is permitted to do so.
- .6 Work areas shall be cleaned, and repair work shall be done in areas which will be excluded by the wiring system.

- .7 Remove or repair articles that may damage the wires after installation, such as tree limbs, brush, and loose parts of the building.

3.4 INSTALLATION

- .1 Install the bird wire system as recommended by the manufacturer, install perimeter and support hardware; attach bird wires to installed hardware; install access or additional support hardware as specified . The system shall fit the area to be protected perfectly so pest birds cannot enter the protected area and blends perfectly with the existing building.
- .2 Wires can be joined only with the recommended seam fastening hardware and manufacturer recommendations.
- .3 Install wires to avoid contact with existing flashing, equipment, accessories mounted on the parapet or roof. Make necessary adjustments to keep wires a sufficient distance from these objects or conditions.
- .4 Finished wires installation to be taught and free of wrinkles.
- .5 Correct grid spacing shall be used to insure exclusion of the correct pest bird.

3.5 ADJUSTMENTS/CLEANING

- .1 Remove debris and waste materials from project site.
- .2 Inspect finished installation. Make any adjustments needed to conform to manufacturer's net installation guidelines.

END OF SECTION 10 81 13

BIRD DETERRENTS FOR MAIN SUBSTATION AND PUMP HOUSE

ESQUIMALT, BRITISH COLUMBIA

APPENDIX A

PRELIMINARY HAZARD ASSESSMENT FORM



PRELIMINARY HAZARD ASSESSMENT FORM

Project Number:	R.016116.148 Bird Deterrents for Main Substation and Pumphouse
Location:	Esquimalt Graving Dock
Date:	August 9, 2016
Name of Departmental Representative:	Jon Siska, Project Manager
Name of Client:	EASS-EGD
Name of Client Project Co-ordinator	Melissa Piasta

Site Specific Orientation Provided at Project Location **Yes X** **No**

Notice of Project Required **Yes X** **No**

NOTE:

PWGSC requires "**A Notice of Project**" for all construction work related activities.

NOTE:

OHS law is made up of many municipal, provincial, and federal acts, regulations, bylaws and codes. There are also many other pieces of legislation in British Columbia that impose OHS obligations.

Important Notice: This hazard assessment has been prepared by PWGSC for its own project planning process, and to inform the service provider of actual and potential hazards that may be encountered in performance of the work. PWGSC does not warrant the completeness or adequacy of this hazard assessment for the project and the paramount responsibility for project hazard assessment rests with the service provider.

TYPES OF HAZARDS TO CONSIDER	Potential Risk for:				COMMENTS
	PWGSC, OGD's, or tenants		General Public or other contractors		
Examples: Chemical, Biological, Natural, Physical, and Ergonomic Listed below are common construction related hazards. Your project may include pre-existing hazards that are not listed. Contact the Regional Construction Safety Coordinator for assistance should this issue arise.	Yes	No	Yes	No	Note: When thinking about this pre-construction hazard assessment, remember a hazard is anything that may cause harm, such as chemicals, electricity, working from heights, etc; the risk is the chance, high or low, that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be.
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Typical Construction Hazards					
Concealed/Buried Services (electrical, gas, water, sewer etc)	X		X		No natural gas services on site.
Slip Hazards or Unsound Footing	X		X		
Working at Heights	X		X		
Working Over or Around Water		X		X	
Heavy overhead lifting operations, mobile cranes etc.	X		X		



Marine and/or Vehicular Traffic (site vehicles, public vehicles, etc.)	X		X		
Fire and Explosion Hazards	X		X		
High Noise Levels	X		X		
Excavations	X		X		
Blasting	X		X		
Construction Equipment	X		X		
Pedestrian Traffic (site personnel, tenants, visitors, public)	X		X		
Multiple Employer Worksite	X		X		
Electrical Hazards					
Contact With Overhead Wires		X		X	
Live Electrical Systems or Equipment	X		X		
Physical Hazards					
Equipment Slippage Due To Slopes/Ground Conditions		X		X	
Earthquake	X		X		
Tsunami	X		X		
Avalanche		X		X	
Forest Fires		X		X	
Fire and Explosion Hazards	X		X		
Working in Isolation		X		X	
Working Alone	X		X		
Violence in the Workplace	X		X		
High Noise Levels	X		X		
Inclement weather	X		X		
High Pressure Systems	X		X		
Other:					
Hazardous Work Environments					
Confined Spaces / Restricted Spaces	X		X		Service tunnels are restricted spaces; access to Pumphouse is restricted.
Suspended / Mobile Work Platforms	X		X		
Other:	X		X		Overhead cranes
Biological Hazards					
Mould Proliferations		X		X	
Accumulation of Bird or Bat Guano	X		X		
Bacteria / Legionella in Cooling Towers / Process Water		X		X	
Rodent / Insect Infestation		X		X	
Poisonous Plants		X		X	
Sharp or Potentially Infectious Objects in Wastes	X		X		Multiple employer workplace
Wildlife	X		X		Resident deer population; aggressive seagulls during nesting season.



Chemical Hazards					
Asbestos Materials on Site		X		X	
Designated Substance Present		X		X	
Chemicals Used in work	X		X		Active ship repair facility
Lead in paint		X		X	
Mercury in Thermostats or Switches		X		X	
Application of Chemicals or Pesticides		X		X	
PCB Liquids in Electrical Equipment		X		X	
Radioactive Materials in Equipment		X		X	
Other:					
Contaminated Sites Hazards					
Hazardous Waste	X		X		Suspected contaminated soils
Hydrocarbons	X		X		Suspected contaminated soils
Metals	X		X		Suspected contaminated soils
Other:	X		X		Suspected contaminated soils
Security Hazards					
Risk of Assault	X		X		Multiple employer workplace
Other:	X		X		No unauthorized entry to site.

Other Compliance and Permit Requirements ¹	YES	NO	Notes / Comments ²
Is a Building Permit required?		X	
Is an Electrical permit required?	X		Required for any electrical work.
Is a Plumbing Permit required?			N/A
Is a Sewage Permit required?			N/A
Is a Dumping Permit required?			No dumping allowed on site
Is a Hot Work Permit required?	X		
Is a Permit to Work required?		X	
Is a Confined Space Entry Permit required?			N/A
Is a Confined Space Entry Log required?			N/A
Discharge Approval for treated water required?			N/A

Notes:

- (1) Does not relieve Service Provider from complying with all applicable federal, provincial, and municipal laws and regulations.
- (2) TBD means To Be Determined by Service Provider.

Service Provider Acknowledgement: We confirm receipt and review of this Pre-Project Hazard Assessment and acknowledge our responsibility for conducting our own assessment of project hazards, and taking all necessary protective measures (which may exceed those cited herein) for performance of the work.			
Service Provider Name			
Signatory for Service Provider		Date Signed	
RETURN EXECUTED DOCUMENT TO PWGSC DEPARTMENTAL REPRESENTATIVE PRIOR TO ANY WORK COMMENCING			



Public Works and
Government Services
Canada

Travaux publics et
Services gouvernementaux
Canada

Canada

BIRD DETERRENTS FOR MAIN SUBSTATION AND PUMP HOUSE

ESQUIMALT, BRITISH COLUMBIA

APPENDIX B

HERITAGE CHARACTER STATEMENTS

Esquimalt, British Columbia
Pump House (Building no. 1)
Esquimalt Graving Dock
825 Admirals Road

HERITAGE CHARACTER STATEMENT

The Esquimalt Graving Dock pump house, which includes the access shafts to the dock, was constructed in 1925. Max Downing and Swinburne A. Kayll, of Vancouver, B.C., were the associate architects on the project. Two two-storey annexes were added onto the north façade of the original building. The building is owned by Public Works Canada. See FHBRO Building Report 90-244.

Reasons for Designation

The pump house was designated Recognized because of its historical association, its architectural and functional design, and its contextual value.

The Esquimalt Graving Dock was built by the dominion government between 1921 and 1926 to serve military purposes as well as commercial ship traffic. The Graving Dock is associated with the shipping industry which has been integrally connected with the development of the Canadian economy. At the time of its completion in 1927, the dry dock was the second largest in the world. Since its construction, the Esquimalt Graving Dock has been in continuous use and is the largest dry dock on the Canadian west coast. The watering and dewatering operations of the dry dock are performed by the pumping machinery housed within the pump house, which is an integral component of the dock's function and operation. The access shafts, positioned at the south elevation, are used for entry to the filling and emptying tanks.

The pump house is of a utilitarian design exhibiting features characteristic of the Modern Classical style employed during the first half of the 20th century. The building reflects an economic approach to construction typically employed for industrial plants. The interior layout is determined by functional consideration and machinery arrangement. The original layout survives largely intact.

The pump house along with the surrounding buildings, forms a homogeneous complex where their utilitarian designs in combination with the machinery housed within, contribute to the industrial character of the Graving Dock.

Character Defining Elements

The heritage character of the pump house resides in the massing, the materials, the Modern Classical style details, the pattern and design of openings, and the interior layout and surviving machinery which reflect the function of the building. The heritage value also lies in the relationship of the building to the surrounding Graving Dock building complex.

The pump house consists of a large three-storey rectangular, flat roofed, brick building sitting on a well-defined concrete foundation, with two additions on the north elevation. The north and south façades

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Esquimalt, British Columbia
Pump House (Building no. 1) (Continued)

have nine bays divided by piers. The west façade has a large central entrance flanked by two windows and the east façade has three bays. The division of the building into clearly defined bays, and the regular arrangement of openings on these bays, is a characteristic of the building that should be maintained.

Large vertical steel-framed windows divided into small panes admit much daylight into the interior. These windows are typical of industrial buildings, and they contribute to the heritage character of the pump house.

Ornamental brick patterning and limestone string courses, characteristic of the Modern Classical style, provide a decorative effect to the façades. Decorative brickwork includes the course of stretchers on edge, the geometric panels with limestone infilling above the piers, the panel with the date stone above the entrance, and the patterning on the piers themselves. The use of buff bricks and deeply raked black pointing contribute to the overall effect. The same brick colour and a simpler decorative brick pattern is found in the additions. The masonry work is of good quality and it warrants careful maintenance, with the use of appropriate expertise for any repair and repointing.

The layout of the building has been designed to facilitate the efficient operation of the equipment. The interior is divided into two functional zones - large uninterrupted floor area to accommodate the equipment, with the eastern end subdivided into two levels for service facilities. The pumping machinery is largely original, and in place. Every effort should be made to retain the original layout and machinery.

It is important to maintain the relationship of the building to the adjacent access shafts and to the surrounding industrial buildings of the Graving Dock complex.

1992.06.30

Esquimalt, British Columbia
Transformer House (Building no. 11)
Esquimalt Graving Dock
825 Admirals Road

HERITAGE CHARACTER STATEMENT

The Esquimalt Graving Dock transformer house was built in 1925 to serve the electrical requirements of the dock. Max Downing and Swinburne A. Kayll, of Vancouver, B.C., were the associate architects on the project. The transformer house has had additions to the north and south elevations. The building is owned by Public Works Canada. See FHBRO Building Report 90-244.

Reasons for Designation

The transformer house was designated Recognized because of its historical association, its architectural and functional design, and its contextual value.

The Esquimalt Graving Dock was built by the dominion government between 1921 and 1926 to serve military purposes as well as commercial ship traffic. The Graving Dock is associated with the shipping industry which has been integrally connected with the development of the Canadian economy. At the time of its completion in 1927, the dry dock was the second largest in the world. Since its construction, the Esquimalt Graving Dock has been in continuous use and is the largest dry dock on the Canadian west coast. The transformer house is an integral part of the operation of the dry dock and an essential component of the dry dock system. It provides the power necessary to effect ship repairs.

The transformer house is of a utilitarian design, exhibiting features characteristic of the Modern Classical style employed during the first half of the 20th century. The building reflects an economic approach to construction typically employed for industrial plants. The interior layout is determined by functional consideration and machinery arrangements.

The transformer house along with the surrounding buildings, form a homogeneous complex where their utilitarian designs in combination with the machinery housed within, contribute to the industrial character of the Graving Dock.

Character Defining Elements

The heritage character of the transformer house resides in the massing, the materials, the Modern Classical style details, and the interior layout and surviving machinery which reflect the function of the building. The heritage value also lies in the relationship of the building to the surrounding Graving Dock building complex.

The transformer house is a substantial brick building, approximately three-storeys high resting on a well-defined concrete foundation. The south, east, and west façades are divided into three bays. Modifications to the north elevations render identification of the original façade treatment difficult.

.../2

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Esquimalt, British Columbia
Transformer House (Building no. 11) (Continued)

Any future work should respect the configuration of the south, east, and west elevations and consideration should be given to treating the north elevation in a manner compatible with the original building. The additions on the south and north façades detract from the original building. These could be refinished to blend in more with the main building. The

design of any future additions should take cues from the original building in terms of materials, predominant horizontal and vertical lines such as the definition of the foundation, string courses, and bays.

Ornamental brick patterning and limestone string courses, characteristic of the Modern Classical style, provide a decorative effect to the façades. Decorative brickwork includes the course of stretchers on edge, the geometric panels with limestone infilling above the piers, the patterning in the bays and on the piers themselves. The use of buff brick and deeply raked black pointing contribute to the overall effect. The masonry is of good quality and it warrants careful maintenance, with the use of appropriate expertise for any repair and repointing.

The layout of the building has been designed to facilitate the efficient operation of the equipment. While the interior has undergone some modifications, it would be appropriate to identify any surviving interior layout and original machinery, and every effort should be made to retain these in future work.

It is important to maintain the relationship of the transformer house to the surrounding industrial buildings of the Graving Dock complex.

1992.06.30

BIRD DETERRENTS FOR MAIN SUBSTATION AND PUMP HOUSE

ESQUIMALT, BRITISH COLUMBIA

APPENDIX C
SITE PHOTOS

Pump House



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

Main Substation



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5



Photo 6

END OF APPENDIX C