SPECIFICATION

BAIT DEPOT BUILDING DEMOLITION

CHANNEL-PORT AUX BASQUES, NL

Project No.: 722563-002

PREPARED FOR:

Small Craft Harbours

ON BEHALF OF:

Department of Fisheries and Oceans

DATE:

November, 2018

PROVINCE OF NEWFOUNDLAND
PERMIT HOLDER
This Permit Allows
ANDERSON ENGINEERING CONSULTANTS LTD.
To practice Professional Engineering
in Newfoundland and Labrador.
Permit No. as issued by APEGN R0092
which is valid for the year 2018.

REGISTERED PROFESSIONAL ENGINEER
W. J. ANDERSON
SIGNATURE
Nov 9/18
DATE
PROVINCE OF NEWFOUNDLAND

List of Drawings

END OF SECTION

PART 1 - GENERAL

1.1 SCOPE

.1 The scope for this project includes, but is not limited to, the provision of demolition activities, required for the removal and disposal of the 32.8 m x 12.3 m existing bait depot buiding. The work covered will consist of the furnishing of all plant, labour, equipment and material required for the bait depot building demolition at Channel-Port aux Basques, Newfoundland and Labrador, in strict accordance with specifications and accompanying drawings and subject to all terms and conditions of the Contract.

1.2 DESCRIPTION OF WORK

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

.1 Removal of existing asphalt pavement and disposal at an approved waste disposal site. See limits as shown on drawings.

.2 Demolition, removal and disposal of hazardous material and asbestos abatement prior to the demolition of the existing building.

.3 Demolition and removal of a 32.8 m x 12.3 m, single story wood structure building including concrete foundation and concrete floor slab, as outlined on the accompanying drawings. All demolished and excavated materials to be disposed of at an approved waste disposal site.

.4 All as indicated on accompanying drawings and specifications hereto.

1.3 SITE OF WORK

.1 Work will be carried out at Channel-Port aux Basques, Newfoundland and Labrador in the location as shown on the accompanying drawings.

1.4 DATUM

.1 Datum used for this project is Lowest Normal Tides (LNT) and is assumed to be +4.273 metres. Top nut on existing fire hydrant as shown on accompanying drawings.

.2 Bidders are advised to consult the Tide Tables issued by Fisheries and Oceans in order to make sure of the tidal conditions affecting work.

1.5 FAMILIARIZATION WITH SITE

.1 Before submitting a tender, it is recommended that bidders visit the site and its surroundings to review and verify the form, nature and extent of the work, materials needed for the completion of the work, the means of access to the site, severity, exposure and uncertainty of weather, soil conditions, any accommodations they may require, and in general shall obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.

.2 Contractors, bidders or those they invite to site are to review specification Section 01 35 29 - Health and Safety Requirements before visiting site. Take all appropriate safety measures for any visit to site, either before or after acceptance of tender.

1.6 CODES AND STANDARDS

.1 Perform work in accordance with the latest edition of the National Building Code of Canada, FCC Standard 373 - Standard for Piers and Wharves and any other code of provincial or local application including all amendments up to project bid closing date provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.

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

1.7 TERM ENGINEER

.1 Unless specifically stated otherwise, the term Engineer where used in the Specifications and on the Drawings shall mean the Departmental Representative as defined in the General Conditions of the Contract.

1.8 SETTING OUT WORK

.1 Set grades and layout work in detail from control points and grades established by Departmental Representative.

1.8 SETTING OUT WORK (Cont'd)

.2 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated or as directed by Departmental Representative.

.3 Provide devices needed to layout and construct work.

.4 Supply such devices as straight edges and templates required to facilitate Departmental Representative's inspection of work.

.5 Supply stakes and other survey markers required for laying out work.

1.9 COST BREAKDOWN

.1 Before submitting first progress claim submit breakdown of Contract price in detail as directed by Departmental Representative and aggregating contract price. Departmental Representative will provide the required forms for application of progress payment.

.2 Provide cost breakdown in same format as the numerical and subject title system used in this specification project manual and thereafter sub-divided into major work components as directed by Departmental Representative.

.3 Upon approval by Departmental Representative, cost breakdown will be used as basis for progress payment.

.4 All work items not designated in the unit price table as a measurement for payment, are to be included in the lump sum arrangement, as noted on the Bid and Acceptance Form.

1.10 WORK SCHEDULE

.1 Submit within 7 work days of notification of acceptance of bid, a demolition schedule showing commencement and completion of all work within the time stated on the Bid and Acceptance Form and the date stated in the bid acceptance letter.

.2 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.

1.10 WORK SCHEDULE (Cont'd)

.3 As a minimum, work schedule to be prepared and submitted in the form of Bar (GANTT) Charts, indicating work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a reasonable plan for completion of project within designated time, e.g., show target dates for asphalt removal and the demolition of the building. Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.

.4 Submit schedule updates on a minimum monthly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.

.5 The schedule, including all updates, shall be to Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.

.6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.

1.11 ABBREVIATIONS

.1 Following abbreviations of standard specifications have been used in this specification and on the drawings:
CGSB - Canadian Government Specifications Board
CSA - Canadian Standards Association
NLGA - National Lumber Grades Authority
ASTM - American Society for Testing and Materials

.2 Where these abbreviations and standards are used in this project, latest edition in effect on date of bid call will be considered applicable.

1.12 QUARRY AND EXPLOSIVES

.1 Make own arrangements with Provincial authorities and owners of private properties, for the quarrying and transportation of rock and all materials and machinery necessary for work over their property, roads or streets as case may be.

1.13 SITE OPERATIONS

.1 Arrange for sufficient space adjacent to project site for conduct of operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. Do not interfere with normal day-to-day operations in progress at site. All arrangements for space and access will be made by Contractor.

.2 Remove snow and ice as required to maintain safe access in a manner that does not damage existing structures or interfere with the operations of others.

1.14 PROJECT MEETINGS

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

.2 Project meetings will take place on site of work unless so directed by the Departmental Representative.

.3 Departmental Representative will assume responsibility for recording minutes of meetings and forwarding copies to all parties present at the meetings.

.4 Have a responsible member of firm present at all project meetings.

1.15 PROTECTION

.1 Store all materials and equipment to be incorporated into work to prevent damage by any means.

.2 Repair or replace all materials or equipment damaged in transit or storage to the satisfaction of Departmental Representative and at no cost to Canada.

1.16 DOCUMENTS REQUIRED

.1 Maintain at job site, one copy of the following:

- .1 Contract Drawings
- .2 Specifications
- .3 Addenda
- .4 Reviewed Shop Drawing
- .5 List of outstanding shop drawings
- .6 Change Orders
- .7 Other modifications to Contract
- .8 Field Test Reports
- .9 Copy of Approved Work Schedule

1.16 DOCUMENTS REQUIRED (Cont'd)

.1 (Cont'd)

.10 Site specific Health and Safety Plan and other safety related documents

.11 Other documents as stipulated elsewhere in the Contract Documents.

1.17 PERMITS

.1 Obtain and pay for all permits, certificates and licenses as required by Municipal, Provincial, Federal and other Authorities.

.2 Provide appropriate notifications of project to municipal and provincial inspection authorities.

.3 Obtain compliance certificates as prescribed by legislative and regulatory provisions of municipal, provincial and federal authorities as applicable to the performance of work.

.4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.

.5 Submit to Departmental Representative, copy of quarry permit, if applicable, prior to start of quarry operations.

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

1.18 EXISTING CONDITIONS

.1 Contractors are cautioned that any previous investigations that may be available for review, were intended to provide general site information only. Any interpolation and/or assumptions made relative to any previous investigations is the Contractor's responsibility.

1.19 ACCEPTANCE

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

1.20 WORKS COORDINATION

.1 Responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other.

.2 Convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.

.3 DFO-SCH will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of those trades not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved at no extra cost to DFO-SCH.

1.21 CONTRACTOR'S USE OF SITE

.1 Construction operations, including storage of materials for this contract, not to interfere with the fishing activity and/or operations at this facility.

.2 Responsible for arranging the storage of materials on or off site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the Contractor's expense, upon request by Departmental Representative.

.3 Contractor will take adequate precautions to protect existing concrete decks and asphalt when operating tracked equipment.

.4 Exercise care so as not to obstruct or damage public or private property in the area.

.5 At completion of work, restore area to its original condition. Damage to ground and property will be repaired by Contractor. Remove all construction materials, residue, excess, etc., and leave site in a condition acceptable to Departmental Representative.

1.22 WORK COMMENCEMENT

.1 Mobilization to project site is to commence immediately after acceptance of bid and submission of Site Specific Safety Plan, unless otherwise agreed by Departmental Representative.

.2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed by Departmental Representative.

.3 Weather conditions, short construction season, delivery challenges and the location of the work site may require the use of longer working days and additional work force to complete the project within the specified completion time.

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

1.23 FACILITY SMOKING ENVIRONMENT

.1 Comply with smoking restrictions.

1.24 INTERPRETATION OF DOCUMENTS

.1 Supplementary to the Order of Precedence article of the General Conditions of the Contract, the Division 01 sections take precedence over the technical specification sections in other Divisions of the Specification Manual.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Inspecting and testing by inspecting firms or testing laboratories designated by Departmental Representative.

1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

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

1.3 APPOINTMENT AND PAYMENT

.1 Departmental Representative will appoint and pay for services of testing laboratory except for the following:
.1 Inspection and testing required by laws, ordinances, rules, regulations or orders of public authorities.
.2 Inspection and testing performed exclusively for Contractor's convenience.
.3 Mill tests and certificates of compliance.
.4 Tests specified to be carried out by Contractor under the supervision of Departmental Representative.
.5 Tests requested by Departmental Representative to confirm material specifications when the applicable manufacturer's documentation or test results are unavailable.
.6 Additional tests specified in the following paragraph.

.2 Where tests or inspections by designated testing laboratory reveal Work not in accordance with contract requirements, pay costs for additional tests or inspections as required by Departmental Representative to verify acceptability of corrected work.

1.4 CONTRACTOR'S RESPONSIBILITIES

.1 Provide labour, equipment and facilities to: testing.
.1 Provide access to Work to be inspected and tested.
.2 Facilitate inspections and tests.
.3 Make good Work disturbed by inspection and test.

1.4 CONTRACTOR'S RESPONSIBILITIES (Cont'd)

.1 (Cont'd)
.4 Provide storage on site for laboratory's exclusive use to store equipment and cure test samples.

.2 Notify Departmental Representative sufficiently in advance of operations to allow for assignment of laboratory personnel and scheduling of test.

.3 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.

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

PART 2 - PRODUCTS

2.1 NOT USED

.1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED

.1 Not Used.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates.

1.2 SUBMITTAL GENERAL REQUIREMENTS

.1 Submit to Departmental Representative for review submittals listed, including shop drawings, samples, certificates and other data, as specified in other sections of the Specifications.

.2 Submit with reasonable promptness and in orderly sequence so as to allow for Departmental Representative's review and not cause delay in Work. Failure to submit in ample time will not be considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

.3 Do not proceed with Work until relevant submissions are reviewed by Departmental Representative.

.4 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.5 Where items or information is not produced in SI Metric units, provide soft converted values.

.6 Review submittals prior to submission to Departmental Representative. Ensure during review that necessary requirements have been determined and verified, required field measurements or data have been taken, and that each submittal has been checked and co-ordinated with requirements of Work and Contract Documents.

.1 Submittals not stamped, signed, dated and identified as to specific project will be returned unexamined by Departmental Representative and considered rejected.

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

.8 Verify field measurements and affected adjacent Work are co-ordinated.

1.2 SUBMITTAL GENERAL REQUIREMENTS (Cont'd)

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

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

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

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

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

1.3 SHOP DRAWINGS AND PRODUCT DATA

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, product data, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Shop Drawings Content and Format:

.1 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where items or equipment attach or connect to other items or equipment, confirm that all interrelated work have been coordinated, regardless of section or trade from which the adjacent work is being supplied and installed.

.2 Shop Drawings Format:

.1 Opaque white prints or photocopies of original drawings or standard drawings modified to clearly illustrate work specific to project requirements. Maximum sheet size to be 1000 x 707 mm.

1.3 SHOP DRAWINGS AND PRODUCT DATA (Cont'd)

.2 (Cont'd)

.2 (Cont'd)

.2 Product Data from manufacturer's standard catalogue sheets, brochures, literature, performance charts and diagrams, used to illustrate standard manufactured products, to be original full colour brochures, clearly marked indicating applicable data and deleting information not applicable to project.

.3 Non or poorly legible drawings, photocopies or facsimiles will not be accepted and returned not reviewed.

.3 Supplement manufacturer's standard drawings and literature with additional information to provide details applicable to project.

.4 Delete information not applicable to project on all submittals.

.3 Allow 14 calendar days for Departmental Representative's review of each submission.

.4 Adjustments or corrections made on shop drawings by Departmental Representative are not intended to change Contract Price. If adjustments affect value of Work, advise Departmental Representative in writing prior to proceeding with Work.

.5 If upon review by Departmental Representative, no errors or omissions are discovered or if only minor corrections and comments are made, fabrication and installation may proceed upon receipt of shop drawings. If shop drawings are rejected and noted to be Resubmitted, do not proceed with that portion of work until resubmission and review of corrected shop drawings, through same submission procedures indicated above.

.6 Accompany submissions with transmittal letter, containing:

.1 Date.

.2 Project title and number.

.3 Contractor's name and address.

.4 Identification and quantity of each shop drawing, product data and sample.

.5 Other pertinent data.

.7 Submissions include:

.1 Date and revision dates.

.2 Project title and number.

.3 Name and address of:

.1 Subcontractor.

.2 Supplier.

.3 Manufacturer.

1.3 SHOP DRAWINGS AND PRODUCT DATA (Cont'd)

.7 (Cont'd)

.4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

.5 Cross references to particular details of contract drawings and specifications section number for which shop drawing submission addresses.

.6 Details of appropriate portions of Work as applicable:

.1 Fabrication.

.2 Layout, showing dimensions, including identified field dimensions, and clearances.

.3 Setting or erection details.

.4 Capacities.

.5 Performance characteristics.

.6 Standards.

.7 Operating weight.

.8 Wiring diagrams.

.9 Single line and schematic diagrams.

.10 Relationship to adjacent work.

.8 After Departmental Representative's review, distribute copies.

.9 The review of shop drawings by the Departmental Representative or their delegated representative is for sole purpose of ascertaining conformance with general concept. This review shall not mean that the Departmental Representative approves the detail design inherent in the 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 the construction and Contract Documents. 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 all sub-trades.

1.4 SCHEDULE, PERMITS AND CERTIFICATES

.1 Upon acceptance of bid, submit to Departmental Representative copy of Work Schedule and various other schedules, permits, certification documents and project management plans as specified in other sections of the Specifications.

1.4 SCHEDULE, PERMITS AND CERTIFICATES (Cont'd)

.2 Submit copy of permits, notices, compliance Certificates received by Regulatory Agencies having jurisdiction and as applicable to the Work.

.3 Submission of above documents to be in accordance with Submittal General Requirements procedures specified in this section

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Fire Safety Requirements.

.2 Hot Work Permit.

1.2 RELATED WORK

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

.2 Section 01 35 25 - Special Procedures on Lockout Requirements.

1.3 REFERENCES

.1 Fire Protection Standards issued by Fire Protection Services of Human Resources Development Canada as follows:
.1 FCC No. 301-June 1982 Standard for Construction Operations (http://ccinfoweb2.ccohs.ca/legislation/documents/fpfcstde/fc301_e.htm).
.2 FCC No. 302-June 1982 Standard for Welding and Cutting (http://ccinfoweb2.ccohs.ca/legislation/documents/fpfcstde/fc302_e.htm).

.2 National Fire Code 2015.

.3 National Building Code 2015.

1.4 DEFINITIONS

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

1.5 SUBMITTALS

.1 Submit copy of Hot Work Procedures and sample of Hot Work permit to Departmental Representative for review, within 14 calendar days after notification of acceptance of bid.

.2 Submit in accordance with the Submittal General Requirements specified in Section 01 33 00-Submittal Procedures.

1.6 FIRE SAFETY REQUIREMENTS

.1 Implement and follow fire safety measures during Work. Comply with following:
.1 National Fire Code, 2015
.2 Fire Protection Standards FCC 301 and FCC 302.
.3 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 29 - Health and Safety Requirements.

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

1.7 HOT WORK AUTHORIZATION

.1 Obtain Departmental Representative's written "Authorization to Proceed" before conducting any form of Hot work on site.

.2 To obtain authorization submit to Departmental Representative:
.1 Contractor's typewritten Hot Work Procedures to be followed on site as specified below.
.2 Description of the type and frequency of Hot Work required.
.3 Sample Hot Work Permit to be used.

.3 Upon review and confirmation that effective fire safety measures will be implemented during performance of hot work, Departmental Representative will provide authorization to proceed as follows:
.1 Issue one written "Authorization to Proceed" covering the entire project for duration of work or;
.2 Separate work, or segregate certain parts of work, into individual entities. Each entity requiring a separately written "Authorization to Proceed" from Departmental Representative. Follow Departmental Representative's directives in this regard.

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

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

1.8 HOT WORK PROCEDURES

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

.2 Procedures to include:
.1 Requirement to perform hazard assessment of site and immediate hot work area for each hot work event in accordance with Hazard Assessment and Safety Plan requirements of Section 01 35 29 -Health and Safety Requirements.
.2 Use of a Hot Work Permit system for each hot work event.
.3 The step by step process of how to prepare and issue permit.
.4 Permit shall be issued by Contractor's site Superintendent, or other authorized person designated by Contractor, granting permission to worker or subcontractor to proceed with hot work.
.5 Provision of a designated person to carryout a Fire Safety Watch for a minimum of 60 minutes immediately upon completion of the hot work.
.6 Compliance with fire safety codes and standards specified herein and occupational health and safety regulations specified in Section 01 35 29 Health and Safety Requirements.

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

.4 Hot Work Procedures shall clearly establish worker instructions and allocate responsibilities of:
.1 Worker(s),
.2 Authorized person issuing the Hot Work Permit,
.3 Fire Safety Watcher,
.4 Subcontractors and Contractor.

.5 Brief all workers and subcontractors on Hot Work Procedures and Permit system established for project. Stringently enforce compliance.
.1 Failure to comply with the established procedures may result in the issuance of a Non-Compliance Notification at Departmental Representative's discretion with possible disciplinary measures imposed as specified in Section 01 35 29 - Health and Safety Requirements.

1.9 HOT WORK PERMIT

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

1.9 HOT WORK PERMIT (Cont'd)

.1 (Cont'd)
.1 Project name and project number.
.2 Building name, address and specific room or area where hot work will be performed.
.3 Date when permit issued.
.4 Description of hot work type to be performed.
.5 Special precautions required, including type of fire extinguisher needed.
.6 Name and signature of person authorized to issue the permit.
.7 Name of worker (clearly printed) to which the permit is being issued.
.8 Time Duration that permit is valid (not to exceed 8 hours). Indicate start time and date, and completion time and date.
.9 Worker signature with date and time upon hot work termination.
.10 Specified time period requiring safety watch.
.11 Name and signature of designated Fire Safety Watcher, complete with time and date when safety watch terminated, certifying that surrounding area was under continual surveillance and inspection during the full watch time period specified in Permit and commenced immediately upon completion of Hot Work.

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

.3 Each Hot Work Permit to be completed in full and signed as follows:
.1 Authorized person issuing Permit before hot work commences.
.2 Worker upon completion of Hot Work.
.3 Fire Safety Watcher upon termination of safety watch.
.4 Returned to Contractor's Site Superintendent for safe keeping.

1.10 FIRE PROTECTION AND ALARM SYSTEMS

.1 Fire protection and alarm systems shall not be:
.1 Obstructed.
.2 Shut-off, unless approved by Departmental Representative.
.3 Left inactive at the end of a working day or shift.

.2 Do not use fire hydrants, standpipes and hose systems for purposes other than firefighting.

1.10 FIRE PROTECTION AND ALARM SYSTEMS (Cont'd)

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

1.11 DOCUMENTS ON SITE

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

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

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

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

1.2 RELATED WORK

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

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

1.3 REFERENCES

.1 C22.1-15 - Canadian Electrical Code, Part 1, Safety Standard for Electrical Installations.

.2 CAN/CSA C22.3 No. 1-15 - Overhead Systems.

.3 CAN/CSA C22.3 No. 7-15 - Underground Systems.

.4 COHS, Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

1.4 DEFINITIONS

.1 Electrical Facility: means any system, equipment, device, apparatus, wiring, conductor, assembly or part thereof that is used for the generation, transformation, transmission, distribution, storage, control, measurement or utilization of electrical energy, and that has an amperage and voltage that is dangerous to persons.

.2 Guarantee of Isolation: means a guarantee by a competent person in control or in charge that a particular facility or equipment is isolated.

.3 De-energize: in the electrical sense, that a piece of equipment is isolated and grounded, e.g. if the equipment is not grounded, it cannot be considered de-energized (DEAD).

.4 Guarded: means that an equipment or facility is covered, shielded, fenced, enclosed, inaccessible by location, or otherwise protected in a manner that, to the extent that is reasonably practicable, will prevent or reduce danger to any person who might touch or go near such item.

1.4 DEFINITIONS (Cont'd)

.5 Isolate: means that an electrical facility, mechanical equipment or machinery is separated or disconnected from every source of electrical, mechanical, hydraulic, pneumatic or other kind of energy that is capable of making it dangerous.

.6 Live/alive: means that an electrical facility produces, contains, stores or is electrically connected to a source of alternating or direct current of an amperage and voltage that is dangerous or contains any hydraulic, pneumatic or other kind of energy that is capable of making the facility dangerous to persons.

1.5 COMPLIANCE REQUIREMENTS

.1 Perform lockouts in compliance with:
.1 Canadian Electrical Code 2015.
.2 Federal and Provincial Occupational Health and Safety Acts and Regulations as specified in Section 01 35 29 - Health and Safety Requirements.
.3 Regulations and code of practice as applicable to mechanical equipment or other machinery being de-energized.
.4 Procedures specified herein.

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

1.6 SUBMITTALS

.1 Submit copy of proposed Lockout Procedures and sample form of lockout permit or lockout tags for review.

.2 Submit documentation within 7 calendar days of acceptance of bid. Do not proceed with work until submittal has been reviewed by Departmental Representative.

.3 Submit above documents in accordance with the submittal requirements specified in Section 01 33 00- Submittal Procedures.

.4 Resubmit Lockout Procedures with noted revisions as may result from Departmental Representative's review.

1.7 ISOLATION OF EXISTING SERVICES

.1 Obtain Departmental Representative's written authorization prior to conducting work on an existing active, energized service or facility required as part of the work and before proceeding with lockout of such services or facility.

.2 To obtain authorization, submit to Departmental Representative the following documentation:
.1 Written Request for Isolation of the service or facility and;
.2 Copy of Contractor's Lockout Procedures.

.3 Make a Request for Isolation for each event, unless directed otherwise by Departmental Representative, and as follows:
.1 Fill-out standard forms in current use at the Facility when so directed by Departmental Representative or;
.2 Where no form exist at Facility, make request in writing identifying:
.1 Identification of system or equipment to be isolated, including it's location;
.2 Time duration, indicating Start time and date, and Completion time and date when isolation will be in effect;
.3 Voltage of service feed to system or equipment being isolated;
.4 Name of person making the request.
.3 Document to be in typewritten format.

.4 Do not proceed until receipt of written notification from Departmental Representative granting the Isolation Request and authorizating to proceed with the isolation of designated equipment or facility. Departmental Representative may designate other individual at the Facility as the person authorized to grant the Isolation Request.

.5 Conduct safe, orderly shut down of equipment or facilities, de-energize and isolate power and other sources of energy and lockout items in accordance with requirement of clause 1.8 below.

.6 Plan and schedule shut down of existing services in consultation with the Departmental Representative and the Facility Manager. Minimize impact and downtime of facility operations.

1.7 ISOLATION OF EXISTING SERVICES (Cont'd)

.7 Determine in advance, as much as possible, in cooperation with the Departmental Representative, the type and frequency of situations which will require a Request for Isolation. Follow Departmental Representative's directives in this regard.

.8 Conduct hazard assessment as part of the planning process of isolating existing equipment and facilities. Hazard Assessments to conform with requirements of Health and Safety Section 01 35 29 - Health and Safety Requirements.

1.8 LOCKOUTS

.1 Isolate and lockout electrical facilities, mechanical equipment and machinery from all potential energy sources prior to starting work on such items.

.2 Develop and implement lockout procedures to be followed on site as an integral part of the Work.

.3 Use energy isolation lockout devices specifically designed and appropriate for type of facility or equipment being locked out.

.4 Use industry standard lockout tags.

.5 Provide appropriate safety grounding and guards as required.

.6 Prepare Lockout Procedures in writing. Describe safe work practices, work functions and sequence of activities to be followed on site to safely isolate all potential energy sources and lockout/tagout facilities and equipment.

.7 Include within procedures a system of worker request and issuance of individual lockout permit by a person, employed by Contractor, designated to be "in-charge" and being responsible for:

.1 Controlling issuance of permits or tags to workers.

.2 Determining permit duration.

.3 Maintaining record of permits and tags issued.

.4 Submitting a Request for Isolation to Departmental Representative when required in accordance with Clause 1.7 above.

.5 Designating a Safety Watcher, when one is required based on type of work.

1.8 LOCKOUTS (Cont'd)

.7 (Cont'd)
.6 Ensuring equipment or facility has been properly isolated, providing a Guarantee of Isolation to worker(s) prior to proceeding with work.
.7 Collecting and safekeeping lockout tags, returned by workers, as a record of the event.

.8 Clearly establish, describe and allocate, within procedures, the responsibilities of:
.1 Workers.
.2 Designated person controlling issuance of lockout tags/permits.
.3 Safety Watcher.
.4 Subcontractors and General Contractor.

.9 Procedures shall meet the requirements of Codes and Regulations specified in clause 1.5 above.

.10 Generic procedures, if used, must be edited, supplemented with pertinent information and tailored to reflect specific project conditions. Clearly label as being the procedures applicable to this contract.
.1 Incorporate site specific rules and procedures established by Facility Manager and in force at site. Obtain such procedures through Departmental Representative.

.11 Procedures to be in typewritten format.

.12 Submit copy of Lockout Procedures to Departmental Representative, in accordance with submittal requirements of clause 1.6 herein, prior to commencement of work.

1.9 CONFORMANCE

.1 Ensure that lockout procedures, as established for project on site, are stringently followed. Enforce use and compliance by all workers.

.2 Brief all persons working on electrical facilities, mechanical and other equipment fed by an energy source on requirements of this section.

.3 Failure to perform lockouts in accordance with regulatory requirements or follow procedures specified herein may result in the issuance of a Non-Compliance Notification at Departmental Representative's discretion with possible disciplinary measures imposed as specified in Section 01 35 29 - Health and Safety Requirements.

1.10 DOCUMENTS ON SITE

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

.2 Keep copies of Request for Isolation submitted to Departmental Representative and lockout permits or tags issued to workers during the course of work for full project duration.

.3 Upon request, make such data available to Departmental Representative or to authorized safety representative for inspection.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED WORK

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

.2 Section 02 82 00.02 - Asbestos Abatement - Intermediate Precautions.

1.2 DEFINITIONS

.1 COHS: Canada Occupational Health and Safety Regulations made under Part II of the Canada Labour Code.

.2 Competent Person: means a person who is:
.1 Qualified by virtue of personal knowledge, training and experience to perform assigned work in a manner that will ensure the health and safety of persons in the workplace, and;
.2 Knowledge about the provisions of occupational health and safety statutes and regulations that apply to the Work and;
.3 Knowledgeable about potential or actual danger to health and safety associated with the Work.

.3 Medical Aid Injury: any minor injury for which medical treatment was provided and the cost of which is covered by Workers' Compensation Board of the province in which the injury was incurred.

.4 PPE: personal protective equipment.

.5 Work Site: where used in this section shall mean areas, located at the premises where Work is undertaken, used by Contractor to perform all of the activities associated with the performance of the Work.

1.3 SUBMITTALS

.1 Make submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit site-specific Health and Safety Plan prior to commencement of Work.
.1 Submit within 10 work days of notification of Bid Acceptance. Allow for 5-10 days for Departmental Review and recommendations prior to the commencement of work.

1.3 SUBMITTALS (Cont'd)

.2 (Cont'd)
.2 Departmental Representative will review Health and Safety Plan and provide comments.
.3 Revise the Plan as appropriate and resubmit within 5 work days after receipt of comments.
.4 Departmental Representative's review and comments made of the Plan shall not be construed as an endorsement, approval or implied warranty of any kind by Canada and does not reduce Contractor's overall responsibility for Occupational Health and Safety of the Work.

.3 Submit name of designated Health & Safety Site Representative and support documentation specified in the Safety Plan.

.4 Submit building permit, compliance certificates and other permits obtained.

.5 Submit copy of Letter in Good Standing from Provincial Workers Compensation or other department of labour organization.
.1 Submit update of Letter of Good Standing whenever expiration date occurs during the period of Work.

.6 Submit copies of reports or directions issued by Federal, Provincial and Territorial health and safety inspectors.

.7 Submit copies of incident reports.

.8 Submit WHMIS MSDS - Material Safety Data Sheets.

1.4 COMPLIANCE REQUIREMENTS

.1 Comply with the Occupational Health and Safety Act for the Province of Newfoundland and Labrador, and the Occupational Health and Safety Regulations made pursuant to the Act.

.2 Comply with Canada Labour Code Part II, (entitled Occupational Health and Safety) and the Canada Occupational Safety and Health Regulations (COSH) as well as any other regulations made pursuant to the Act.
.1 The Canada Labour Code can be viewed at: http://laws.justice.gc.ca/eng/L-2/.
.2 COSH can be viewed at: http://laws.justice .gc.ca/eng/SOR-86-304/ne.html.

1.4 COMPLIANCE REQUIREMENTS (Cont'd)

.2 (Cont'd)
.3 A copy may be obtained at: Canadian Government Publishing Public & Works & Government Services Canada Ottawa, Ontario, K1A 0S9 Tel: (819) 956-4800 (1-800-635-7943) Publication No. L31-85/2000 E or F).

.3 Treasury Board of Canada Secretariat (TBS):
.1 Treasury Board, Fire Protection Standard April 1, 2010 www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=17316&sectio=text.

.4 Canadian Standards Association (CSA):
.1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.

.5 Observe construction safety measures of:
.1 Part 8 of National Building Code 2015.
.2 Provincial Worker's Compensation Board.
.3 Municipal by-laws and ordinances.

.6 In case of conflict or discrepancy between any specified requirements, the more stringent shall apply.

.7 Maintain Workers Compensation Coverage in good standing for duration of Contract. Provide proof of clearance through submission of Letter of Good Standing.

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

1.5 RESPONSIBILITY

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

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

1.6 SITE CONTROL AND ACCESS

.1 Control the work and entry points to Work Site. Approve and grant access only to workers and authorized persons.

.1 Departmental Representative will provide names of those persons authorized by Departmental Representative to enter onto Work Site and will ensure that such authorized personnel have the required knowledge and training on Health and Safety pertinent to their reason for being at the site, however, Contractor remains responsible for the health and safety of authorized persons while at the Work Site.

.2 Isolate work site from other areas of the premises by use of appropriate means.

.1 Erect fences, hoarding, barricades and temporary lighting as required to effectively delineate the Work Site, stop non-authorized entry, and to protect pedestrians and vehicular traffic around and adjacent to the Work and create a safe environment.

.2 Post signage at entry points and other strategic locations indicating restricted access and conditions for access.

.3 Use professionally made signs with bilingual message in the 2 official languages or international know graphic symbols.

.3 Provide safety orientation session to persons granted access to Work site. Advise of hazards and safety rules to be observed while on site.

.4 Ensure persons granted site access wear appropriate personal protective equipment (PPE). Supply PPE to inspection authorities who require access to conduct tests or perform inspections.

.5 Secure Work Site against entry when inactive or unoccupied and to protect persons against harm. Provide security guard where adequate protection cannot be achieved by other means.

1.7 PROTECTION

.1 Give precedence to safety and health of persons and protection of environment over cost and schedule considerations for Work.

1.7 PROTECTION (Cont'd)

.2 Should unforseen or peculiar safety related hazard or condition become evident during performance of work, immediately take measures to rectify the situation and prevent damage or harm. Advise Departmental Representative verbally and in writing.

1.8 FILING OF NOTICE

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

1.9 PERMITS

.1 Post permits, licenses and compliance certificate,specified in section 01 10 10, at Work site.

.2 Where particular permit or compliance certificate cannot be obtained, notify Departmental Representative in writing and obtain approval to proceed prior to carrying out application portion of work.

1.10 HAZARD ASSESSMENTS

.1 Perform site specific health and safety hazard assessment of the work and its site.

.2 Carry out initial assessment prior to commencementof work with further assessments as needed during progress of work, including when new trades and subcontractors arrive on site.

.3 Record results and address in Health and Safety Plan.

.4 Keep documentation on site for entire duration of the Work.

.5 Refer to Appendix A - Hazardous Building Material Assessment.

1.11 PROJECT/SITE CONDITIONS

.1 The following are known or potential project related safety hazards at site:
.1 The following are known or potential project related safety hazards at site:
.1 Working in close proximity of water.

1.11 PROJECT/SITE CONDITIONS (Cont'd)

.1 (Cont'd)

.1 (Cont'd)

.2 Wet and slippery conditions.
.3 Inclement weather.
.4 Rock moving activities involving large armour stone.
.5 Heavy equipment activity.
.6 Heavy lifting.
.7 Working at heights.
.8 Cutting tools and other construction power tools.
.9 Overhead and underground power/utility lines.
.10 Risk of electric shock.
.11 Lead paint.
.12 Asbestos.
.13 Mercury.
.14 Mould.
.15 Vehicular and pedestrian traffic.
.16 Hot/cold temperature extremes.
.17 Work with hazardous products.

.2 Above list shall not be construed as being complete and inclusive of potential health, and safety hazards encountered during work.

.3 Include above items into hazard assessment process.

.4 MSDS Data sheets of pertinent hazardous and controlled products stored on site can be obtained from Departmental Representative.

1.12 MEETINGS

.1 Attend pre-construction health and safety meeting, convened and chaired by Departmental Representative, prior to commencement of Work, at time, date and location determined by Departmental Representative. Ensure attendance of:
.1 Superintendent of work.
.2 Designated Health and Safety Site Representative.
.3 Subcontractors.

.2 Conduct regularly schedule tool box and safety meetings during the work in conformance with occupational Health and Safety Regulations.

.3 Keep documents on site.

1.13 HEALTH AND SAFETY PLAN

.1 Prior to commencement of Work, develop written Health and Safety Plan specific to the work. Implement, maintain, and enforce Plan for entire duration of Work and until final demobilization from site.

.2 Health and Safety Plan shall include the following components:
.1 List of health risks and safety hazards identified by hazard assessment.
.2 Control measures used to mitigate risks and hazards identified.
.3 On-Site Contingency and Emergency Response Plan as specified below.
.4 On-Site Communications Plan as specified below.
.5 Name of Contractor's designated Health & Safety Site Representative and information showing proof of his/her competence and reporting relationship in Contractor's company.
.6 Names, competence and reporting relationship of other supervisory personnel used in the Work for occupational health and safety purposes.

.3 On-site Contingency and Emergency Response Plan shall include:
.1 Operational Procedures, evacuation measures and communication process to be implemented in the event of an emergency.
.2 Evacuation Plan: site and floor plan layouts showing escape routes, marshaling areas. Details on alarm notification methods, fire drills, location of fire fighting equipment and other related data.
.3 Name, duties and responsibilities of persons designated as Emergency Warden(s) and deputies.
.4 Emergency Contacts: name and telephone number of officials from:
.1 General Contractor and subcontractors.
.2 Pertinent Federal and Provincial Departments and Authorities having jurisdiction.
.3 Local emergency resource organizations.
.5 Harmonize Plan with Facility's Emergency Response and Evacuation Plan. Departmental Representative will provide pertinent data including name or DFO and Facility Management Contacts.

.4 On-site Communication Plan:
.1 Procedures for sharing of work related safety information to workers and subcontractors, including emergency and evacuation measures.

1.13 HEALTH AND SAFETY PLAN (Cont'd)

.4 (Cont'd)
.2 List of critical work activities to be communicated with Facility manager which have a risk of endangering health and safety of Facility users.

.5 Address all work activities of the work including those of subcontractors.

.6 Review Health and Safety Plan regularly during the Work. Update as conditions warrant to address emerging risks and hazards, such as whenever new trade or subcontractor arrive at Work Site.

.7 Departmental Representative will respond in writing, where deficiencies or concerns are noted and may request re-submission of the Plan with correction of deficiencies or concerns.

.8 Post copy of Plan and updates, prominently on work site.

1.14 SAFETY SUPERVISION

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

.2 Health & Safety Site Representative may be the Superintendent of the Work or other person designated by Contractor and shall be assigned the responsibiity and authority to:
.1 Implement, monitor and enforce daily compliance withy health and safety requirements of the Work.
.2 Monitor and enforce Contractor's site-specific Health and Safety Plan.
.3 Conduct site safety orientation session to persons granted access to Work Site.
.4 Ensure that persons allowed site access are knowledgeable and trained in health and safety pertinent ot their activities at the site of are escorted by a competent person while on the Work Site.
.5 Stop the Work as deemed necessary for reasons of health and safety.

.3 Health & Safety Site Representative must:
.1 Be qualified and competent person in occupational health and safety.
.2 Have site-related working experience specific to activities of the Work.

1.14 SAFETY SUPERVISION (Cont'd)

.3 (Cont'd)

.3 Be on Work Site at all times during execution of the Work.

.4 All supervisory personnel assigned to the Work shall also be competent persons.

.5 Inspections:

.1 Conduct regularly scheduled safety inspections of the Work on a minimum bi-weekly basis. Record deficiencies and remedial action taken.

.2 Conduct formal inspections on a minimum monthly basis. Use standardized safety inspection forms. Distribute to subcontractors.

.3 Follow-up and ensure corrective measuresare taken.

.6 Cooperate with Facility's Occupational Health and Safety representative should one be designated by Departmental Representative.

.7 Keep inspection reports and supervision related documentation on site.

1.15 TRAINING

.1 Use only skilled workers on Work Site who are effectively trained in occupational health and safety procedures and practices pertinent to their assigned task.

.2 Maintain employee records and evidence of training received. Make data available to Departmental Representative upon request.

.3 When unforeseen or peculiar safety-related hazard, or condition occur during performance or Work, follow procedures in place for Employee's Right to Refuse Work in accordance with Acts and Regulations of Province having jurisdiction and advise Departmental Representative verbally and in writing.

1.16 MINIMUM SITE SAFETY RULES

.1 Notwithstanding the requirement to abide by federal and provincial health and safety regulations, ensure the following minimum safety rules are obeyed by persons granted access to Work Site:

.1 Wear appropriate personnel protective equipment (PPE) pertinent to the work or assigned task; minimum being hard hat, safety footwear, safety glasses and hearing protection.

1.16 MINIMUM SITE SAFETY RULES (Cont'd)

.1 (Cont'd)
.2 Immediately report unsafe condition at site, near-miss accident, injury and damage.
.3 Maintain site and storage areas in a tidy condition free of hazards causing injury.
.4 Obey warning signs and safety tags.

.2 Brief persons of disciplinary protocols to be taken for non-compliance. Post rules on site.

1.17 CORRECTION OF NON-COMPLIANCE

.1 Immediately address health and safety non-compliance issues identified by authority having jurisdiction or by Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance of health and safety issues identified.

.3 Departmental Representative will stop Work if non-compliance of health and safety regulations is not corrected in a timely manner.

1.18 INCIDENT REPORTING

.1 Investigate and report the following incidents to Departmental Representative:
.1 Incidents requiring notification to Provincial Department of Occupational Safety and Health, Workers Compensation Board or to other regulatory Agency.
.2 Medical aid injuries.
.3 Property damage in excess of $10,000.00.
.4 Interruptions to Facility operations resulting in an operational loss to a Federal Department in excess of $5000.00.

.2 Submit report in writing.

1.19 HAZARDOUS PRODUCTS

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

.2 Keep MSDS data sheets for all products delivered to site.
.1 Post on site.
.2 Submit copy to Departmental Representative.

1.20 TOOLS AND EQUIPMENT SAFETY

.1 Routinely check and maintain tools, equipment and machinery for safe operation.

.2 Conduct checks as part of site safety inspections. When requested, submit proof that checks and maintenance have been carried out.

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

1.21 BLASTING

.1 Blasting or other use of explosives is not permitted on site without prior receipt of written permission and instructions from Departmental Representative.

.2 Do blasting operations in accordance with local and provincial codes.

1.22 POWDER ACTUATED DEVICES

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

1.23 CONFINED SPACES

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

.2 Obtain an Entry Permit in accordance with Part XI of the Canada Occupational Health and Safety Regulations for entry into an existing identified confined space located at the Facility of premises of Work.

.1 Obtain permit from Facility Manager.

.2 Keep copy of permit issued.

.3 Safety for Inspectors:

.1 Provide PPE and training to Departmental Representative and other persons who require entry into confined space to perform inspections.

.2 Be responsible for efficacy of equipment and safety of persons during their entry and occupancy in the confined space.

1.24 SITE RECORDS

.1 Maintain on work site a copy of safety regulated documentation and reports stipulated to be produced in compliance with Acts and Regulations of authorities having jurisdiction and of those documents specified herein.

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

1.25 POSTING OF DOCUMENTS

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

.2 Post other documents as specified herein, including:

.1 Site specific Health and Safety Plan.

.2 WHMIS data sheets.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 74 19 - Waste Management and Disposal.

.2 Section 02 82 00.02 - Asbestos Abatement - Intermediate Precautions.

1.2 REFERENCES

.1 Canada Shipping Act, Transport Canada, 2001, amended 2013-12-01.

.2 Canadian Coast Guard Regulations, Fisheries and Oceans Canada.

.3 Canadian Environmental Assessment Act, 2012, amended 2013-11-25.

.4 Canadian Environmental Protection Act, 1999, amended on 2014-03-28.

.5 Fisheries Act, 1985, Fisheries and Oceans Canada, amended 2013-11-25.

.6 Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters, 1998.

.7 Migratory Birds Convention Act, 1994, Environment Canada, amended 2010-12-10.

.8 Navigation Protection Act, 1985. Transport Canada,amended 2014-04-01.

.9 NL Provincial Environment Acts and Regulations.

.10 Species at Risk Act, 2002, amended 2013-03-08.

.11 The Federal Policy on Wetland Conservation, 1991, Environment Canada.

.12 Transportation of Dangerous Goods Act, 1992, Transport Canada, amended 2009-06-16.

.13 Workplace Hazardous Materials Information System, Health Canada.

1.3 DEFINITIONS

.1 Archaeological resources: all tangible evidence of human activity that is of historical, cultural or scientific interest. Examples include features, structures, archaeological objects or remains or from an archaeological site, or an object recorded as an isolated archaeological find.

.2 Buffer zone: a vegetated land that protects watercourses from adjacent land uses. It refers to the land adjacent to watercourses, such as streams, rivers, lakes, ponds, oceans, and wetlands, including the floodplain and the transitional lands between the watercourse and the drier upland areas.

.3 Deleterious substance: (a) any substance that, if added to any water, would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish orfish habitat or to the use by man of fish that frequent that water, or (b) any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water.

.4 Fish habitat: spawning grounds and any other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes.

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

.6 Navigable water: a canal and any other body of water created or altered as a result of the construction of any work.

1.3 DEFINITIONS (Cont'd)

.7 Surface watercourse: refers to the bed and shore of a river, stream, lake, creek, pond, marsh, estuary or salt-water body that contains water for at least part of each year.

1.4 FIRES

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

1.5 DISPOSAL OF WASTES AND HAZARDOUS MATERIALS

.1 All creosote timber obtained from the demolition of the existing structure is to be transported and disposed of at Norris Arm or Robin Hood Bay as the required waste disposal site and in accordance with applicable federal/provinical and municipal legislation and regulations.

.2 Reuse/storage creosote/CCA or preservative treated timbers outside of the work site is strictly prohibited.

.3 Excavated materials from the project are to be disposed of at an approved provincial landfill only, pending prior approval from the site owner/operator. Disposal of the materials must be done so in accordance with applicable federal/provincial legislation. Excavated materials are not permitted to be reused or disposed of at any other location other than a provincial landfill unless approved by the Departmental Representative.

.4 Dispose of construction waste materials and demolition debris, resulting from work, at approved landfill sites only. Carry out such disposal in strict accordance with provincial and municipal rules and regulations. Separate out and prevent improper disposal of items banned from landfills.

.5 Disposal of hazardous waste as identified in Appendix A is to be disposed of at approved landfill site. Refer to Section 02 41 13 - Selective Site Demolition and Section 02 82 00.02 - Asbestos Abatement - Intermediate Precautions.

.6 Do not bury rubbish and waste materials on site. Dispose at approved landfill sites as specified in Section 01 74 19 - Waste Management and Disposal.

1.5 DISPOSAL OF WASTES AND HAZARDOUS MATERIALS (Cont'd)

.7 Do not dispose of hazardous waste or volatile materials, such as mineral spirits, paints, thinners, oil or fuel into waterways, storm or sanitary sewers or waste landfill sites.

.8 Store, handle and dispose of hazardous materials and hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines.

.9 Establish methods and undertake construction practices which will minimize waste and optimize use of construction materials. Separate at source all construction waste materials, demolition debris and product packaging and delivery containers into various waste categories in order to maximize recycling abilities of various materials and avoid disposal of debris at landfill site(s) in a "mixed state". Where recycling firms, specializing in recycling of specific materials exist, transport such materials to the recycling facility and avoid disposal at landfill sites.

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

1.6 TRANSPORTATION

.1 Transport hazardous materials and hazardous waste in compliance with the Transportation of Dangerous Goods Act.

.2 Eliminate free board spillage when excavating, loading and hauling excavated material.

.3 Trucks transporting excavated material will have watertight boxes.

.4 Do not overload trucks when hauling excavated material.

.5 Maintain trucks clean and free of mud, dirt and other foreign matter.

.6 Secure contents against spillage. Avoid potential release of contents and of any foreign matter onto highways, roads and access routes used for the work. Immediately clean any ground spills and soils to extent as directed by authority having jurisdiction.

1.6 TRANSPORTATION (Cont'd)

.7 Prior to commencement or work, advise and seek approval from the Departmental Representative of the existing roads and temporary routes/roads proposed to be used to access work areas and to haul material to and from site, including roads to the excavated material disposal site.

.8 Construction material and debris is not to become waterborne.

1.7 DRAINAGE

.1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.

.2 Do not pump water containing suspended materials into waterways, sewer or drainage systems.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with governing regulations and requirements.

.4 Pumped water must meet applicable federal, provincial, and municipal standards before it can be discharged to a surface water body. If regulatory guidelines exceedences are noted, the Departmental Representative has the right to issue stop pumping instructions to the Contractor. Contractor will not be compensated for any delays associated with retrofitting equipment to meet guidelines.

.5 Provide control devices such as filter fabrics, sediment traps and settling ponds to control drainage and prevent erosion of adjacent land. Maintain in good order for duration of work.

1.8 CONTAINMENT AND SPILL MANAGEMENT

.1 Comply with Federal (CEPA Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations) and Provincial regulations, codes, standards and guidelines for the storage of fuel and allied petroleum products on or near the site.

.2 Do not dump petroleum products or any other deleterious substances on ground or in the water.

1.8 CONTAINMENT AND SPILL MANAGEMENT (Cont'd)

.3 Be diligent and take all necessary precautions to avoid spills and activities that may potentially contaminate the soil and water (both surface and subsurface) when handling petroleum products on site and during fueling and servicing of vehicles and equipment.

.4 Maintain on site appropriate emergency spill response equipment consisting of al least one 250-litre (55 gallon) over pack spill kit for containment and cleanup of spills.

.5 Maintain vehicles and equipment in good working order to prevent leaks on site.

.6 In the event of a petroleum spill, immediately notify the Departmental Representative and the Canadian Coast Guard (CCG) at 1-800-565-1633 (24 hour report line). Perform clean-up in accordance with all regulations and procedures stipulated by authority having jurisdiction.

.7 Materials such as paint, primers, blasting abrasives, rust solvents, degreasers, grout, or other chemicals are not to enter the watercourse.

1.9 PERMIT

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

1.10 WORK ADJACENT TO WATERWAYS

.1 Do not operate construction equipment in waterways.

.2 Do not use waterway beds for borrow material.

.3 Do not dump excavated fill, waste material or debris in waterways.

.4 At borrow sites, design and construct temporary crossings to minimize erosion to waterways in strict conformance with provincial and federal environmental regulations.

.5 Do not skid logs or construction materials across waterways.

.6 Do not refuel any type of equipment within 100 meters of a water body. Maintain equipment in good working condition with no fluid leaks, loose hoses or fittings.

1.11 POLLUTION CONTROL

.1 Maintain temporary erosion and pollution control features installed under this contract.

.2 Control emissions from equipment and plant to local authorities' emission requirements.

.3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.

.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads and around entire construction site.

.5 Maintain inventory of hazardous materials and hazardous waste stored on site. List items by product name, quantity and date when storage began.

.6 Have emergency spill response equipment and rapid clean-up kit, appropriate to work, at site. Locate adjacent to work and where hazardous materials are stored. Provide personal protective equipment as required for clean-up.

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

1.12 ARCHAEOLOGICAL

.1 All construction personnel are responsible for reporting any unusual materials unearthed during construction to the construction supervisor. If the find is believed to be an archaeological resource, the construction supervisor will immediately stop work in the vicinity of the find and notify his/her immediate supervisor.

.2 If an archaeological and/or historically significant item is discovered during excavation, work in the area will be stopped immediately and the Departmental Representative will be contacted.

.3 Work can only resume in the vicinity of the find when authorized by the DFO Project Manager.

1.12 ARCHAEOLOGICAL (Cont'd)

.4 In the event of the discovery of human remains or evidence or burials, the excavation work will immediately cease and nearest law enforcement agency will be contacted immediately by the Departmental Representative.

END OF SECTION

PART 1 - GENERAL

1.1 ACCESS

.1 Provide and maintain adequate access to project site.

.2 Maintain access roads for duration of contract and make good damage resulting from Contractors' use of roads.

1.2 CONTRACTOR'S SITE OFFICE

.1 Be responsible for and provide own site office, if required, including electricity, heat, lights and telephone. Locate site office as directed by Departmental Representative.

1.3 DEPARTMENTAL REPRESENTATIVE'S SITE OFFICE

.1 Provide or construct a separate site office for the use of the Departmental Representative and the Site Representative. The building must be in place prior to commencement of work.

.2 Provide heating system to maintain 22°C inside temperature at -20°C outside temperature.

.3 The building will be approximately 2400 mm x 3600 mm. It will have a suitable frame covered with a weatherproof siding and lined with plywood or other approved material. The floor will be of 19 mm thick material. It will be provided with suitable window with at least 1 m^2 of glass and arranged to provide at least 0.5 m^2 of screened opening. The door will be fitted with a lockset and 2 keys.

.4 The office will be equipped with a drafting chair and a 900 mm x 1500 mm table having a hinged, smooth wooden top suitable for drafting.

.5 Install electrical lighting system to provide minimum 750 lux using surface mounted, shielded commercial fixtures with 10% upward light component.

.6 Maintain office in clean condition.

.7 Provide sanitary facilities for the Departmental Representative in accordance with governing regulations and accepted by Departmental Representative.

1.3 DEPARTMENTAL REPRESENTATIVE'S SITE OFFICE (Cont'd)

.8 Arrange and pay for telephone, internet access, and facsimile machine in the Departmental Representative's Office for Site Representative's exclusive use. Long distance calls or faxes placed on this phone by the Departmental Representative or the Site Representative will be paid by the Departmental Representative.

.9 Contractor may, on approval of Departmental Representative, provide cellular or mobile phone. If approval to use cellular or mobile phone is granted, be responsible for all services, airtime, license and network access fees, and all other fees or charges required to utilize the phone as intended by the manufacturer.

1.4 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take such precautions as required by local health authorities. Keep area and premises in sanitary condition.

1.5 POWER

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

.2 Supply and install all temporary facilities for power such as pole lines and underground cables to approval of local power supply authority.

1.6 WATER SUPPLY

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

1.7 SCAFFOLDING

.1 Design, construct and maintain scaffolding in rigid, secure and safe manner in accordance with Z797-09 (R2014).

.2 Erect scaffolding independent of walls. Remove when no longer required.

1.8 CONSTRUCTION SIGN AND NOTICES

.1 Contractor or subcontractor advertisement signboards are not permitted on site.

.2 Only notices of safety or instructions are permitted on site.

.3 Safety and Instruction Signs and Notices:
.1 Signs and notices for safety and instruction shall be in both official languages. Graphic symbols shall conform to CAN/CSA-Z321-96 (R2006).

.4 Maintenance and Disposal of Site Signs:
.1 Maintain approved signs and notices in good condition for duration of project and dispose of off site on completion of project or earlier if directed by Departmental Representative.

1.9 REMOVAL OF TEMPORARY FACILITIES

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

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Barriers.

.2 Traffic Controls.

1.2 INSTALLATION AND REMOVAL

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

.2 Remove from site all such work after use.

1.3 HOARDING

.1 Erect temporary site enclosures using 1.8 m high x 2.4 m long welded wire galvanized mesh panel with end post of 32 mm dia. galvanized tubes. Each panel shall have a "hook" end of clamp system to engage the top of the adjoining panel post. Panel support base plate of 12 ga. galvanized steel plate with double "stems" to engage and support tube frame ends.

.2 Provide (2) swing frame gates using galvanized steel tube 50 mm and vertical and horizontal bars rigid frame wire mesh to match fence panels. Provide hinge to structurally support all gates without deformation gravity system that is self-latching. Provide one drop bar to secure in closed position and padlock for night security. Keys to be supplied to Departmental Representative.

.3 Secure fencing at established boundary lines inside property lines as shown on drawings and/or determined by Departmental Representative. Second base plates to ground with 15 mm x 250 mm long (2 pen plate) lag screws placed into existing asphalt. After removal, fill holes with cold patch.

1.4 GUARD RAILS AND BARRICADES

.1 Provide secure, rigid guard rails and barricades around open excavations.

.2 Provide barricades along wharf structure when wheelguard is not in place.

.3 Provide as required by governing authorities.

1.5 ACCESS TO SITE

.1 Provide and maintain access to adjacent harbour facilities.

1.6 PUBLIC TRAFFIC FLOW

.1 Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the public.

1.7 FIRE ROUTES

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

1.8 PROTECTION FOR OFF-SITE AND PUBLIC PROPERTY

.1 Protect surrounding private and public property from damage during performance of Work.

.2 Be responsible for damage incurred.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

.1 This section specifies requirements for board, lodgings and related services to be provided by the Contractor for the Inspector.

.2 Due to the location of this site, it is a requirement of this contract that the Contractor provide and pay for all board and lodgings for the Inspector's sole use for the duration of the project. Provide for and maintain acceptable living accommodations for the Inspector's sole use. The minimum requirement would be a self-contained unit with private sleeping accommodation and shower or bath or other arrangement approved by the Inspector.

1.2 BOARD AND LODGINGS

.1 For the purpose of this contract board and lodgings shall include but not necessarily be limited to: sleeping accommodation, meals and dining facilities, washroom facilities, laundry facilities, electrical and heating service, linens and bedding, etc. and any reasonable service as directed by the Inspector.

.2 Board and lodgings must be approved by the Inspector and Contractor will cooperate in providing all services required to maintain an acceptable standard of living during construction period.

.3 The Contractor shall include all calendar days, including weekends and statutory holidays in determining the cost.

1.3 REQUIREMENTS OF REGULATORY AGENCIES

.1 Comply with any or all applicable Agencies regulation of the Province of Newfoundland and Labrador, relating to the set up, servicing and maintenance of accommodations for the Inspector.

1.4 MEASUREMENT FOR PAYMENT

.1 No measurement for payment to be made under this section including all cost of this section in the lump sum items of this contract.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL

.1 Use new material and equipment unless otherwise specified.

.2 Within 7 days of written request by Departmental Representative, submit following information for any materials and products proposed for supply:
.1 name and address of manufacturer;
.2 trade name, model and catalogue number;
.3 performance, descriptive and test data;
.4 manufacturer's installation or application instructions;
.5 evidence of arrangements to procure;
.6 evidence of manufacturer delivery problems or unforseen delays.

.3 Provide material and equipment of specified design and quality, performing to published ratings and for which replacement parts are readily available.

.4 Use products of one manufacturer for equipment or material of same type or classifications unless otherwise specified.

.5 Permanent labels, trademarks and nameplates on products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

1.2 PRODUCT QUALITY AND REFERENCED STANDARDS

.1 Contractor shall be solely responsible for submitting relevant technical data and independent test reports to confirm whether a product or system proposed for use meets contract requirements and specified standards.

.2 Final decision as to whether a product or system meets contract requirements rest solely with the Departmental Representative in accordance with the General Conditions.

1.3 ACCEPTABLE MATERIALS AND ALTERNATIVES

.1 Acceptable Materials: When materials specified include trade names or trade marks or manufacturer's or supplier's name as part of the material description, select and only use one of the names listed for incorporation into the Work.

1.3 ACCEPTABLE MATERIALS AND ALTERNATIVES (Cont'd)

.2 Alternative Materials: Submission of alternative materials to trade names or manufacturer's names specified must be done during the bidding period following procedures indicated in the Instructions to Bidders.

.3 Substitutions: After acceptance of bid, substitution of a specified material will be dealt with as a change to the Work in accorance with the General Conditions of the Contract.

1.4 MANUFACTURERS INSTRUCTIONS

.1 Unless otherwise specified, comply with manufacturer's latest printed instructions for materials and installation methods to be used. Do not rely on labels or enclosure provided with products. Obtain written instructions directly from manufacturers.

.2 Notify Departmental Representative in writing of any conflict between these specifications and manufacturers instructions, so that Departmental Representative will designate which document is to be followed.

1.5 AVAILABILITY

.1 Immediately notify Departmental Representative in writing of unforseen or unanticipated material delivery problems by manufacturer. Provide support documentation as per Clause 1.1.2 above.

1.6 WORKMANSHIP

.1 Ensure quality of work is of highest standard, executed by workers experienced and skilled in respective duties for which they are employed.

.2 Remove unsuitable or incompetent workers from site as stipulated in General Conditions.

.3 Ensure cooperation of workers in laying out work. Maintain efficient and continuous supervision on site at all times.

.4 Coordinate work between trades and subcontractors.

.5 Coordinate placement of openings, sleeves and accessories.

1.7 FASTENINGS - GENERAL

.1 Provide metal fastenings and accessories in same texture, colour and finish as base metal in which they occur. Prevent electrolytic action between dissimilar metals. Use non-corrosive fasteners, anchors and spacers for securing exterior work and in humid areas.

.2 Space anchors within limits of load bearing or shear capacity and ensure that they provide positive permanent anchorage. Wood or organic material plugs not acceptable.

.3 Keep exposed fastenings to minimum, space evenly and lay out neatly.

.4 Fastenings which cause spalling or cracking of material to which anchorage is made, are not acceptable.

.5 Do not use explosive actuated fastening devices unless approved by Departmental Representative. See Section 01 35 29 - Health and Safety Requirements in this regard.

1.8 FASTENINGS - EQUIPMENT

.1 Use fastenings of standard commercial sizes and patterns with material and finish suitable for service.

.2 Use heavy hexagon heads, semi-finished unless otherwise specified.

.3 Bolts may not project more than one diameter beyond nuts.

.4 Use plain type washers on equipment, sheet metal and soft gasket lock type washers where vibrations occur. Use resilient washers with stainless steel.

1.9 STORAGE, HANDLING AND PROTECTION

.1 Deliver, handle and store materials in manner to prevent deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled materials in original and undamaged condition with manufacturer's seal and labels intact. Do not remove from packaging or bundling until required in Work. Provide additional cover where manufacturer's packaging is insufficient to provide adequate protection.

1.9 STORAGE, HANDLING AND PROTECTION (Cont'd)

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Store cementitious products clear or earth or concrete floors, and away from walls.

.5 Keep sand, when used for grout or mortar materials, clean and dry. Store sand on wooden platforms and cover with waterproof tarpaulins during inclement weather.

.6 Store sheet materials and lumber on flat, solid supports and keep clear of ground. Slope to shed moisture.

.7 Store and mix paints in heated and ventilated room. Remove oily rags and other combustible debris from site daily. Take every precaution necessary to prevent spontaneous combustion.

.8 Immediately remove damaged or rejected materials from site.

.9 Touch-up damaged factory finished surfaces to Departmental Representative's satisfaction. Use touch-up materials to match original. Do not paint over name plates.

END OF SECTION

PART 1 - GENERAL

1.1 GENERAL

.1 Conduct cleaning and disposal operations to comply with local ordinaces and anti-pollution laws.

.2 Store volatile waste in covered metal containers, and remove from premises at end of each working day.

.3 Prevent accumulation of wastes which create hazardous conditions.

.4 Provide adequate ventilation during use of volatile or noxious substances.

1.2 MATERIALS

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

1.3 CLEANING DURING CONSTRUCTION

.1 Maintain project grounds and public properties in a tidy condition, free from accumulations of waste material and debris. Clean areas on a daily basis.

.2 Provide on-site garbage containers for collection of waste materials and debris.

.3 Remove waste materials and debris from site on a daily basis.

1.4 FINAL CLEANING

.1 In preparation for acceptance of the Work perform final cleaning.

.2 Inspect finishes, fitments and equipment. Ensure specified workmanship and operation.

.3 Broom clean exterior paved and concrete surfaces; rake clean other surfaces of grounds.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 35 43 - Environmental Procedures.

.2 Section 02 41 13 - Selective Site Demolition.

.3 Section 02 41 16 - Structure Demolition.

1.2 WASTE MANAGEMENT PLAN

.1 Prior to commencement of work, prepare waste Management Workplan.

.2 Workplan to include:
.1 Waste audit.
.2 Waste reduction practices.
.3 Material source separation process.
.4 Procedures for sending recyclables to recycling facilities.
.5 Procedures for sending non-salvageable items and waste to approved waste processing facility or landfill site.
.6 Training and supervising workforce on waste management at site.

.3 Workplan to incorporate waste management requirements specified herein and in other sections of the Specifications.

.4 Develop Workplan in collaboration with all subcontractors to ensure all waste management issues and opportunities are addressed.

1.3 WASTE AUDIT

.1 At project start-up, conduct waste audit of:
.1 Site conditions identifying salvageable and non-salvageable items and waste resulting from demolition and removal work.
.2 Projected waste resulting from product packaging and from material leftover after installation work.

.2 Develop written list. Record type, composition and quantity of various salvageable items and waste anticipated, reasons for waste generation and operational factors which contribute to waste.

1.4 WASTE REDUCTION

.1 Based on waste audit, develop waste reduction program.

.2 Structure program to prioritize actions, with waste reduction as first priority, followed by salvage and recycling effort, then disposal as solid waste.

.3 Identify materials and equipment to be:
.1 Protected and turned over to Departmental Representative when indicated.
.2 Salvaged for resale by Contractor.
.3 Sent to recycling facility.
.4 Sent to waste processing/landfill site for their recycling effort.
.5 Disposed of in approved landfill site.

.4 Reduce construction waste during installation work. Undertake practices which will minimize waste and optimize full use of new materials on site, such as:
.1 Use of a central cutting area to allow for easy access to off-cuts;
.2 Use of off-cuts for blocking and bridging elsewhere.
.3 Use of effective and strategically placed facilities on site for storage and staging of left-over or partially cut materials to allow for easy incorporation into work whenever possible avoiding unnecessary waste.

.5 Develop other strategies and innovative procedures to reduce waste such as minimizing the extent of packaging used for delivery of materials to site, etc.

1.5 MATERIALS SOURCE SEPARATION PROCESS

.1 Develop and implement material source separation process at commencement of work as part of mobilization and waste management at site.

.2 Provide on-site facilities to collect, handle, and store anticipated quantities of reusable, salvageable and recyclable materials.
.1 Use suitable containers for individual collection of items based on intended purpose.
.2 Locate to facilitate deposit but without hindering daily operations of existing building tenants.
.3 Clearly mark containers and stockpiles as to purpose and use.

1.5 MATERIALS SOURCE SEPARATION PROCESS (Cont'd)

.3 Perform demolition and removal of existing components and equipment following a systematic deconstruction process.

.1 Separate materials and equipment at source, carefully dismantling, labelling and stockpiling alike items for the following purposes:

.1 Reinstallation into the work where indicated.

.2 Salvaging resusable items not needed in project which Contractor may sell to other parties. Sale of such items not permitted on site.

.3 Sending as many items as possible to locally available recycling facility.

.4 Segregating remaining waste and debris into various individual waste categories for disposal in a "non-mixed state" as recommended by waste processing/landfill sites.

.4 Isolate product packaging and delivery containers from general waste stream. Send to recycling facility or return to supplier/manufacturer.

.5 Send leftover material resulting from installation work for recycling whenever possible.

.6 Establish methods whereby hazardous and toxic waste materials, and their containers, encountered or used in the course work are properly isolated, stored on site and disposed in accordance with applicable laws and regulations from authorities having jurisdiction.

.7 Isolate and store existing materials and equipment identified for re-incorporation into the Work. Protect against damage.

1.6 WORKER TRAINING AND SUPERVISION

.1 Provide adequate training to workforce, through meetings and demonstrations, to emphasize purpose and worker responsibilities in carrying out the Waste Management Plan.

.2 Waste Management Coordinator: designate full-time person on site, experienced in waste management and having knowledge of the purpose and content of Waste Management Plan to:

.1 Oversee and supervise waste management during work.

.2 Provide instructions and directions to all workers and subcontractors on waste reduction, source separation and disposal practices.

1.6 WORKER TRAINING AND SUPERVISION (Cont'd)

.3 Post a copy of Plan in a prominent location on site for review by workers.

1.7 CERTIFICATION OF MATERIAL DIVERSION

.1 Submit to Departmental Representative, copies of certified weigh bills from authorized waste processing sites and sale receipts from recycling/reuse facilities confirming receipt of building materials and quantity of waste diverted from landfill.

.2 Submit data at pre-determined project milestones as determined by Departmental Representative.

.3 Compare actual quantities diverted from landfill with projections made during waste audit.

1.8 DISPOSAL REQUIREMENTS

.1 All creosote treated timber obtained from the demolition of the existing structure is to be transported and disposed of at the Norris Arm or Robin Hood Bay Regional Waste Disposal Facilities only, pending prior approval from the site owner/operator (Norris Arm WMF 709-653-2900) and in association with applicable federal/provincial and municipal legislation and regulations. Reuse/storage of creosote timbers outside of the work site is strictly prohibited.

.2 Contact the authority having jurisdiction prior to commencement of work, to determine what, if any, demolition and construction waste materials have been banned from disposal in landfills and at transfer stations. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.

.3 Reuse/storage of creosote/CCA or preservative treated timbers outside of the work site is strictly prohibited.

1.8 DISPOSAL REQUIREMENTS (Cont'd)

.4 Excavated material from the project are to be disposed of at an approved provincial landfill only, pending prior approval from the site owner/operator. Disposal of the excavated materials must be done so in accordance with applicable federal/provincial legislation. Materials are not permitted to be reused or disposed of at any other location other than a provincial landfill unless approved by the Departmental Representative.

.5 Contact the authority having jurisdiction prior to commencement of work, to determine what, if any, demolition and construction waste materials have been banned from disposal in landfills and at transfer stations. Take appropriate action to isolate such banned materials at site of work and dispose in strict accordance with provincial and municipal regulations.

.6 Transport waste intended for landfill in separated condition, following rules and recommendations of Landfill Operator in support of their effort to divert, recycle and reduce amount of solid waste placed in landfill.

.7 Disposal of hazardous waste material as identified in Appendix A is to be disposed of at an approved landfill site. Refer to Section 02 41 13 - Selective Site Demolition and Section 02 82 00.02 - Asbestos Abatement - Intermediate Precautions.

.7 Dispose of waste only at approved waste processing facility or landfill sites approved by authority having jurisdiction.

.8 Dispose of treated wood, end pieces, wood scraps and sawdust at a sanitary landfill.

.9 Do not dispose of preservative treated wood through incineration.

.10 Disposal of waste, volatile materials, mineral spirits, oil, paint, paint thinner or unused perservative material into waterways, storm, or sanitary sewers is prohibited.

.11 Burying or burning of rubbish and waste materials is prohibited.

.12 Collect, bundle and transport salvaged materials to be recycled in separated categories and condition as directed by recycling facility. Ship materials only to approved recycling facilities.

1.8 DISPOSAL REQUIREMENTS (Cont'd)

.13 Sale of salvaged items by Contractor to other parties not permitted.

1.9 SUBCONTRACTOR'S RESPONSIBILITY

.1 Subcontractors shall cooperate fully with the Contractor to implement the waste management work plan.

.2 Failure to cooperate may result in the Owner not achieving their environmental goals, and may result in penalties being assessed by the Contractor to the responsible Subcontractors.

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Project Record Documents as follows:
- .1 As-built drawings;
- .2 As-built specifications;
- .3 Reviewed shop drawings.

1.2 PROJECT RECORD DOCUMENTS

.1 Departmental Representative will provide two white print sets of contract drawings and two copies of Specifications Manual specifically for "as-built" purposes.

.2 Maintain at site one set of the contract drawings and specifications to record actual as-built site conditions.

.3 As-Built Drawings:

.1 Record changes in red ink on the prints. Mark only on one set of prints and at completion of project and prior to final inspection, neatly transfer notations to second set (also by use of red ink). Submit both sets to Departmental Representative. All drawings of both sets shall be stamped "As-Built Drawings" and be signed and dated by Contractor.

.2 Show all modifications, substitions and deviations from what is shown on the contract drawings or in specifications.

.3 Record following information:

- .1 Horizontal and vertical location of various elements in relation to CHS Chart Datum.
- .2 Field changes of dimension and detail.
- .3 All design elevations, sections, and details dimensioned and marked-up to consistently report finished installation conditions.
- .4 Any details produced in the course of the contract by the Departmental Representative to supplement or to change existing design drawings must also be marked-up and dimensioned to reflect final as-built conditions and appended to the as-built drawing document.

1.2 PROJECT RECORD DOCUMENTS (Cont'd)

.3 (Cont'd)

.3 (Cont'd)

.5 All change orders issued over the course of the contract must be documented on the finished as-built documents, accurately and consistently depicting the changed condition as it applies to all affected drawing details.

.4 As-built Specifications: legibly mark in red each item to record actual construction, including:

.1 Manufacturer, trade name, and catalogue number of each product actually installed, particularly items substituted from that specified.

.2 Changes made by Addenda and Change Orders.

.3 Mark up both copies of specifications; stamp "as-built", sign and date similarly to drawings as per above clause.

.5 Provide digital photos, if requested, for site records.

1.3 WARRANTIES AND BONDS

.1 Develop warranty management plan to contain information relevant to Warranties.

.2 Warranty management plan to include required actions and documents to assure that Departmental Representative receives warranties to which it is entitled.

.3 Submit Warranty information made available during construction phase to Departmental Representative for approval prior to each monthly pay estimate.

.4 Assemble approved information in binder, submit upon acceptance of work and organize binder as follows:

.1 Separate each warranty or bond 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 and bonds, executed in duplicate by subcontractors, suppliers, and manufacturers, within ten days after completion of applicable item of work.

.4 Retain warranties and bonds until time specified for submittal.

1.3 WARRANTIES AND BONDS (Cont'd)

.5 Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial Performance is determined.

.6 Respond in a timely manner to oral or written notification of required construction warranty repair work.

1.4 REVIEWED SHOP DRAWINGS

.1 Compile 2 full sets of all reviewed shop drawings.

END OF SECTION

PART 1 - GENERAL

1.1 SECTIONS INCLUDES

.1 Methods and procedures for demolishing and removing hazardous building materials. The Hazardous Building Material Assessment report is appended to the specifications.

1.2 GENERAL REQUIREMENTS

.1 Prior to general disturbance activity, all asbestos containing materials are to be safely removed from the building and disposed of in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98). Refer to specification section 02 82 00.02 "Asbestos Abatement - Intermediate Precautions", for specific requirements.

.2 Mercury-containing fluorescent light tubes or bulbs are to be removed intact and returned to the manufacturer for recycling, or disposed of at an approved facility.

.3 Painted surfaces (walls/ceiling/floors) in the former processing area is to have the paint removed down to the original substrate. The paint removed (including any spent abrasives, if sand blasting is employed), is to be disposed of as hazardous waste at an approved facility such as TerraPure in Foxtrap. Precautions are to be taken during removal or disturbance of painted surfaces to limit workers occupational exposure to lead dust (refer to minimum requirements outlined in this specification section).

.4 Workers are to wear appropriate PPE when handling mould stained building materials. There are no provincial disposal guidelines for mould-impacted building materials. These materials may be disposed of at any municipal landfill, provided they do not contain unacceptable levels of other hazardous materials (e.g., metals-based paint, asbestos, etc.)

.5 All light ballasts are to be handled, decontaminated, transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations governing PCBs. In cases where the ballast is clearly stamped as "non-PCBs", the ballast may be disposed of in the regular waste stream.

1.2 GENERAL REQUIREMENTS (Cont'd)

.6 All debris scattered throughout the buiding is to be disposed of in accordance with the "NL Waste Management Regulations" under the "Waste Management Act". Take inventory of materials during pre-tender site visit and carry all costs for disposal of the debris. This includes any copper piping (with lead solder), obsolete equipment, pipe fittings and other items as noted in the hazmat report.

.7 ODS equipment containing refrigerants are regulated at both a Provincial and Federal level, and disposal of this equipment must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations. Take inventory of any refrigeration equipment during the pre-tender site visit and carry all costs for disposal of this equipment.

.8 When disturbing concrete surfaces, wet the surface before disturbing it, to prevent dust emissions and exposure to silica. If there is potential for workers to be exposed to dust, don respiratory protectin during work activities.

1.3 RELATED SECTIONS

.1 Section 01 74 19 - Waste Management and Disposal.

.2 Section 02 82 00.02 - Asbestos Abatement - Intermediate Precautions.

.3 Section 02 41 16 - Structure Demolition.

1.4 SUBMITTALS

.1 Shop Drawings
.1 Submit shop drawings showing layout any proposed decontamination units.

.2 Submit copies of certified weigh bills, bills of landing from authorized disposal sites, hazardous waste transfer sites and reuse and recycling facilities for material removed from upon request from Owner's Representative.

1.5 QUALITY ASSURANCE

.1 Convene pre-installation meeting one week prior to beginning work of this section to:
.1 Verify project requirements.
.2 Review installation and substrate conditions.
.3 Co-ordinate with building subtrades.

1.6 SITE CONDITIONS

.1 In all circumstances ensure that demolition work does not adversely affect adjacent water courses groundwater and wildlife, or contribute to excess air and noise pollution.

.2 Do not dispose, of waste or volatile materials such as mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers. Ensure proper disposal procedures are maintained throughout project.

.3 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.

.4 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authorities.

1.7 EXISTING CONDITIONS

.1 Prior to start of any major demolition work, remove contaminated or hazardous materials as defined in this section.

PART 2 - PRODUCTS

2.1 PRODUCTS

.1 Not applicable.

PART 3 - EXECUTION

3.1 PREPARATION

.1 Inspect site with Owner's Representative and verify extent and location of items designated for removal, disposal, alternative disposal and recycling.

.2 Notify and obtain approval of utility companies before starting demolition.

3.2 REMOVAL OPERATIONS

.1 Remove items as defined in 1.2.

3.3 PROTECTIVE EQUIPMENT/PROCEDURES

.1 For asbestos abatement, refer to Section 02 82 00.02.

.2 For lead paint removal operations, protective equipment and clothing to be worn by workers and visitors in work area, including:

.1 Respirator - NIOSH approved and equipped with replacable P100 HEPA filter cartridges, acceptable to NL Labour Relations and NL OSHA. Respirator must be suitable for the type and level of lead dust and mould spore exposure in the work area. Provide sufficient filters so workers can install new filters following disposal of used filters and before re-entering contaminated areas. Workers must not have facial hair that affects the seal between the respirator and face.

.2 Gloves and eye protection.

.3 Disposable protective clothing that does not readily retain or permit skin contamination, consisting of full body covering including head covering with snug fitting cuffs at wrists, ankles, and neck.

.4 Remove gross contamination from clothing before leaving work area. Place contaminated work suits in receptacles for disposal with other lead/mould contaminated materials. Upon completion of lead/mould abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area.

.5 Eating, drinking, chewing and smoking must not be permitted in the work area. Workers must wash hands and face when leaving the work area.

.6 Workers must be trained in hazards of lead/mercury and mould exposure, personal hygiene, work procedures and the proper use of respirators. Provide proof to Departmental Representative prior to work.

3.3 PROTECTIVE EQUIPMENT/PROCEDURES (Cont'd)

.3 Use procedures and equipment required to limit occupational and environmental exposure to lead when lead-containing paint is removed. Minimum mitigation procedures are defined in the document "Guideline for Lead on Construction Projects, 2011", published by Ontario's Ministry of Labour's Occupational Health and Safety Branch. Note that the Department Representative reserves the right to enforce the use of full enclosures during disturbance of any lead paint, in the event the Contractor's methods for removing the paint involve abrasive blasting or the use of power tools without an effective dust collection system. Minimum requirements for full enclosures related to lead paint remediation are defined in the document "Guideline for Lead on Construction Projects, 2011", published by Ontario's Ministry of Labour's Occupational Health and Safety Branch.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

.1 This Section includes requirements for the following:
.1 Demolition and removal of existing building.
.2 Demolition and removal of concrete foundations.
.3 Disconnecting, capping or sealing, and removing site utilities.

.2 This section does not include for the removal of Hazardous Substances, asbestos abatement, and selective demolition of interior building components and finishes.

.3 Drawings contain details that suggest directions for solving some of the major demolition and removal requirements for this project; contractor representative is required to develop these details further by submitting a demolition plan prepared by a professional engineer.

1.2 RELATED SECTIONS

.1 Section 01 35 43 - Environmental Procedures.

.2 Section 01 74 19 - Waste Management and Disposal.

.3 Section 02 41 13 - Selective Site Demolition.

.4 Section 02 82 00.02 - Asbestos Abatement - Intermediate Precautions.

1.3 REFERENCE STANDARDS

.1 CSA Group (CSA)
.1 CSA S350-[M1980(R2003)], Code of Practice for Safety in Demolition of Structures.

.2 Department of Justice Canada (Jus)
.1 Canadian Environmental Assessment Act (CEAA), 2012.
.2 Canadian Environmental Protection Act (CEPA), 2012.
.1 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34.
.2 Motor Vehicle Safety Act (MVSA), 1995
.3 Hazardous Substances Information Review Act, 1985

.3 National Fire Protection Association (NFPA)

1.3 REFERENCE STANDARDS (Cont'd)

.3 (Cont'd)
.1 NFPA 241-13, Standard for Safeguarding Construction, Alteration, and Demolition Operations

.4 National Research Council Canada (NRC)
.1 National Building Code of Canada [2015] (NBC).

1.4 DEFINITIONS

.1 Demolition: rapid destruction of building following removal of Hazardous Substances.

.2 Hazardous Substances: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, or other material that can endanger human health or wellbeing or environment if handled improperly as defined by the Federal Hazardous Products Act (RSC 1985) including latest amendments.

.3 Waste Management Co-ordinator (WMC): contractor representative responsible for supervising waste management activities as well as co-ordinating related, required submittal and reporting requirements.

.4 Draft Construction Waste Management Plan (Draft CWM Plan): Detailed inventory of materials in building indicating estimated quantities of reuse, recycling and landfill, prepared in accordance with Section 01 74 19 - Waste Management and Disposal and as follows:
.1 Involves quantifying by volume/weight amounts of materials and wastes generated during construction, demolition, deconstruction, or renovation project

.5 Construction Waste Management Plan (CWM Plan): Written plan addressing opportunities for reduction, reuse, or recycling of materials prepared in accordance with Section 01 74 19 - Construction Waste Management and Disposal.

.6 Construction Waste Management Report (CWM Report): Written report identifying actual materials that formed CWM Plan for reduction, reuse, or recycling of materials prepared in accordance with Section 01 74 19 - Waste Management and Disposal.

1.5 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: Coordinate with Departmental Representative for the material ownership as follows:

.1 Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Departmental Representative's property, demolished materials shall become Contractor's property and shall be removed from Project site.

.2 Pre-Demolition Meetings:

.1 Convene pre-installation meeting 1 week prior to beginning work of this Section, with Contractor's Representative and Departmental Representative in accordance with Section 01 31 19 - Project Meetings to:

.1 Verify project requirements.

.2 Verify existing site conditions adjacent to demolition work.

.3 Co-ordination with other construction subtrades.

.2 Departmental Representative will provide written notification of change to meeting schedule established upon contract award 24 hours prior to scheduled meeting.

.3 Scheduling:

.1 Employ necessary means to meet project time lines without compromising specified minimum rates of material diversion.

.1 In event of unforeseen delay notify Departmental Representative in writing.

1.6 ACTION AND INFORMATIONAL SUBMITTALS

.1 Action Submittals: Provide the following submittals before starting any work of this Section:

.1 Shop Drawings: Submit drawings stamped and signed by professional engineer registered or licensed in Province of Newfoundland and Labrador as follows:

.1 Submit for review and approval demolition drawings, diagrams or details showing sequence of demolition work and supporting structures and underpinning.

.2 Submit in accordance with Section 01 33 00 - Submittal Procedures and Section 01 74 19 - Waste Management Disposal.

.3 WMC is responsible for fulfilment of reporting requirements.

1.6 ACTION AND INFORMATIONAL SUBMITTALS (Cont'd)

.1 (Cont'd)

.4 Demolition Plan: Submit a plan of demolition area indicating extent of temporary facilities and supports, methods of removal and demolition prepared by a professional engineer in accordance with requirements of Authority Having Jurisdiction.

.5 Proposed Dust Control and Noise Control Measures: Submit statement or drawing that indicates the measures proposed for use, proposed locations, and proposed time frame for their operation.

.6 Inventory: Submit a list of items that have been removed and salvaged after demolition is complete.

.1 Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

.2 Pre-demolition Photographs or Videotape: Submit photographs or videotape indicating existing conditions of adjoining construction and site improvements prior to starting Work. Include finish surfaces that may be misconstrued as damage caused by demolition operations.

1.7 SITE CONDITIONS

.1 Environmental protection:

.1 Ensure Work is done in accordance with Section 01 35 43 - Environmental Procedures.

.2 Ensure Work does not adversely affect adjacent watercourses, groundwater and wildlife, or contribute to excess air and noise pollution.

.3 Fires and burning of waste or materials is not permitted on site.

.4 Do not bury rubbish waste materials.

.5 Do not dispose of waste or volatile materials including but not limited to: mineral spirits, oil, petroleum based lubricants, or toxic cleaning solutions into watercourses, storm or sanitary sewers.

.6 Ensure proper disposal procedures are maintained throughout project.

.2 Do not pump water containing suspended materials into watercourses, storm or sanitary sewers, or onto adjacent properties.

.3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with authorities having jurisdiction as directed by Departmental Representative.

1.7 SITE CONDITIONS (Cont'd)

.4 Protect trees, plants and foliage on site and adjacent properties where indicated.

.5 Cover or wet down dry materials and waste to prevent blowing dust and debris. Control dust on all temporary roads.

.6 Conduct structure demolition so that the traffic operations will not be disrupted:

.1 Provide not less than 72 hours' notice to Departmental Representative of activities that will affect operations.

.2 Maintain access to existing walkways, exits, and other adjacent occupied or used facilities:

.1 Do not close or obstruct walkways, exits, or other occupied or used facilities without written permission from Departmental Representative.

1.8 EXISTING CONDITIONS

.1 Existing Conditions: Condition of materials identified as being demolished are based on their observed condition at time of site examination before tendering.

.1 Existing Hazardous Substances: Departmental Representative performed a hazardous building material assessment and is expected that hazardous substances will be encountered in the Work. See Appendix A:

.1 Hazardous substances will be removed by a hazardous abatement specialist engaged by the Contractor before start of the Work.

.2 Existing Hazardous Substances: Owner has performed a hazardous building material assessment and identified materials requiring abatement as follows:

.1 Hazardous substances are as defined in Appendix A.

.2 Hazardous substances will be removed by the Contractor as a part of the Contract before starting Work in accordance with work results described in Related Requirements listed above.

1.9 MEASUREMENT FOR PAYMENT

.1 All cost for items in this section is to be measured in fixed price items including all plant, labour, material required to complete this work as indicated on drawings and specifications.

PART 2 - PRODUCTS

2.1 EQUIPMENT

.1 Equipment and heavy machinery:
.1 On-road vehicles to: CEPA-SOR/2003-2, On-Road Vehicle and Engine Emission Regulations and CEPA-SOR/2006-268, Regulations Amending the On-Road Vehicle and Engine Emission Regulations.
.2 Off-road vehicles to: EPA CFR 86.098-10 and EPA CFR 86.098-11.
.3 Leave machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

2.2 TEMPORARY SUPPORT STRUCTURES

.1 Design temporary support structures required for demolition work and underpinning and other foundation supports necessary for the project using a qualified professional engineer registered or licensed in Province of the Work.

PART 3 - EXECUTION

3.1 EXAMINATION

.1 Survey existing conditions and correlate with requirements indicated to determine extent of structure demolition required.

.2 Inspect site and verify with Departmental Representative objects designated for removal.

.3 Locate and protect utility lines. Preserve in operating condition active utilities traversing site.

.4 When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element.

.5 Verify that Hazardous Substances have been remediated before proceeding with structure demolition operations.

3.2 PREPARATION

.1 Temporary Erosion and Sedimentation Control:

3.2 PREPARATION (Cont'd)

.1 (Cont'd)

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to: requirements of authorities having jurisdiction sediment and erosion control plan, specific to site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent.

.2 Inspect, repair, and maintain erosion and sedimentation control measures during demolition.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal after completion of demolition work.

.2 Protection of in-place conditions:

.1 Work in accordance with Section 01 35 43 - Environmental Procedures.

.2 Prevent movement, settlement or damage of adjacent structures, services, walks, paving, landscaping, adjacent grades, properties.

.1 Provide bracing, shoring as required.

.2 Repair damage caused by demolition as directed by Departmental Representative.

.3 Surface Preparation:

.1 Disconnect electrical and service lines entering buildings to be demolished.

.1 Post warning signs on electrical lines and equipment which must remain energized to serve other properties during period of demolition.

.2 Disconnect and cap mechanical services.

.1 Sewer and water lines: remove to property line in accordance with authority having jurisdiction as directed by Departmental Representative.

3.3 DEMOLITION

.1 Protect demolition work in accordance with Section 01 56 00 - Temporary Barriers and Enclosures.

.2 Sawcut, removal and disposal of existing asphalt pavement. Limits are shown on accompanying drawings.

.3 Demolition, removal and disposal of a 32.8 m x 12.3 m single story wood structure building with reinforced concrete floor slab and reinforced concrete foundation wall as outlined on accompanying drawings.

3.3 DEMOLITION (Cont'd)

.4 Blasting operations not permitted during demolition.

.5 Remove contaminated and hazardous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal.

.6 Prior to start of Work remove contaminated or hazardous materials listed as hazardous as defined by authorities having jurisdiction as directed by Departmental Representative from site and dispose of at designated disposal facilities in safe manner and in accordance with TDGA and other applicable requirements and Section 02 81 01 - Hazardous Materials. Refer Existing Conditions.

.7 Demolish reinforced foundation walls to minimum of 1.5 m below finished grade. Elevation +0.800.

.8 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.

.9 At end of each day's work, leave Work in safe and stable condition.

.10 Demolish to minimize dusting. Keep materials wetted as directed by Departmental Representative.

.11 Remove structural framing.

.12 Contain fibrous materials to minimize release of airborne fibres while being transported within facility.

.13 Remove and dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.

3.4 DISPOSAL OF MATERIAL

.1 All demolished materials will become property of contractor and will be removed from site and disposed of to satisfaction of Departmental Representative and in accordance with environmental guidelines. It is the sole responsibility of the contractor to dispose of all demolished materials at an approved disposal site. Ensure that disposal site is approved and willing to accommodate any materials disposed of from work site. Refer to Section 01 35 43 - Environmental Procedures and Section 01 74 19 - Waste Management and Disposal for disposal requirements.

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

3.5 SITE RESTORATION

.1 Below Grade Areas: Rough grade below grade areas ready for further excavation or new construction.

.2 Below Grade Areas: Completely fill below grade areas and voids resulting from structure demolition operations with satisfactory soil materials according to backfill requirements.

.3 Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes.

.4 Provide a smooth transition between adjacent existing grades and new grades.

3.6 REPAIRS

.1 General: Promptly repair damage to adjacent construction caused by structure demolition operations.

.2 Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

.3 Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

3.7 CLEANING

.1 Develop Construction Waste Management Plan, Waste Reduction Workplan related to Work of this Section and in accordance with Section 01 74 19 - Waste Management and Disposal.

.2 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

.3 Designate appropriate security resources / measures to prevent vandalism, damage and theft.

.4 Separate from general waste stream each of following materials. Stockpile materials in neat and orderly fashion in location and as directed by Departmental Representative for alternate disposal.

.5 Supply separate, clearly marked disposal bins for categories of waste material. Do not remove bins from site until inspected and approved by Departmental Representative. Please notify Departmental Representative prior to removal of bins from site.

.6 Remove stockpiled material as directed by Departmental Representative, when it interferes with operations of project construction.

.7 Remove stockpiles of like materials by alternate disposal option once collection of materials is complete.

.8 Transport material designated for alternate disposal using approved haulers listed in Waste Reduction Workplan and in accordance with applicable regulations.
.1 Written authorization from Departmental Representative is required to deviate from haulers listed in Waste Reduction Workplan.

.9 Dispose of materials not designated for alternate disposal in accordance with applicable regulations.
.1 Disposal facilities must be those approved of and listed in Waste Reduction Workplan.
.2 Written authorization from Departmental Representative is required to deviate from disposal facilities listed in Waste Reduction Workplan.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED WORK

.1 Comply with Asbestos Abatement Regulations, Latest Edition.

1.2 SECTION INCLUDES

.1 Removal of all spray or trowel-applied asbestos-containing material.

.2 Removal of friable and non-friable materials containing asbestos.

.3 Use of power tools that are fitted with dust collectors equipped with a HEPA filter to cut, shape, grind, drill, scrape, or abrade manufactured products containing asbestos.

1.3 REFERENCES

.1 Code and standards referenced in this section refer to the latest edition thereof.

.2 Canadian General Standards Board (CGSB)
.1 CAN/CGSB-1.205, Sealer for Application to Asbestos-Fibre-Releasing Materials.

1.4 DEFINITIONS

.1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with a filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.

.2 Amended Water: Water with a non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.

.3 Asbestos-Containing Materials (ACMs): Materials identified under Existing Conditions (Article 1.7), including fallen materials and settled dust.

.4 Asbestos Work Area: Area where actual removal, sealing and enclosure of spray or trowel-applied asbestos-containing materials takes place.

.5 Authorized Visitors: Building Onwer, Asbestos Abatement Consultant or designated representative, and persons representing regulatory agencies.

1.4 DEFINITIONS (Cont'd)

.6 Friable Material: Material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.

.7 Occupied Area: Any area of the building or work site that is outside the Asbestos Work Area.

.8 Polyethylene sheeting sealed with tape: Polyethylene sheeting of type and thickness specified sealed with tape along all edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide a continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through the sheeting into a clean area.

.9 Glove Bag: Prefabricated glove bag as follows:
.1 Minimum thickness 0.25 mm (10 mil) polyvinyl-chloride bag.
.2 Integral 0.25 mm (10 mil) thick polyvinyl-chloride gloves and elastic ports.
.3 Equipped with reversible double-pull double throw zipper on top.
.4 Straps for sealing ends around pipe.
.5 Must incorporate internal closure strip if it is to be moved or used in more than one specific location.

.10 DOP Test: A testing method used to determine the integrity of the Negative Pressure unit using dioctyl phthalate (DOP) HEPA-filter leak test.

.11 Sprayer: Garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must have appropriate capacity for scope of work.

.12 Negative pressure: A system that extracts air directly from work area, filters such extracted air through a High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building. This system shall maintain a minimum pressure differential of 5 Pa relative to adjacent areas outside of work areas, be equipped with an alarm to warn of system breakdown, and be equipped with an instrument to continuously monitor and automatically record pressure differences.

1.4 DEFINITIONS (Cont'd)

.13 Airlock: A system for permitting ingress or egress without permitting air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways at least 2 m apart.

.14 Curtained doorway: An arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows: Place two overlapping sheets of polyethylene over an existing or temporarily framed doorway, secure each along the top of the doorway, secured the vertical edge of one sheet along one vertical side of the doorway, and secure the vertical edge of the other sheet along the opposite vertical side of the doorway. Reinforce free edges of polyethylene with duct tape and weight the bottom edge to ensure proper closing. Each polyethylene sheet shall overlap openings not less than 1.5 m on each side.

.15 Competent person: in relation to specific work, means a worker who:
.1 Is qualified because of knowledge, training and experience to perform the work.
.2 Is familiar with the provincial and federal laws and with the provision of the regulations that apply to the work.
.3 Has knowledge of all potential or actual danger to health or safety in the work.

.16 Non-Friable Material: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.

1.5 SUBMITTALS

.1 Before commencing work:
.1 Obtain from the appropriate agency and submit to Owner's Representative all necessary permits for transportation and disposal of asbestos waste. Ensure that dump operator is fully aware of hazardous nature of material being dumped, and proper methods of disposal. Submit proof satisfactory to Owner's Representative that suitable arrangements have been made to receive and properly dispose of asbestos waste.

1.5 SUBMITTALS (Cont'd)

.1 (Cont'd)

.2 Submit proof satisfactory to Owner's Representative that all employees have had instruction on the hazards of asbestos exposure, respirator use, dress, use of showers, entry and exit from work areas, and all aspects of work procedures and protective measures. Supervisory personnel shall have attended an asbestos abatement course, of not less than two days duration, approved by the Owner's Representative. Submit proof of attendance in the form of a certificate. Minimum of one Supervisor for every five workers.

.3 Submit layout of proposed enclosures and decontamination facilities to Owner's Representative for review.

.4 Submit documentation including test results for sealer proposed for use.

.5 Submit Provincial and/or local requirements for Notice of Project Form.

.6 Submit proof of Contractor's Asbestos Liability Insurance.

.7 Submit proof satisfactory to the Owner's Representative that all employees have respirator fitting and testing. Workers must be fit-tested with the respirator that is personally issued.

.8 Submit Workplace Health, Safety and Compensation Commission status and transcription of insurance.

.9 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets for chemicals or materials including but not limited to the following:

.1 encapsulants;

.2 amended water;

.3 slow-drying sealer.

1.6 REGULATORY REQUIREMENTS

.1 Comply with Federal, Provincial, and local requirements pertaining to asbestos, provided that in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at the time work is performed.

.2 Follow Newfoundland Regulation of the Occupational Health and Safety Act, Asbestos Abatement Regulations, Latest Edition. All work as defined under this section must be completed by a "Qualified Asbestos Abatement Contractor" (registered with the Government of Newfoundland and Labrador).

1.6 REGULATORY REQUIREMENTS (Cont'd)

.3 Follow regulations for the transport of asbestos waste, specifically the Transportation of Dangerous Goods Act, latest edition.

.4 Follow regulations for the disposal of asbestos waste, specifically Waste Management Regulations and Waste Material Disposal Areas Regulations.

1.7 EXISTING CONDITIONS

.1 Information contained in the hazmat report is for general information only and is not necessarily representative of all asbestos containing materials covered within the scope of this project.

.2 Materials believed to contain asbestos encountered during the execution of work, not contained in the hazmat report, is to be removed by the Contractor at no additional contract cost. This includes materials concealed behind walls or other inaccessible areas noted in the hazmat report. For the purposes of this contract, asbestos has been confirmed or is suspected to be present as follows:

.1 In the rigid ceiling insulation (with black backing), in the former processing area. Refer to the hazmat report for documented concentrations of chrysotile asbestos in the insulation.

.2 In the roofing shingles, underlying building paper and mastic material at roofing penetrations. Refer to the hazmat report for documented concentrations of chrysotile asbestos in the shingles.

.3 All transite board material encountered in all cold storage areas is to be assumed as containing asbestos.

.4 In the board material/siding underlying the exterior metal siding. The Contractor is to remove the exterior metal siding to expose the underlying board siding. The board siding is to be removed and disposed of as asbestos waste, in accordance with this section.

.5 Any fire rated doors, piping insulation (concealed behind walls or in underground systems)or cement compound at pipe joins is to be assumed as containing asbestos.

1.8 INSTRUCTION AND TRAINING

.1 Before commencing work, provide to the Owner's Representative satisfactory proof that every worker has had instruction and training in hazards of asbestos exposure, in personal hygiene including dress and showers, in entry and exit from the Asbestos Work Area, in all aspects of work procedures including glove bag procedures, and in the use, cleaning, and disposal of respirators and protective clothing.

.2 Instruction and training related to respirators includes, at a minimum:
.1 Proper fitting of the equipment.
.2 Inspection and maintenance of equipment.
.3 Disinfecting of the equipment.
.4 Limitations of the equipment.

.3 Instruction and training must be provided by competent, qualified person.

.4 Supervisory personnel to complete required training.

1.9 WORKER PROTECTION

.1 Protective equipment and clothing to be worn by workers while in the Asbestos Work Area includes:
.1 Respirator equipment with HEPA filter cartridges, personally issued to the worker and marked as to efficiency and purpose, and acceptable to the Provincial Authority having jurisdiction as suitable for the type of asbestos and the level of asbestos exposure in the Asbestos Work Area. If disposable type filters are used, provide sufficient filters so that workers can install new filters following disposal of used filters and before re-entering contaminated areas.
.2 Disposable-type protective clothing that does not readily retain or permit penetration of asbestos fibres, consisting of full-body covering including head covering with snug-fitting cuffs at wrists, ankles, and neck.

.2 Each worker shall:
.1 Remove street clothes in clean change room and put on respirator with new filters of reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or Asbestos Work Area. All street clothes, uncontaminated footwear, towels, and similar uncontaminated articles shall be stored in clean change room.

1.9 WORKER PROTECTION (Cont'd)

.2 (Cont'd)

.2 Remove gross contamination from clothing before leaving work area then proceed to Equipment and Access Room. Place contaminated worksuits in receptables for disposal with other asbestos - contaminated materials Clean outside of respirator with soap and water. Remove respirator; remove filters and wet them and dispose of filters in the container provided for the purpose; and wash and rinse the inside of the respirator. When not in use in the work area, store work footwear in Equipment and Access Room. Upon completion of asbestos abatement, dispose of footwear as contaminated waste or clean thoroughly inside and out using soap and water before removing from work area or from Equipment and Access Room.

.3 Provide facilities for washing and/or showering when leaving Asbestos Work Area, which shall be used by every worker. Hot and cold water supply is to be provided in such a manner to allow workers to adjust water temperature during decontamination.

.4 Enter the unloading room from outside dressed in clean coveralls to remove waste containers and equipment from the Holding Room of the Container and Equipment Decontamination Enclosure system. No worker shall use this system as a means to leave or enter the work area.

.3 Workers shall not eat, drink, smoke or chew gum or tobacco at the work site except in established clean room.

.4 Workers shall be fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual asbestos abatement.

.5 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in 1.9 of this section.

.6 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects the seal between the respirator and the face.

1.10 VISITOR PROTECTION

.1 Provide protective clothing and approved respirators to Authorized Visitors to work areas.

.2 Instruct Authorized Visitors in the use of protective clothing and respirators.

1.10 VISITOR PROTECTION (Cont'd)

.3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from work areas.

1.11 NOTIFICATION

.1 Not later than ten (10) working days before commencing work on this project notify the Occupational Health and Safety Division in writing as per Regulation 194/91, Section 34 Sub-Section (7). Provide telephone notification immediately prior to start of work.

.2 Notify Sanitary Landfill site.

.3 Inform all sub-trades of the presence of friable asbestos-containing materials identified in the Existing Conditions.

.4 Submit to the Owner's Representative a copy of all notifications prior to the start of work.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 All materials and equipment brought to work site must be in good condition and fee of asbestos, asbestos debris, and fibrous materials. Disposable items must be of new materials only.

.2 Polyethylene: Minimum 0.15 mm thick unless othewise specified; in sheet size to minimize joints.

.3 Tape: Fibreglass reinforced duct tape suitable for sealing polyethylene under both dry conditions and wet conditions using amended water.

.4 Wetting Agent: 50% polyoxyethylene ester and 50% polyoxyethylene ether, or other material approved by Owner's Representative, mixed with water in concentration to provide adequate penetration and wetting of asbestos-containing material.

.5 Asbestos waste containers: Metal or fibre - type acceptable to dump operator with tightly fitting covers and 0.15 mm minimum thickness sealable polyethylene liners. Labelling requirements: Affixa pre-printed cautionary asbestos warning, that is clearly visible when ready for removal to disposal site.

2.1 MATERIALS (Cont'd)

.6 Encapsulants: Type 2 surface film forming type Class A water based conforming to CAN/CGSB-1.205, ULC listed.

.7 Glove bag: Acceptable materials include safe-T-Strip products in configuration suitable for Work, or alternative material approved by addendum during tendering period in accordance with Instructions to Tenderers. Glove bags intended for use in more than one location must be equipped with a reversible, double-pull, double-throw zipper on the top and at approximately the mid-section of the bag.

.8 Slow drying sealer: non-staining, clear, water - dispersible type that remains tacky on surface for at least 8 hours and designed for purpose of trapping residual asbestos fibres. Sealer shall have flame spread and smoke developed rating less than 50.

PART 3 - EXECUTION

3.1 PREPARATION

.1 Work Area:

.1 Clean proposed work area using, where practicable, HEPA vacuum cleaning equipment. If not practicable, use a wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum equipment.

.2 If required by Provinical OHS, put negative pressure system in operation and operate continuously from the time the first polyethylene is installed to seal openings until final completion of the work including final cleanup. Provide continuous monitoring of pressure difference using an automatic recording instrument. The negative pressure system may be waived if deemed not necessary by Provincial OHS.

.3 Seal off all openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.

.4 Cover floor and wall surfaces with polyethylene sheeting sealed with tape. Cover floors first so that polyethylene extends at least 300 mm up wallsthen cover walls to overlap floor sheeting.

3.1 PREPARATION (Cont'd)

.1 (Cont'd)

.5 Build airlocks at all entrances to and exits from work area so that work area is always closed off by one curtained doorway when workers enter or exit.

.6 At each access to work areas install warning signs cautioning of asbestos.

.7 Remove ceiling - mounted objects such as lights, partitions, other fixtures not previously sealed off, and other objects that interfere with asbestos removal, as directed by Owner's Representative. Use localized water spraying during fixture removal to reduce fibre dispersal.

.8 Maintain emergency and fire exits from work area, or establish alternative exits satisfactory to Provincial Fire Commissioner.

.9 Where application of water is required for wetting asbestos-containing materials, ensure electrical power is shut down to building.

.2 Worker Decontamination Enclosure System:

.1 Worker Decontamination Enclosure System shall be comprised of an Equipment and Access Room, a Wash Area Room, and a Clean Room, as follows:

.1 Equipment and Access Room: Build an Equipment and Access Room between Wash Area Room and work area, with two curtained doorways, one to the Wash Area Room and one to the work area. Install portable toilet, waste receptor, and storage facilities for workers' shoes and any protective clothing tobe reworn in work area. The Equipment and Acess Room shall be large enough to accommodate specified facilities, any other equipment needed, and at least one worker allowing him/her sufficient space to undress comfortably.

.2 Wash Area Room: Build a Wash Area Room between the Clean Room and Equipment and Access Room, with two curtained doorways, oneto the Clean Room and one to Equipment and Access Room. Provide a constant supply of hot and cold or warm water. Provide piping and connect to water sources and drains. Pump waste water through a 5 micrometre filter system acceptable to Owner's Representative before directing into drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.

3.1 PREPARATION (Cont'd)

.2 (Cont'd)

.1 (Cont'd)

.3 Clean Room: Build a Clean Room between the Wash Area Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Wash Area Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install a mirror to permit workers to fit respiratory equipment properly.

.3 Container and Equipment Decontamination Enclosure System

.1 Container and Equipment Decontamination Enclosure System consists of a Staging Area within the work area, a Holding Room, and an Unloading Room. The purpose of this system is to provide a means to decontaminate waste containers, scaffolding, waste and material containers, vacuum and spray equipment, and other tools and equipment for which the Worker Decontamination Enclosure System is not suitable.

.1 Staging Area: Designate a Staging Area in the work area for gross removal of dust and debris from waste containers and equipment, labelling and sealing of waste containers, and temporary storage pending removal to Washroom. Staging Area shall have a curtained doorway to the Washroom.

.2 Holding Room: shall be of sufficient size to accommodate at least two waste containers and the largest item of equipment used.

.3 Unloading Room: Build an Unloading Room between the Holding Room and outside, with two curtained doorways, one to the Holding Room and one to outside.

.4 Construction of Decontamination Enclosures:

.1 Build suitable framing for enclosures or use existing rooms where convenient, and line with polyethylene sheeting sealed with tape.

.2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through a doorway, one of the two closures comprising the doorway always remains closed.

.5 Maintenance of Enclosures:

.1 Maintain enclosures in tidy condition.

3.1 PREPARATION (Cont'd)

.5 (Cont'd)

.2 Ensure that barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

.3 Visually inspect enclosures at the beginning of each working period.

.4 Use smoke methods to test effectiveness of barriers when directed by Owner's Representative.

.6 Asbestos Abatement work shall not commence until:

.1 Arrangements have been made for disposal of waste.

.2 For wet stripping techniques, arrangements have been made for containing, filtering, and disposal of waste water.

.3 Tools, equipment, and materials waste containers are on hand.

.4 Arrangements have been made for building security.

.5 Warning signs are displayed where access to contaminated areas is possible.

.6 All notifications have been completed and other preparatory steps have been taken.

3.2 SUPERVISION

.1 A minimum of one Supervisor for every five workers is required. Refer to Asbestos Abatement Regulations for definition and training of supervisor.

.2 An approved Supervisor must remain within the Asbestos Work Area at all times during the disturbance, removal, or other handling of asbestos-containing materials.

3.3 ASBESTOS REMOVAL

.1 Before removing asbestos:

.1 Prepare site.

.2 Spray asbestos material with water containing the specified wetting agent, using airless spray equipment capable of providing a "mist" application to prevent release of fibres. Saturate the asbestos material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.

3.3 ASBESTOS REMOVAL (Cont'd)

.2 Remove the saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed pack the material in sealable plastic bags 0.15 mm minimum thick and place in labelled containers for transport.

.3 Seal filled containers. Clean external surfaces thoroughly by wet sponging. Remove from immediate working area to Staging Area. Clean external surfaces thoroughly again by wet sponging before moving containers to decontamination Washroom. Wash containers thoroughly in decontamination Washroom, and store in Holding Room pending removal to Unloading Room and outside. Ensure that containers are removed from the Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.

3.4 PIPE INSULATION REMOVAL USING GLOVE BAG

.1 Place tools necessary to remove insulation in tool pouch. Wrap the bag around pipe and close zippers. Seal bag to pipe with cloth straps.

.2 Place hands in gloves and use necessary tools to remove insulation. Arrange insulation in bag to obtain full capacity of bag.

.3 Insert nozzle of a garden reservoir type sprayer into bag through valve and wash down pipe and interior of bag thoroughly. Wet surface of insulation in lower section of bag.

.4 When glove bags are intended for use at more than one location: After wash-down and application of sealer, seal off waste in lower section of bag using zipper at mid-section of bag. Remove air from top section of bag through the elasticized valve using a HEPA vacuum. Remove bag from pipe, reinstall in new location, and reseal to pipe prior to opening the lower section of the bag. Repeat stripping operation.

.5 If bag is to be moved along pipe, first remove air from top section through the elasticized valve using a HEPA vacuum. Next loosen straps, move bag, re-seal to pipe using double-pull zipper to pass hangers. Repeat stripping operation.

3.4 PIPE INSULATION REMOVAL USING GLOVE BAG (Cont'd)

.6 To remove bag after completion of stripping, wash top section and tools thoroughly. Remove air from top section through the elasticized valve using a HEPA vacuum. Pull polyethylene waste container over glove bag before removing from pipe. Release one strap and remove freshly washed tools. Place tools in water. Remove second strap and zipper. Fold over into waste container and seal.

.7 After removal of bag ensure that pipe is free of all residue. Remove all residue using HEPA vacuum or wet cloths. Ensure that surfaces are free of sludge which after drying could release asbestos dust into atmosphere. Seal exposed surfaces of pipe and ends of insulation with slow-drying sealer to seal in any residual fibres.

.8 Upon completion of work shift, cover exposed ends of remaining pipe insulation with polyethylene taped in place.

3.5 FINAL CLEANUP

.1 Remove polythylene sheet by rolling it away from walls to centre of work area. Vacuum all visible asbestos-containing particles observed during cleanup, immediately, using HEPA vacuum equipment.

.2 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.

.3 Work areas, Equipment and Access Room, Wash Area Room, and other enclosures that may be contaminated shall be included in the clean-up.

.4 Sealed waste containers and all equipment used in the work shall be included in the cleanup and shall be removed from work areas, via the Container and Equipment Decontamination Enclosure System, at any appropriate time in the cleaning sequence.

3.6 AIR MONITORING

.1 If required by the Regulators, air samples will be taken on a daily basis both inside and outside of work area enclosure in accordance with Asbestos Abatement Regulations (personal, perimeter and clearance) and conforming to applicable NIOSH sampling protocol. (ie. NIOSH 7400)

3.7 INSPECTION

.1 Deviation from the Asbestos Abatement Regulations is not accepted without prior approval of the governing authority. Any deviation from these requirements that have not been approved in writing by the Owner's Representative and the governing authority may result in a stoppage of work, at no cost to the Owner.

.2 The Owner's Representative is empowered to inspect adherence to specific procedures and materials, and to inspect for final cleanliness and completion. Additional labour or materials expended by the Contractor to provide performance to the level specified shall be at no additional cost.

.3 The Owner's Representative is empowered to order a shutdown of work when a leakage of asbestos from the Asbestos Work Area has occurred or is likely to occur. Additional labour or materials expended by the Contractor to provide performance to the level specified shall be at no additional cost.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

.1 This section defines correction to maximum dry density to take into account aggrgate particles larger than 19 mm.

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)
.1 ASTM C127-12 (2001), Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.
.2 ASTM D698-12a, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft^3 (600 kN-m/m^3)).
.3 ASTM D1557-12, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)).
.4 ASTM D4253-00 (2006), Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.

1.3 DEFINITIONS

.1 Corrected maximum dry density is defined as:
.1 D = (D1xD2) / ((F1 x D2) + (F2 x D1))
.2 D = (F1 x D1) + (0.9 x D2 x F2)
.3 Where: D = corrected maximum dry density kg/m^3.
.1 F1 = fraction (decimal) of total field sample passing 19 mm sieve
.2 F2 = fraction (decimal) of total field sample retained on 19 mm sieve (equal to 1.00 - F1)
.3 D1 = maximum dry density, kg/m^3 of material passing 19 mm sieve determined in accordance with Method A of ASTM D698.
.4 D2 = bulk density, kg/m^3, of material retained on 19 mm sieve, equal to 1000G where G is bulk specific gravity (dry basis) of material when tested to ASTM C127.
.4 For free draining aggregates, determine D1 (maximum dry density) to ASTM D4253 dry method when directed by Departmental Representative.

1.4 MEASUREMENT FOR PAYMENT

.1 All work covered under this specification is considered to be incidental to the project and will not be measured for payment under the fixed price items.

PART 2 - PRODUCTS

2.1 NOT USED .1 Not Used.

PART 3 - EXECUTION

3.1 NOT USED .1 Not Used.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 33 00 - Submittal Procedures.

.2 Section 01 74 19 - Waste Management and Disposal.

1.2 REFERENCES

.1 American Society for Testing and Materials (ASTM)
.1 ASTM D4791-10, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.

1.3 SAMPLES

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

.2 Allow continual sampling by Departmental Representative during production.

.3 Provide Departmental Representative with access to source and processed material for sampling.

.4 Install sampling facilities at discharge end of production conveyor, to allow Departmental Representative to obtain representative samples of items being produced. Stop conveyor belt when requested by Departmental Representative to permit full cross section sampling.

.5 Pay cost of sampling and testing of aggregates which fail to meet specified requirements.

1.4 WASTE MANAGEMENT AND DISPOSAL

.1 Divert unused granular materials from landfill to local quarry facility as approved by Departmental Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Aggregate quality: sound, hard, durable material free from soft, thin, elongated or laminated particles, organic material, clay lumps or minerals, or other substances that would act in deleterious manner for use intended.

2.1 MATERIALS (Cont'd)

.2 Flat and elongated particles of coarse aggregate: to ASTM D4791.
.1 Greatest dimension to exceed five times least dimension.

.3 Fine aggregates satisfying requirements of applicable section to be one, or blend of following:
.1 Natural sand.
.2 Manufactured sand.
.3 Screenings produced in crushing of quarried rock, boulders, gravel or slag.

.4 Coarse aggregates satisfying requirements of applicable section to be one of or blend of following:
.1 Crushed rock.
.2 Gravel and crushed gravel composed of naturally formed particles of stone.
.3 Light weight aggregate, including slag and expanded shale.

2.2 SOURCE QUALITY CONTROL

.1 Inform Departmental Representative of proposed source of aggregates and provide access for sampling at least 2 weeks prior to commencing production.

.2 If, in opinion of Departmental Representative, materials from proposed source do not meet, or cannot reasonably be processed to meet, specified requirements, locate an alternative source or demonstrate that material from source in question can be processed to meet specified requirements.

.3 Advise Departmental Representative 2 weeks in advance of proposed change of material source.

.4 Acceptance of material at source does not preclude future rejection if it fails to conform to requirements specified, lacks uniformity, or if its field performance is found to be unsatisfactory.

PART 3 - EXECUTION

3.1 PREPARATION

.1 Aggregate source preparation

3.1 PREPARATION (Cont'd)

.1 (Cont'd)

.1 Prior to excavating materials for aggregate production, clear area to be worked, and strip unsuitable surface materials. Dispose of cleared unsuitable materials as directed by Departmental Representative.

.2 Where clearing is required, leave screen of trees between cleared area and roadways as directed.

.3 Clear, grub and strip area ahead of quarrying or excavating operation sufficient to prevent contamination of aggregate by deleterious materials.

.4 When excavation is completed dress sides of excavation to nominal 1.5:1 slope, and provide drains or ditches as required to prevent surface standing water.

.5 Trim off and dress slopes of waste material piles and leave site in neat condition.

.2 Processing

.1 Process aggregate uniformly using methods that prevent contamination, segregation and degradation.

.2 Blend aggregates, if required, to obtain gradation requirements, percentage of crushed particles, or particle shapes, as specified. Use methods and equipment approved by Departmental Representative.

.3 Wash aggregates, if required to meet specifications. Use only equipment approved by Departmental Representative.

.4 When operating in stratified deposits use excavation equipment and methods that produce uniform, homogeneous aggregate.

.3 Handling

.1 Handle and transport aggregates to avoid segregation, contamination and degradation.

.4 Stockpiling

.1 Stockpile aggregates on site in locations as indicated unless directed otherwise by Departmental Representative. Do not stockpile on completed pavement surfaces.

.2 Stockpile aggregates in sufficient quantities to meet Project schedules.

.3 Stockpiling sites to be level, well drained, and of adequate bearing capacity and stability to support stockpiled materials and handling equipment.

.4 Except where stockpiled on acceptably stabilized areas, provide compacted sand base not less than 300 mm in depth to prevent contamination of aggregate. Stockpile aggregates on ground but do not incorporate bottom 300 mm of pile into Work.

3.1 PREPARATION (Cont'd)

.4 (Cont'd)

.5 Separate different aggregates by strong, full depth bulkheads, or stockpile far enough apart to prevent intermixing.

.6 Do not use intermixed or contaminated materials. Remove and dispose of rejected materials as directed by Departmental Representative within 48 hours of rejection.

.7 Stockpile materials in uniform layers of thickness as follows:

.1 Max 1.5 m for coarse aggregate and base course materials.

.2 Max 1.5 m for fine aggregate and sub-base materials.

.3 Max 1.5 m for other materials.

.8 Uniformly spot-dump aggregates delivered to stockpile in trucks and build up stockpile as specified.

.9 Do not cone piles or spill material over edges of piles.

.10 Do not use conveying stackers.

.11 During winter operations, prevent ice and snow from becoming mixed into stockpile or in material being removed from stockpile.

3.2 CLEANING

.1 Leave aggregate stockpile site in tidy, well drained condition, free of standing surface water.

.2 Leave any unused aggregates in neat compact stockpiles as directed by Departmental Representative.

.3 For temporary or permanent abandonment of aggregate source, restore source to condition meeting requirements of authority having jurisdiction.

END OF SECTION

PART 1 - GENERAL

1.1 DESCRIPTION

.1 This section specifies supply, placement and compaction of rockfill as required or as directed by Departmental Representative.

1.2 REFERENCES

.1 ASTM International

.1 ASTM D 698-07e1, Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (600 kN-m/m ^{3}).

.2 Underwriters' Laboratories of Canada (ULC)

1.3 MEASUREMENT FOR PAYMENT

.1 Rock Fill (100 mm minus): Supply, placement, compaction of rock fill will be measured by the cubic metre placed measure (CMPM). Material required for the backfill will be approved prior to supply and placement. The volume of material will be determined in place from measurements taken prior to and at completion of the work. Include the cost of all plant, equipment, and materials required to complete the work as specified.

PART 2 - PRODUCTS

2.1 ROCK FILL

.1 Rock fill (100 mm minus):

.1 Crushed quarry stone consisting of hard durable particles free from clay lumps, frozen material and other deleterious materials, and free from splits, seams or defects likely to impair its soundness during handling or under action of water.

.2 Relative density: to ASTM C127, not less than 2.65.

.3 Rock size to be 85% - 90%, 38 mm to 100 mm and with rock no greater than 150 mm dia.

PART 3 - EXECUTION

3.1 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or are acceptable for rough grading installation.
.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 approval to proceed from Departmental Representative.

3.2 PLACING ROCK FILL

.1 Only rock fill material approved by Departmental Representative will be placed. Material will be placed uniformly across full cross-section in layers not exceeding 300 mm loose depth.

.2 Use suitable earth moving and surface grading equipment to place and spread rock fill in continuous and uniform horizontal layers.

.3 Compact rock fill after each 300 mm lift.

.4 Place rock fill to underside of Type 2 materials.

.5 All side slopes to be one (1) vertical to one and one half (1.5) horizontal.

3.3 GRADING

.1 Rough grade to levels, profiles, and contours allowing for surface treatment as indicated.

.2 Slope rough grade as indicated on drawings.

.3 Compact filled and disturbed areas to corrected maximum dry density to ASTM D 698, as follows:
.1 95% under roadway and parking areas.
.2 95% under concrete slabs.

3.4 TESTING

.1 Inspection and testing of soil compaction will be carried out by testing laboratory designated by ULC. Costs of tests will be paid by Owner Departmental Representative in accordance with Sections 01 29 83 - Payment Procedures for Testing Laboratory Services.

3.5 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

.3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

3.6 PROTECTION

.1 Protect bench marks, buildings, surface or underground utility lines which are to remain as directed by Departmental Representative. If damaged, restore to original or better condition unless directed otherwise.

.2 Maintain access roads to prevent accumulation of construction related debris on roads.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED SECTIONS

.1 Section 01 45 00 - Quality Control.

.2 Section 01 74 19 - Waste Management and Disposal.

.3 Section 31 05 17 - Aggregate Materials.

1.2 MEASUREMENT PROCEDURES

.1 Type 1 Granular Base: will be measured in cubic metres (m^3). Supply, placement and compaction of Type 1 granular base including the cost of all plant, labour, equipment and materials required to complete the work as specified.

.2 Type 2 Granular Sub Base: will be measured in cubic meters (m^3). Supply, placement and compaction of Type 2 granular sub base including the cost of all plant, labour, equipment and materials required to complete the work as specified.

1.3 REFERENCES

.1 American Society for Testing and Materials (ASTM)

.1 ASTM C117-13, Standard Test Method for Material Finer Than 0.075 mm Sieve in Mineral Aggregates by Washing.

.2 ASTM C131-06, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.3 ASTM C117-06, Standard Test Method for Sieve Analysis of Fine and Coarse Aggregate.

.4 ASTM D698, Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400ft-lbf/ft^3) (600kN-m/m^3).

.5 ASTM D1557, Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000ft-lbf/ft^3) (2,700kN-m/m^3).

.6 ASTM D1883, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soil.

.7 ASTM D4318, Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils.

.2 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-8.1-88, Sieves, Testing, Woven Wire, Inch Series.

.2 CAN/CGSB-8.2-M88, Sieves, Testing, Woven Wire, Metric.

1.4 DELIVERY, STORAGE AND HANDLING

.1 Deliver and stockpile aggregates in accordance with Section 31 05 17 - Aggregate Materials. Stockpile minimum 50% of total aggregate required prior to beginning operation.

.2 Divert unused granular material from landfill to local facility as approved by Departmental Representative.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Type 1 Granular Base: Material to the following requirements:

.1 Granulations to be within following limits when tested to ASTM C136-84a and ASTM C117-87. The gradings shall not show marked fluctuations from opposite extremes of the limiting sizes, and giving a smooth curve without sharp breaks when plotted on a semi-log grading chart to ASTM.

ASTM Sieve Designation	% Passing
19.0 mm	100
12.5 mm	70-100
9.5 mm	-
4.75 mm	40-70
2.00 mm	23-50
0.425 mm	7-25
0.180 mm	-
0.075 mm	3-8

.2 Type 2 Granular Sub-Base Material to the following requirements:

.1 Gradation to be within following limits when tested to ASTM C136-82 and ASTM C117-80. The gradings shall not show marked fluctuations from opposite extremes of the limiting sizes, having a smooth curve without sharp breaks when plotted on a semi-log grading chart to ASTM E11-87.

ASTM Sieve Designation	%Passing
50.8 mm	75-100
15.9 mm	45-80
4.76 mm	25-55
1.20 mm	12-35
0.300 mm	7-20
0.075 mm	3-6 (Pit Source) 3-8 (Rock Source)

.2 Other properties as follows:

.1 Liquid Limit ASTM D423-66 (1972) Maximum 25.

.2 Plasticity Index ASTM D424-59 (1971) Maximum 0.

2.1 MATERIALS (Cont'd)

.2 (Cont'd)

.2 (Cont'd)

.3 Los Angeles Abrasion ASTM C131-81 Maximum % Loss by Weight: 35.

.4 Crushed fragments: 50%. The percent of crushed particles will be determined by examining the fraction retained on the 4.76 mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.

.5 CBR: AASHTO T180-74 Method D.

.3 Other properties as follows:

.1 Liquid Limit: to ASTM D4318 (1972) maximum 25.

.2 Plasticity Index: to ASTM D4318-59 (1971) maximum 0.

.3 Los Angeles Abrasion: to ASTM C131-06. Maximum % loss by weight: 35.

.4 Crushed Fragments: 50%. The percent of crused particles will be determined by examining the fraction retained on the 4.76 mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.

.5 CBR:AASSHTO T 193-10 (2010) Min 100 when compacted to 100% of AASSHTO T 180-10 Method D.

PART 3 - EXECUTION

3.1 SEQUENCE OF OPERATIONS

.1 Place granular base after common backfill is inspected and approved by Departmental Representative.

.2 Placing

.1 Construct granular base to depth and grade in areas indicated.

.2 Ensure no frozen material is placed.

.3 Place material only on clean unfrozen surface, free from snow and ice.

.4 Place material to full width in uniform layers not exceeding 150mm compacted thickness. Department Representative may authorize thicker lifts (layers) if specified compaction can be achieved.

.5 Shape to smooth contour and compact to specified density before succeeding layer is placed.

.6 Remove and replace that portion of layer in which material becomes segregated during spreading.

.3 Compaction Equipment

.1 Compaction equipment to be capable of obtaining required material densities.

3.1 SEQUENCE OF OPERATIONS (Cont'd)

.4 Compacting

.1 Compact to density not less than 100% corrected maximum dry density ASTM D698.

.2 Shape and roll alternately to obtain smooth, even and uniformly compacted base.

.3 Apply water as necessary during compacting to obtain specified density.

.4 In areas not accessible to rolling equipment, compact to specified density with mechanical tampers approved by Department Representative.

3.2 SITE TOLERANCES

.1 Finished base surface to be within plus or minus 10 mm of established grade and cross section but not uniformly high or low.

3.3 PROTECTION

.1 Maintain finished base in condition conforming to this Section until succeeding material is applied or until acceptance by Departmental Representative.

END OF SECTION

PART 1 - GENERAL

1.1 SUMMARY

.1 This method covers measurement of loss of Marshall Stability resulting from action of water on compacted asphalt paving mixtures containing penetration grade asphalt cement.

.2 Numerical index of retained stability is obtained by comparing stability of specimens determined in accordance with usual Marshall procedures with stability of specimens that have been immersed in water for prescribed period.

1.2 RELATED SECTIONS

.1 Section 32 12 16 - Asphalt Paving.

1.3 REFERENCES

.1 American Association of State Highway and Transportation Officials (AASTHO)

.1 AASHTO T245-97 (2001), Resistance to Plastic flow of Bituminous Mixtures Using Marshall Apparatus.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Representative samples of each asphalt paving mixture proposed for use on Project.

2.2 EQUIPMENT

.1 One or more water baths with automatic controls for immersing specimens. Baths normally used for Marshall test are suitable for test.

.2 Scale and water bath with suitable accessory equipment for weighing test specimens in air and in water to determine their densities.

.3 Flat transfer plates of glass or metal. Keep one plate under each specimen during immersion period and during subsequent handling, except when weighing and testing, to prevent breakage or distortion of specimens.

.4 Apparatus required to conduct Marshall test.

PART 3 - EXECUTION

3.1 PREPARATION OF TEST SPECIMENS

.1 Prepare at least 8 specimens for each test with hand-operated hammer, in accordance with AASHTO T245, except where specified otherwise.

3.2 TEST PROCEDURES

.1 Do Marshall testing in accordance with AASHTO T245, except where specified otherwise.

.2 Weigh each specimen in air and in water. Weigh in water as rapidly as possible to minimize absorption.

.3 Calculate specific gravity of each specimen as follows:

.1 Specific Gravity = A / (A-B)

.2 Where A = weight of specimen in air in grams

.3 B = weight of specimen in water in grams

.4 Sort each set of 8 specimens into 2 groups of 4 specimens each so that average specific gravity of specimens in group 1 is essentially same as that of group 2.

.5 Test group 1 specimens for Marshall stability. Calculate S1 = Marshall stability of group 1 (average).

.6 Immerse group 2 specimens in water for 24h at 60°C, then test immediately for Marshall stability. Calculate S2 = Marshall stability of group 2 (average).

3.3 Test Report

.1 Report test results to Departmental Representative.

.2 Report numerical index of retained stability as resistance of asphaltic paving mixtures to detrimental effect of water, expressed as percentage of original stability retained after immersion period.

.3 Calculate index as follows:

.1 Index of Retained Stability = S2 / S1 x 100

END OF SECTION

PART 1 - GENERAL

1.1 SECTION INCLUDES

.1 Materials and installation for asphalt paving.

1.2 RELATED SECTIONS

.1 Section 01 29 83 - Payment Procedures for Testing Laboratory Services.

.2 Section 01 33 00 - Submittal Procedures.

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

.4 Section 31 05 17 - Aggregate Materials.

.5 Section 32 12 10 - Marshall Immersion Test for Bitumen.

.6 Section 32 11 23 - Aggregate Base Courses.

1.3 REFERENCES

.1 American Association of State Highway and Transportation Officials (AASHTO)
.1 AASHTO M320-02, Standard Specification for Performance Graded Asphalt Binder.
.2 AASHTO R29-02, Standard Specification for Grading or Verifying the Performance Graded of an Asphalt Binder.
.3 AASHTO T245-97(2001), Resistance to Plastic flow of Bituminous Mixtures Using Marshall Apparatus.

.2 Asphalt Institute (AI)
.1 AI MS2-1994 Sixth Edition, Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types.

.3 American Society for Testing and Materials International, (ASTM)
.1 ASTM C88-05, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate.
.2 ASTM C117-04, Standard Test Method for Material Finer Than 0.075mm (No.200) Sieve in Mineral Aggregates by Washing.
.3 ASTM C123-04, Standard Test Method for Lightweight Particles in Aggregate.
.4 ASTM C127-07, Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.

1.3 REFERENCES (Cont'd)

.3 (Cont'd)

.5 ASTM C128-07a, Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate.

.6 ASTM C131-06, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

.7 ASTM C136-06, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.

.8 ASTM C207-06, Standard Specification for Hydrated Lime for Masonry Purposes.

.9 ASTM D995-95b(2002), Standard Specification for Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.

.10 ASTM D2419-02, Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.

.11 ASTM D3203-05, Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures.

.12 ASTM D4791-05e1, Standard Test Method for Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate.

.4 Canadian General Standards Board (CGSB)

.1 CAN/CGSB-8.1-M88, Sieves Testing, Woven Wire, Metric.

.2 CAN/CGSB-16.3-M90, Asphalt Cements for Road Purposes.

1.4 PRODUCT DATA

.1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Submit viscosity-temperature chart for asphalt cement to be supplied showing either Saybolt Furol viscosity in seconds or Kinematic Viscosity in centistokes, temperature range 105 to 175 degrees C at least 2 weeks prior to beginning Work.

.3 Submit manufacturer's test data and certification that asphalt cement meets requirements of this Section.

.4 Submit asphalt concrete mix design and trial mix test results to Departmental Representative for review at least 2 weeks prior to beginning Work.

1.5 SAMPLES

.1 Submit samples in accordance with Section 01 33 00 - Submittal Procedures.

1.5 SAMPLES (Cont'd)

.2 Inform Departmental Representative of proposed source of aggregates and provide access for sampling at least 2 weeks prior to beginning Work.

.3 Submit samples of following materials proposed for use at least 2 weeks prior to beginning Work.
.1 One 5 L container of asphalt cement.

.4 If materials have been tested by an independent testing laboratory within previous 6 months and have successfully passed tests equal to requirements of this specification, desregard above instructions and submit test certificates from testing laboratory showing suitability of materials for this project.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver and stockpile aggregates in accordance with Section 31 05 17 - Aggregate Materials. Stockpile minimum 50% of total amount of aggregate required before beginning asphalt mixing operation.

.2 When necessary to blend aggregates from one or more sources to produce required gradation, do not blend in stockpiles.

.3 Stockpile fine aggregate separately from coarse aggregate, although separate stockpiles for more than two mix components are permitted.

.4 Provide approved storage, heating tanks and pumping facilities for asphalt cement.

1.7 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management And Disposal.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene, corrugated cardboard and packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused aggregate materials from landfill to quarry facility for reuse as approved by Departmental Representative.

1.7 WASTE MANAGEMENT AND DISPOSAL (Cont'd)

.5 Divert unused asphalt from landfill to facility capable of recycling materials.

.6 Fold up metal banding, flatten and place in designated area for recycling.

1.8 MEASUREMENT FOR PAYMENT

.1 Asphalt Paving: (65mm) Surface Course will be measured by the square metre (m^2) of compacted surface coarse asphalt installed in the work within the limits indicated on the drawings.

.2 No separate payment will be made for any other ingredient or feature of the work and all factors, including asphalt bituminous tack coat, compaction, cold weather, asphalt, aggregates, saw cutting, and all plant, labour and materials is inclusive in the above price.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Performance graded asphalt cement: to AASHTO M320, grade PG 58 - 28 when tested to AASHTO R29.

.2 Aggregates: in accordance with Section 31 05 17 - Aggregate Materials: General and following requirements:
.1 Crushed stone or gravel.
.2 Gradations: within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.2.
.3 Table

Sieve Designation	% Passing	
	Lower Course	Surface Course
200 mm	-	-
75 mm	-	-
50 mm	-	-
38.1 mm	-	-
25 mm	100	-
19 mm	-	-
12.5 mm	70-85	100
9.5 mm	-	-
4.75 mm	40-65	55-75
2.00 mm	30-50	35-55
0.425 mm	15-30	15-30
0.180 mm	5-20	5-20
0.075 mm	3-8	3-8

2.1 MATERIALS (Cont'd) .2 (Cont'd)

.4 Coarse aggregate: aggregate retained on 4.75 mm sieve and fine aggregate is aggregate passing 4.75 mm sieve when tested to ASTM C136.
.5 When dryer drum plant or plant without hot screening is used, process fine aggregate through 4.75 mm sieve and stockpile separately from coarse aggregate.
.6 Do not use aggregates having known polishing characteristics in mixes for surface courses.
.7 Sand equivalent: ASTM D2419. Min: 50.
.8 Magnesium Sulphate soundness: to ASTM C88. Max % loss by mass:
.1 Coarse aggregate surface course: 12%.
.2 Coarse aggregate lower course: 12%.
.3 Fine aggregate, surface course: 16%.
.4 Fine aggregate, lower course: 16%.
.9 Los Angeles degradation: Grading B, to ASTM C131. Max % loss by mass:
.1 Coarse aggregate, surface course: 25%.
.2 Coarse aggregate, lower course: 35%.
.10 Absorption: to ASTM C127. Max % by mass:
.1 Coarse aggregate, surface course: 1.75%.
.2 Coarse aggregate, lower course: 2.00%.
.11 Loss by washing: to ASTM C117. Max % passing 0.075 mm sieve:
.1 Coarse aggregate, surface course: 1.5%.
.2 Coarse aggregate, lower course: 2.0%.
.12 Lightweight particles: to ASTM C123. Max % by mass less than 1.95 relative density:
.1 Surface course: 1.5%.
.2 Lower course: 3.0%.
.13 Flat and elongated particles: to ASTM D4791, (with length to thickness ratio greater than 5): Max % by mass:
.1 Coarse aggregate, surface course: 15%.
.2 Coarse aggregate, lower course: 15%..
.14 Crushed fragments: at least 60% of particles by mass within each of following sieve designation ranges, to have at least 1 freshly fractured face. Material to be divided into ranges, using methods of ASTM C136.

Passing		Retained on
25 mm	to	12.5 mm
12.5 mm	to	4.75 mm

.15 Regardless of compliance with specified physical requirements, fine aggregates may be accepted or rejected on basis of past field performance.

2.1 MATERIALS (Cont'd)

.3 Mineral filler:
.1 Finely ground particles of limestone, hydrated lime, Portland cement or other approved non-plastic mineral matter, thoroughly dry and free from lumps.
.2 Add mineral filler when necessary to meet job mix aggregate gradation or as directed to improve mix properties.
.3 Mineral filler to be dry and free flowing when added to aggregate.

2.2 EQUIPMENT

.1 Pavers: mechanical grade controlled self-powered pavers capable of spreading mix within specified tolerances, true to line, grade and crown indicated.

.2 Rollers: sufficient number of type and weight to obtain specified density of compacted mix.

.3 Vibratory rollers:
.1 Minimum drum diameter: 1200 mm.
.2 Maximum amplitude of vibration (machine setting): 0.5 mm for lifts less than 40 mm thick.

.4 Haul trucks: sufficient number and of adequate size, speed and condition to ensure orderly and continuous operation and as follows:
.1 Boxes with tight metal bottoms.
.2 Covers of sufficient size and weight to completely cover and protect asphalt mix when truck fully loaded.
.3 In cool weather or for long hauls, insulate entire contact area of each truck box.

.5 Hand tools:
.1 Lutes or rakes with covered teeth for spreading and finishing operations.
.2 Tamping irons having mass not less than 12 kg and bearing area not exceeding 310 cm^2 for compacting material along curbs, gutters and other structures inaccessible to roller. Mechanical compaction equipment, when approved by Departmental Representative, may be used instead of tamping irons.
.3 Straight edges, 4.5 m in length, to test finished surface.

2.3 MIX DESIGN

.1 Mix design to be provided approved by Departmental Representative.

2.3 MIX DESIGN (Cont'd)

.2 Mix design to be developed by testing laboratory approved by Departmental Representative.

.3 Design of mix: by Marshall method to requirements below.

.1 Compaction blows on each face of test specimens: 75.

.2 Mix physical requirements:

Property	Roads
Marshall Stability at 60°C kN min	5.5 surface course 4.5 lower course
Flow Value mm	2-4
Air Voids in Mixture, %	3-5 surface course 2-6 lower course
Voids in Mineral Aggregate, % min	15 surface course 13 lower course
Index of Retained Stability % minimum	75

.3 Measure physical requirements as follows:

.1 Marshall load and flow value: to AASHTO T245.

.2 Compute void properties on basis of bulk specific gravity of aggregate to ASTM C127 and ASTM C128. Make allowance for volume of asphalt absorbed into pores of aggregate.

.3 Air voids: to ASTM D3203.

.4 Voids in mineral aggregates: to AI MS2, chapter 4.

.5 Index of Retained Stability: measure in accordance with Section 32 12 10 - Marshall Immersion Test for Bitumen.

.4 Do not change job-mix without prior approval of Departmental Representative. When change in material source proposed, new job-mix formula will be provided to be approved to be reviewed by Departmental Representative.

.5 Return plant dust collected during processing to mix in quantities acceptable to Departmental Representative.

PART 3 - EXECUTION

3.1 PLANT AND MIXING REQUIREMENTS

.1 Batch and continuous mixing plants:

.1 To ASTM D995.

3.1 PLANT AND MIXING REQUIREMENTS (Cont'd)

.1 (Cont'd)

.2 Feed aggregates from individual stockpiles through separate bins to cold elevator feeders. Do not load frozen materials into bins.

.3 Feed cold aggregates to plant in proportions to ensure continuous operations.

.4 Calibrate bin gate openings and conveyor speeds to ensure mix proportions are achieved.

.5 Before mixing, dry aggregates to moisture content not greater than 1% by mass or to lesser moisture content if required to meet mix design requirements.

.6 Immediately after drying, screen aggregates into hot storage bins in sizes to permit recombining into gradation meeting job-mix requirements.

.7 Store hot screened aggregates in manner to minimize segregation and temperature loss.

.8 Heat asphalt cement and aggregate to mixing temperature directed by Departmental Representative. Do not heat asphalt cement above maximum temperature indicated on temperature-viscosity chart

.9 Make available current asphalt cement viscosity data at plant. With information relative to viscosity of asphalt being used, Departmental Representative to approve review temperature of completed mix at plant and at paver after considering hauling and placing conditions.

.10 Maintain temperature of materials within 5 degrees C of specified mix temperature during mixing.

.11 Mixing time:

.1 In batch plants, both dry and wet mixing times as directed by Departmental Representative. Continue wet mixing as long as necessary to obtain thoroughly blended mix but not less than 30s or more than 75s.

.2 In continuous mixing plants, mixing time as directed by Departmental Representative but not less than 45s.

.3 Do not alter mixing time unless directed by Departmental Representative.

.2 Dryer drum mixing plant:

.1 To ASTM D995.

.2 Load aggregates from individual stockpiles to separate cold feed bins. Do not load frozen materials into bins.

.3 Feed aggregates to burner end of dryer drum by means of multi-bin cold feed unit and blend to meet job-mix requirements by adjustments of variable speed feed belts and gates on each bin.

3.1 PLANT AND MIXING REQUIREMENTS (Cont'd)

.2 (Cont'd)

.4 Meter total flow of aggregate by an electronic weigh belt system with indicator that can be monitored by plant operator and which is interlocked with asphalt pump so that proportions of aggregate ,RAP and asphalt entering mixer remain constant.

.5 Provide for easy calibration of weighing systems for aggregates without having material enter mixer.

.6 Calibrate bin gate openings and conveyor speeds to ensure mix proportions are achieved. Calibrate weigh bridge on charging conveyor by weighing amount of aggregate passing over weigh bridge in set amount of time. Difference between this value and amount shown by plant computer system to differ by not more than plus or minus 2%.

.7 Make provision for conveniently sampling full flow of materials from cold feed.

.8 Provide screens or other suitable devices to reject oversize particles or lumps of aggregate from cold feed prior to entering drum.

.9 Provide system interlock stop on feed components if either asphalt or aggregate from bin stops flowing.

.10 Accomplish heating and mixing of asphalt mix in approved parallel flow dryer-mixer in which aggregate enters drum at burner end and travels parallel to flame and exhaust gas stream. Control heating to prevent fracture of aggregate or excessive oxidation of asphalt. Equip system with automatic burner controls and provide for continuous temperature sensing of asphalt mixture at discharge, with printing recorder that can be monitored by plant operator. Submit printed record of mix temperatures at end of each day.

.11 Mixing period and temperature to produce uniform mixture in which particles are thoroughly coated, and moisture content of material as it leaves mixer to be less than 2%.

.3 Temporary storage of hot mix:

.1 Provide mix storage of sufficient capacity to permit continuous operation and designed to prevent segregation.

.2 Do not store asphalt mix in storage bins in excess of 3 hours.

.4 Mixing tolerances:

.1 Permissible variation in aggregate gradation from job mix (percent of total mass).

3.1 PLANT AND MIXING REQUIREMENTS (Cont'd)

.4 (Cont'd)

4.75 mm sieve and larger	5.0
2.00 mm sieve	4.0
0.425 mm sieve	3.0
0.180 mm sieve	2.0
0.075 mm sieve	1.0

.2 Permissible variation of asphalt cement from job mix: 0.25%.

.3 Permissible variation of mix temperature at discharge from plant: 5 degrees C.

3.2 PREPARATION

.1 Preparation of granular base, prior to paving, shall be carried out in accordance with Section 32 11 23 - Aggregate Base Courses.

.2 Prior to laying mix, clean surfaces of loose and foreign material.

3.3 TRANSPORTATION OF MIX

.1 Transport mix to job site in vehicles cleaned of foreign material.

.2 Paint or spray truck beds with limewater, soap or detergent solution, or non petroleum based commercial product, at least daily or as required. Elevate truck bed and thoroughly drain. No excess solution to remain in truck bed.

.3 Schedule delivery of material for placing in daylight, unless Departmental Representative approves artificial light.

.4 Deposit mix from surge or storage silo to trucks in multiple drops to reduce segregation. Do not dribble mix into trucks.

.5 Deliver material to paver at uniform rate and in an amount within capacity of paving and compacting equipment.

.6 Deliver loads continuously in covered vehicles and immediately spread and compact. Deliver and place mixes at temperature within range as directed by Departmental Representative, but not less than 135 degrees C.

3.4 PLACING

.1 Obtain Departmental Representative's approval of existing concrete deck surface prior to placing asphalt butuminous tack coat.

.2 Place asphalt concrete to thicknesses, grades and lines as indicated. Bevel all perimeter edges of asphalt as indicated on drawings.

.3 Placing conditions:
.1 Place asphalt mixtures only when air temperature is above 5 degrees C.
.2 When temperature of surface on which material is to be placed falls below 10 degrees C, provide extra rollers as necessary to obtain required compaction before cooling.
.3 Do not place hot-mix asphalt when pools of standing water exist on surface to be paved, during rain, or when surface is damp.

.4 Place asphalt concrete in compacted lifts of thickness as indicated.
.1 Surface course in 1 layer of maximum 65 mm.

.5 Where possible do tapering and levelling where required in lower lifts. Overlap joints by not less than 300 mm.

.6 Spread and strike off mixture with self propelled mechanical finisher.
.1 Construct longitudinal joints and edges true to line markings. Departmental Representative to establish lines for paver to follow parallel to centerline of proposed pavement. Position and operate paver to follow established line closely.
.2 When using pavers in echelon, have first paver follow marks or lines, and second paver follow edge of material placed by first paver. Work pavers as close together as possible and in no case permit them to be more than 30 m apart.
.3 Maintain constant head of mix in auger chamber of paver during placing.
.4 If segregation occurs, immediately suspend spreading operation until cause is determined and corrected.
.5 Correct irregularities in alignment left by paver by trimming directly behind machine.
.6 Correct irregularities in surface of pavement course directly behind paver. Remove by shovel or lute excess material forming high spots. Fill and smooth indented areas with hot mix. Do not broadcast material over such areas.
.7 Do not throw surplus material on freshly screeded surfaces.

3.4 PLACING (Cont'd)

.7 When hand spreading is used:

.1 Distribute material uniformly. Do not broadcast material.

.2 During spreading operation, thoroughly loosen and uniformly distribute material by lutes or covered rakes. Reject material that has formed into lumps and does not break down readily.

.3 After placing and before rolling, check surface with templates and straightedges and correct irregularities.

.4 Provide heating equipment to keep hand tools free from asphalt. Control temperature to avoid burning material. Do not use tools at higher temperature than temperature of mix being placed.

3.5 COMPACTING

.1 Do not change rolling pattern unless mix changes or lift thickness changes. Change rolling pattern only as directed by Departmental Representative.

.2 Roll asphalt continuously to density not less than 98% of blow Marshall density to AASHTO T245.

.3 General:

.1 Provide at least two rollers and as many additional rollers as necessary to achieve specified pavement density. When more than two rollers are required, one roller must be pneumatic tired type.

.2 Start rolling operations as soon as placed mix can bear weight of roller without excess displacement of material or cracking of surface.

.3 Operate roller slowly initially to avoid displacement of material. Do not exceed 5 km/h for breakdown and intermediate rolling for static steel-wheeled and pneumatic tired rollers. Do not exceed 9 km/h for finish rolling.

.4 For lifts 50 mm thick and greater, adjust speed and vibration frequency of vibratory rollers to produce minimum of 25 impacts per metre of travel. For lifts less than 50 mm thick, impact spacing not to exceed compacted lift thickness.

.5 Overlap successive passes of roller by minimum of 200 mm and vary pass lengths.

.6 Keep wheels of roller slightly moistened with water to prevent pick-up of material but do not over-water.

.7 Do not stop vibratory rollers on pavement that is being compacted with vibratory mechanism operating.

3.5 COMPACTING (Cont'd)

.3 (Cont'd)

.8 Do not permit heavy equipment or rollers to stand on finished surface before it has been compacted and has thoroughly cooled.

.9 After traverse and longitudinal joints and outside edge have been compacted, start rolling longitudinally at low side and progress to high side. Ensure that all points across width of pavement receive essentially equal numbers of passes of compactors.

.10 When paving in echelon, leave unrolled 50 to 75 mm of edge which second paver is following and roll when joint between lanes is rolled.

.11 Where rolling causes displacement of material, loosen affected areas at once with lutes or shovels and restore to original grade of loose material before re-rolling.

.4 Breakdown rolling:

.1 Begin breakdown rolling with static steel wheeled roller vibratory roller immediately following rolling of transverse and longitudinal joint and edges.

.2 Operate rollers as close to paver as necessary to obtain adequate density without causing undue displacement.

.3 Operate breakdown roller with drive roll or wheel nearest finishing machine. When working on steep slopes or super-elevated sections use operation approved by Departmental Representative.

.4 Use only experienced roller operators.

.5 Intermediate rolling:

.1 Use pneumatic-tired, steel wheel or vibratory rollers and follow breakdown rolling as closely as possible and while paving mix temperature allows maximum density from this operation.

.2 Rolling to be continuous after initial rolling until mix placed has been thoroughly compacted.

.6 Finish rolling:

.1 Accomplish finish rolling with two-axle or three-axle tandem steel wheeled rollers while material is still warm enough for removal of roller marks. If necessary to obtain desired surface finish, use pneumatic-tired rollers as directed by Departmental Representative.

.2 Conduct rolling operations in close sequence.

3.6 JOINTS

.1 General:

3.6 JOINTS (Cont'd)

.1 (Cont'd)

.1 Remove surplus material from surface of previously laid strip. Do not deposit on surface of freshly laid strip.

.2 Paint contact surfaces of existing structures such as Portland cement concrete deck, manholes, curbs or gutters with bituminous material prior to placing adjacent pavement.

.2 Transverse joints:

.1 Offset transverse joint in succeeding lifts by at least 600 mm.

.2 Cut back to full depth vertical face and tack face with thin coat of hot asphalt prior to continuing paving.

.3 Compact transverse joints to provide smooth riding surface. Use methods to prevent rounding of compacted surface at joints.

.3 Longitudinal joints:

.1 Offset longitudinal joints in succeeding lifts by at least 150 mm.

.2 Cold joint is defined as joint where asphalt mix is placed, compacted and left to cool below 100 degrees C prior to paving of adjacent lane.

.1 If cold joint can not be avoided, cut back by saw cutting previously laid lane, by at least 150 mm, to full depth vertical face, and tack face with thin coat of hot asphalt of adjacent lane.

.3 Overlap previously laid strip with spreader by 25 to 50 mm.

.4 Before rolling, carefully remove and discard coarse aggregate in material overlapping joint with lute or rake.

.5 Roll longitudinal joints directly behind paving operation.

.6 When rolling with static or vibratory rollers, have most of drum width ride on newly placed lane with remaining 150 mm extending onto previously placed and compacted lane.

.4 Construct bevel joints so that thinner portion of joint contains fine graded material obtained by changed mix design or by raking out coarse aggregate in mix. Place and compact joint so that joint is smooth and without visible breaks in grade.

.5 Construct butt joints as directed by Departmental Representative.

3.7 FINISH TOLERANCES

.1 Finished asphalt surface to be within 5 mm of design elevation but not uniformly high or low.

.2 Finished asphalt surface not to have irregularities exceeding 5 mm when checked with 4.5 m straight edge placed in any direction.

3.8 DEFECTIVE WORK

.1 Correct irregularities which develop before completion of rolling by loosening surface mix and removing or adding material as required. If irregularities or defects remain after final compaction, remove surface course promptly and lay new material to form true and even surface and compact immediately to specified density.

.2 Repair areas showing checking, rippling, or segregation.

.3 Adjust roller operation and screed settings on paver to prevent further defects such as rippling and checking of pavement.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 32 92 23 - Sodding.

1.2 MEASUREMENT PROCEDURES

.1 Preparation of sub-grade for placing and spreading of topsoil will be measured for payment in square metres of area prepared.

1.3 REFERENCE STANDARDS

.1 Agriculture and Agri-Food Canada
.1 The Canadian System of Soil Classification, Third Edition, 1998.

.2 Canadian Council of Ministers of the Environment
.1 PN1340-2005, Guidelines for Compost Quality.

1.4 DEFINITIONS

.1 Compost:
.1 Mixture of soil and decomposing organic matter used as fertilizer, mulch, or soil conditioner.
.2 Compost is processed organic matter containing 40% or more organic matter as determined by Walkley-Black or Loss On Ignition (LOI) test.
.3 Product must be sufficiently decomposed (i.e. stable) so that any further decomposition does not adversely affect plant growth (C:N ratio below (25) (50)), and contain no toxic or growth inhibiting contaminates.
.4 Composed bio-solids to: CCME Guidelines for Compost Quality, Category (A) (B).

1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 Quality control submittals:
.1 Soil testing: submit certified test reports showing compliance with specified performance characteristics and physical properties as described in PART 2 - SOURCE QUALITY CONTROL.

1.5 ACTION AND INFORMATIONAL SUBMITTALS (Cont'd)

.2 (Cont'd)

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

1.6 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

.2 Do not dispose of unused soil amendments into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

PART 2 - PRODUCTS

2.1 TOPSOIL

.1 Topsoil for sodding areas: mixture of particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth.

.1 Soil texture based on The Canadian System of Soil Classification, to consist of 20 to 70% sand, minimum 7% clay, and contain 2 to 10% organic matter by weight.

.2 Contain no toxic elements or growth inhibiting materials.

.3 Finished surface free from:

.1 Debris and stones over 50 mm diameter.

.2 Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.

.4 Consistence: friable when moist.

2.2 SOIL AMENDMENTS

.1 Fertilizer:

.1 Fertility: major soil nutrients present in following amounts:

.2 Nitrogen (N): 20 to 40 micrograms of available N per gram of topsoil.

.3 Phosphorus (P): 40 to 50 micrograms of phosphate per gram of topsoil.

.4 Potassium (K): 75 to 110 micrograms of potassium per gram of topsoil.

2.2 SOIL AMENDMENTS (Cont'd)

.1 (Cont'd)

.5 Calcium, magnesium, sulphur and micro-nutrients present in balanced ratios to support germination and/or establishment of intended vegetation.

.6 Ph value: 6.5 to 8.0.

.2 Peatmoss:

.1 Derived from partially decomposed species of Sphagnum Mosses.

.2 Elastic and homogeneous, brown in colour.

.3 Free of wood and deleterious material which could prohibit growth.

.4 Shredded particle minimum size: [5] mm.

.3 Sand: washed coarse silica sand, medium to course textured.

.4 Organic matter: compost Category A, B in accordance with CCME PN1340, unprocessed organic matter, such as rotted manure, hay, straw, bark residue or sawdust, meeting the organic matter, stability and contaminant requirements.

.5 Limestone:

.1 Ground agricultural limestone.

.2 Gradation requirements: percentage passing by weight, 90% passing 1.0 mm sieve, 50% passing 0.125 mm sieve.

.6 Fertilizer: industry accepted standard medium containing nitrogen, phosphorous, potassium and other micro-nutrients suitable to specific plant species or application or defined by soil test.

2.3 SOURCE QUALITY CONTROL

.1 Advise Departmental Representative of sources of topsoil to be utilized with sufficient lead time for testing.

.2 Contractor is responsible for amendments to supply topsoil as specified.

.3 Soil testing by recognized testing facility for PH, P and K, and organic matter.

.4 Testing of topsoil will be carried out by testing laboratory designated by Departmental Representative.

.1 Soil sampling, testing and analysis to be in accordance with Provincial standards.

PART 3 - EXECUTION

3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to [requirements of authorities having jurisdiction] [sediment and erosion control drawings] [sediment and erosion control plan, specific to site, that complies with EPA 832/R-92-005 or requirements of authorities having jurisdiction, whichever is more stringent].

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

3.2 PREPARATION OF EXISTING GRADE

.1 Verify that grades are correct.
.1 If discrepancies occur, notify Departmental Representative and do not commence work until instructed by Departmental Representative.

.2 Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.

.3 Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials.
.1 Remove soil contaminated with calcium chloride, toxic materials and petroleum products.
.2 Remove debris which protrudes more than 75 mm above surface.
.3 Dispose of removed material off site.

.4 Cultivate entire area which is to receive topsoil to minimum depth of 100 mm.
.1 Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

3.3 PLACING AND SPREADING OF TOPSOIL

.1 Place topsoil after Departmental Representative has accepted subgrade.

.2 Spread topsoil in uniform layer not exceeding 75 mm.

3.3 PLACING AND SPREADING OF TOPSOIL (Cont'd)

.3 For sodded areas keep topsoil 25 mm below finished grade.

.4 Manually spread topsoil/planting soil around trees, shrubs and obstacles.

3.4 ACCEPTANCE

.1 Departmental Representative will inspect and test topsoil in place and determine acceptance of material, depth of topsoil and finish grading.

3.5 SURPLUS MATERIAL

.1 Dispose of materials except topsoil not required where directed by Departmental Representative off site.

3.6 CLEANING

.1 Proceed in accordance with Section 01 74 11 - Cleaning.

.2 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

END OF SECTION

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

.1 Section 32 91 19.13 - Topsoil Placement and Grading.

1.2 MEASUREMENT AND PAYMENT

.1 Payment for sodding will be made by the square meter (m^2) of actual area surface measurements taken and computed by Departmental Representative for:

1.3 ADMINISTRATIVE REQUIREMENTS

.1 Scheduling:
.1 Schedule sod laying to coincide with preparation of soil surface.
.2 Schedule sod installation when frost is not present in ground.
.3 Pre-Installation Meetings: conduct pre-installation meeting to verify project requirements, installation instructions and warranty requirements.

1.4 ACTION AND INFORMATIONAL 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 sod and fertilizer and include product characteristics, performance criteria, physical size, finish and limitations.

.3 Samples.
.1 Submit:
.1 Sod for each type specified.
.1 Install approved samples in1 square metre mock-ups and maintain in accordance with maintenance requirements during establishment period.

.4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements of seed mix, seed purity, and sod quality.

1.5 QUALITY ASSURANCE

.1 Qualifications:
.1 Landscape Planting Supervisor: Landscape Industry Certified Technician with Softscape Installation designation.
.2 Landscape Maintenance Supervisor: Landscape Industry Certified Technician with Turf Maintenance designation.

1.6 DELIVERY, STORAGE AND HANDLING

.1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.

.2 Storage and Handling Requirements:
.1 Store materials in accordance with supplier's recommendations.
.2 Replace defective or damaged materials with new.

PART 2 - PRODUCTS

2.1 MATERIALS

.1 Number One Nursery Sod: sod that has been especially sown and cultivated in nursery fields as grass crop.
.1 Nursery Sod types:
.1 Number One Kentucky Bluegrass Sod: Nursery Sod grown solely from seed of cultivars of Kentucky Bluegrass, containing not less than 50% Kentucky Bluegrass cultivars.
.2 Number One Kentucky Bluegrass Sod - Fescue Sod: Nursery Sod grown solely from seed mixture of cultivars of Kentucky Bluegrass and Chewing Fescue or Creeping Red Fescue, containing not less than 40% Kentucky Bluegrass cultivars and 30% Chewing Fescue or Creeping Red Fescue cultivar[s].
.3 Number One Named Cultivars: Nursery Sod grown from certified seed.
.2 Turf Grass Nursery Sod quality:
.1 Not more than 1 broadleaf weed and up to 1% native grasses per 40 square metres.
.2 Density of sod sufficient so that no soil is visible from height of 1500 mm when mown to height of 50 mm.
.3 Mowing height limit: 35 to 65 mm.
.4 Soil portion of sod: 6 to 15 mm in thickness.

2.1 MATERIALS (Cont'd)

.1 (Cont'd)
.2 (Cont'd)

.2 Sod establishment support:
.1 Wooden pegs: 17 x 8 x 200 mm.
.2 Biodegradable starch pegs: 17 x 8 x 200 mm.

.3 Water:
.1 Supplied by Departmental Representative at designated source.

.4 Fertilizer:
.1 To Canada "Fertilizers Act" and Fertilizers Regulations.
.2 Complete, synthetic, slow release with [65] % of nitrogen content in water-insoluble form.

2.2 SOURCE QUALITY CONTROL

.1 When proposed source of sod is approved, use no other source without written authorization from Departmental Representative.

PART 3 - EXECUTION

3.1 INSTALLERS

.1 Use installers who are Member in Good Standing of NL Horticultural Trades Association.

3.2 EXAMINATION

.1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for sod 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.

3.3 PREPARATION

.1 Verify that grades are correct and prepared in accordance with Section 32 91 19.13 - Topsoil Placement and Grading. If discrepancies occur, notify Departmental Representative and commence work when instructed by Departmental Representative.

3.3 PREPARATION (Cont'd)

.2 Do not perform work under adverse field conditions such as frozen soil, excessively wet soil or soil covered with snow, ice, or standing water.

.3 Fine grade surface free of humps and hollows to smooth, even grade, and elevations indicated, to tolerance of plus or minus 25 mm, for Nursery Sod surface to drain naturally.

.4 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials; in location as directed by Departmental Representative in accordance with Section 01 74 19 - Waste Management and Disposal.

3.4 SOD PLACEMENT

.1 Ensure sod placement is done under supervision of certified Landscape Planting Supervisor.

.2 Lay sod within 24 hours of being lifted if air temperature exceeds 20 degrees C.

.3 Lay sod sections in rows, joints staggered. Butt sections closely without overlapping or leaving gaps between sections. Cut out irregular or thin sections with sharp implements.

.4 Roll sod as directed by Departmental Representative. Provide close contact between sod and soil by light rolling. Use of heavy roller to correct irregularities in grade is not permitted.

3.5 SOD PLACEMENT ON SLOPES AND PEGGING

.1 Start laying sod at bottom of slopes.

.2 Peg sod on slopes steeper than 3 horizontal to 1 vertical, within 1 m of catch basins and within 1 m of drainage channels and ditches to following pattern:

.1 100 mm below top edge at 200 mm on centre for first sod sections along contours of slopes.

.2 Not less than 3-6 pegs per square metre.

.3 Not less than 6-9 pegs per square metre in drainage structures. Adjust pattern as directed by Departmental Representative.

.4 Drive pegs to 20 mm above soil surface of sod sections.

3.6 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
.1 Leave Work area clean at end of each day.
.2 Keep pavement and area adjacent to site clean and free from mud, dirt, and debris at all times.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.
.1 Clean and reinstate areas affected by Work.

3.7 PROTECTION BARRIERS

.1 Protect newly sodded areas from deterioration with snow fence on rigid frame as directed by Departmental Representative.

.2 Remove protection 2 weeks after installation after inspection as directed by Departmental Representative.

3.8 MAINTENANCE DURING ESTABLISHMENT PERIOD

.1 Perform following operations from time of installation until acceptance.
.1 Water sodded areas in sufficient quantities and at frequency required to maintain optimum soil moisture condition to depth of 75 to 100 mm.
.2 Cut grass to 50 mm when or prior to it reaching height of 75 mm.
.3 Maintain sodded areas weed free 95%.
.4 Fertilize areas in accordance with fertilizing program. Spread half of required amount of fertilizer in one direction and remainder at right angles and water in well.
.5 Temporary barriers or signage to be maintained where required to protect newly established sod.

3.9 ACCEPTANCE

.1 Nursery Sod areas will be accepted by Departmental Representative provided that:
.1 Sodded areas are properly established.
.2 Sod is free of bare and dead spots.
.3 No surface soil is visible from height of 1500 mm when grass has been cut to height of 50 mm.
.4 Sodded areas have been cut minimum 1 times prior to acceptance.

3.9 ACCEPTANCE (Cont'd)

.2 Areas sodded in fall will be accepted in following spring one month after start of growing season provided acceptance conditions are fulfilled.

.3 When environmental conditions allow, all sodded areas showing shrinkage cracks shall be top-dressed and seeded with a seed mix matching the original.

3.10 MAINTENANCE DURING WARRANTY PERIOD

.1 Repair and resod dead or bare spots to satisfaction of Departmental Representative.

.2 Cut grass and remove clippings as directed by Departmental Representative to height as follows:
.1 Nursery Sod:
.1 50 mm during normal growing conditions.

END OF SECTION

Appendix A

Project Effects Determination Report (PED)

FISHERIES AND OCEANS
CANADIAN ENVIRONMENTAL ASSESSMENT ACT (CEAA) 2012
PROJECT EFFECTS DETERMINATION REPORT

GENERAL INFORMATION

1. Project Title: Bait Depot Demolition, Port aux Basques, NL	
2 Proponent: Fisheries and Oceans Canada, Small Craft Harbours (DFO SCH)	
3. Other Contacts (Other Proponent, Consultant or Contractor): Public Works and Government Services Canada	**4. Role:** OGD Consultant
5. Source of Project Information: Dion Upward, Senior Project Engineer, DFO – Small Craft Harbours	
6. Project Review Start Date: November 7, 2018	
7. PATH No.: NA	**8. PWGSC File No:**
9. TC File No.:	

BACKGROUND

10. Background about Proposed Development (including a description of the proposed development):

The scope of work includes the demolition and removal of the existing Bait Depot at the DFO-SCH facility in Port aux Basques, NL (see appendix A).

PROJECT REVIEW

11. DFO's rationale for the project review:

Project is on federal land ☒ and;

☒ DFO is the proponent

☐ DFO to issue *Fisheries Act* Authorization or *Species at Risk Act* Permit

☐ DFO to provide financial assistance to another party to enable the project to proceed

☐ DFO to lease or sell federal land to enable the project to proceed

☐ Other

12. Fisheries Act Sections (if applicable):

n/a

13. Other Authorities • n/a	**14. Other Authorities rationale for involvement:** • n/a
15. Other Jurisdiction: • n/a	

16. Other Expert Departments Providing Advice:	17. Areas of Interest of Expert Departments:
• n/a	• n/a

18. Other Contacts and Responses: n/a

19. Scope of Project (details of the project subject to review):

Project Description

The proposed project involves the complete demolition and removal of the existing Bait Depot. The building to be demolished measures approximately 32.8 m x 12.3 m.

The contractor is to refer to Hazardous Building Materials Assessment associated with the building demolition (appendix C) prior to submitting a tender. Items identified in the hazardous assessment and the specifications are to be removed and disposed of prior to the completed demolition of the existing building structure.

Existing sanitary sewer line from adjacent residence, concrete low back curb and gutter, catch basin, existing waterline and curb stop for the demolition bait depot are to be left undisturbed. Existing asphalt (outlined on existing site plan) to be saw cut, removed, and disposed of at an approved waste disposal site prior to demolition of the existing building. Contractor to be responsible for preventing demolition debris from entering the existing catch basin.

Refer to the site plans in Appendix B.

Operation

The Environmental Management System with an integrated Environmental Management Plan for the Harbour Authority of Port aux Basques will cover operational aspects of environmental management at the harbour (fuelling, waste disposal, activities on the property and water).

Decommissioning

This facility is not presently planned to be decommissioned. At the time of decommissioning, Small Craft Harbours will develop a site-specific re-use or reclamation plan that is appropriate for the applicable environmental legislation and Fisheries and Oceans Canada policies.

Scheduling

Commencement of this project is subject to DFO SCH operational priorities and funding, as well as regulatory approval, but will likely proceed during the 2018-2019 fiscal year.

20. Location of Project:

Port aux Basques is a community located on the southwest coast of Newfoundland at coordinates 47° 34’ 27” N, 59° 08’ 24” W.

21. Environment Description:

The immediate project site consists of 3 piers, a marginal wharf, harbour authority office, pump house, catch basin, and asphalt parking lot.

The project site is located within the Maritimes Barrens, which extends from the east coast of Newfoundland to the west coast through the south central portion of the island. This ecoregion has the coldest summers with frequent fog and strong winds. Winters are relatively mild with intermittent snow cover particularly near the coastline. Annual precipitation exceeds 1250 mm.

According to Fisheries and Oceans' Traditional Ecological Knowledge Maps of the area a mixture of groundfish (cod, lumpfish, flounder and skate), marine mammals (dolphin/porpoise, whale, seal and other mammals), pelagic fish (capelin, herring, mackerel, salmon) and shellfish (lobster, squid and snow crab) may be found within the general project area.

Species at Risk (Aquatic and Terrestrial)

A search of the Atlantic Canada Conservation Data Centre (ACCDC) database was conducted on November 14, 2018. The ACCDC provided a list of rare/unique species (i.e. plants and animals) within a 5 km buffer zone (standard ACCDC procedure) of the site. When cross referenced with the Schedule 1 of the Species At Risk Act (SARA) the only identified species was the piping plover. Piping plover are found along the southwest coast of NL and typically utilize sandy beaches for nesting. There is not likely to be any sandy or cobble/pebble areas in proximity to the project site, thus no critical habitat.

22. Scope of Effects Considered (sections 5(1) and 5(2)):

Table 1: Potential Project / Environment Interactions Matrix

	As per Section 5(1)			*Section 5(1c)* *Aboriginal Interest*				*Section 5(2)*			*Due Diligence*			
Project Phase / Physical Work/Activity	*Fish (Fisheries Act)*	*Aquatic Species (SARA)*	*Birds (MBCA)*	*Health and Socio economic*	*Physical and cultural heritage*	*Land use*	**HAPA Significance*	*Health and Socio economic*	*Physical and cultural heritage*	**HAPA Significance*	*Water (ground, surface, drainage, etc)*	*Terrestrial / Aquatic Species*	*Soil/Marine Sediments*	*Air Quality*
Harbour development														
Building Demolition	-	-	-	-	-	-	-	P	-	-	-	-	-	P
Transportation/disposal of wastes	-	-	-	-	-	-	-	-	-	-	P	-	P	P
Operation / Maintenance	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Decommissioning / Abandonment	-	-	-	-	-	-	-	-	-	-	-	-	-	-

**structure, site or thing that is of historical, archaeological, paleontological or architectural significance.*
Legend: P = Potential Effect of Project on Environment; ' - ' = No Interaction

23. Environmental Effects of Project:

In the table above, potential environmental effects were identified. Scoped project activities such as building demolition and transportation and disposal of waste materials have the potential to effect the environment. Each of the potential effects are addressed here:

Health and Socio economic

- Potential for safety hazards to workers during demolition and construction activities.

Water

- Improper disposal of hazardous building materials may result in negative impacts to water.

Soil

- Contamination of upland area due to improper disposal of construction waste.
- Accidental discharge of heavy machinery fuel/fluids will contaminate soil.
- Improper disposal of hazardous building materials may result in negative impacts to soil.

Air Quality / Noise

- Some minor disruptions and annoyance to facility users and residents who live in close proximity to the project site can be anticipated from project activities and the use of heavy equipment.

24. Mitigation Measures for Project (including Habitat Compensation):

Develop a response plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance and keep an emergency spill kit on site.

Remove all construction materials from site upon project completion.

Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.

Wash refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the nearby water.

Items identified in the hazardous assessment (appendix C) are to be removed and disposed of prior to the demolition of the existing building structure.

Workers in contact with hazardous materials (e.g. wastes) must be provided with and use appropriate personal protective equipment;

Proper safety procedures must be followed during the duration of the project as per applicable municipal, provincial, and federal regulations;

Employees will be trained in health and safety protocols (e.g. safe work practices, emergency response).

25. Significance of Adverse Environmental Effects of project:

Significant adverse environmental effects are unlikely, taking into account mitigation measures.

26, Other Considerations (Public Consultation, Aboriginal Consultation, Follow-up)

Public Consultation

No negative public concern is expected as a result of this project. Public consultation was not deemed necessary as part of this determination.

Aboriginal Consultation

Aboriginal peoples are not know to utilize the Bait Depot facility in Port aux Basques. As such, aboriginal consultation was not deemed necessary as part of this determination.

Government Consultation

Federal and provincial authorities are not likely to have an interest in the project.

Accuracy and Compliance Monitoring

A follow-up program (as defined in S. 2(1) and as applicable to non-designated projects on federal lands) is a program for determining the effectiveness of any mitigation measures. Site monitoring (accuracy and compliance monitoring) may be conducted to verify whether required mitigation measures were implemented. The proponent must provide site access to Responsible Authority officials and/or its agents upon request.

27. Other Monitoring and Compliance Requirements (e.g. *Fisheries Act* or *Species at Risk Act* requirements)

n/a

CONCLUSION

28. Conclusion on Significance of Adverse Environmental Effects:

The Federal Authorities have evaluated the project in accordance with Section 67 of *Canadian Environmental Assessment Act (CEAA), 2012*. On the basis of this evaluation, the departments have determined that the project is not likely to cause significant adverse environmental effects with mitigation and therefore can proceed as outlined.

29. Prepared by: Natasha Warren **Date:** November 14, 2018

31. Name: Natasha Warren

32. Title: Environmental Specialist, PWGSC-ES

DECISION

33. Decision Taken

☒ DFO may exercise its power, duty or function, i.e. may issue the authorization - where the project is not likely to cause significant adverse environmental effects. Confirm below the specific power, duty or function that may be exercised.

- ☐ DFO to issue *Fisheries Act* Authorization or *Species at Risk Act* Permit
- ☒ DFO to proceed with project (as proponent)
- ☐ for project to proceed financial assistance for project to proceed
- ☐ DFO to provide federal land for project to proceed

☐ DFO has decided not to exercise its power, duty or function because the project is likely to cause significant adverse environmental effects.

☐ DFO to ask the Governor in Council to determine if the significant adverse environmental effects are justified in the circumstances

34. Approved by: Paul Curran **35. Date:** Nov 29/18

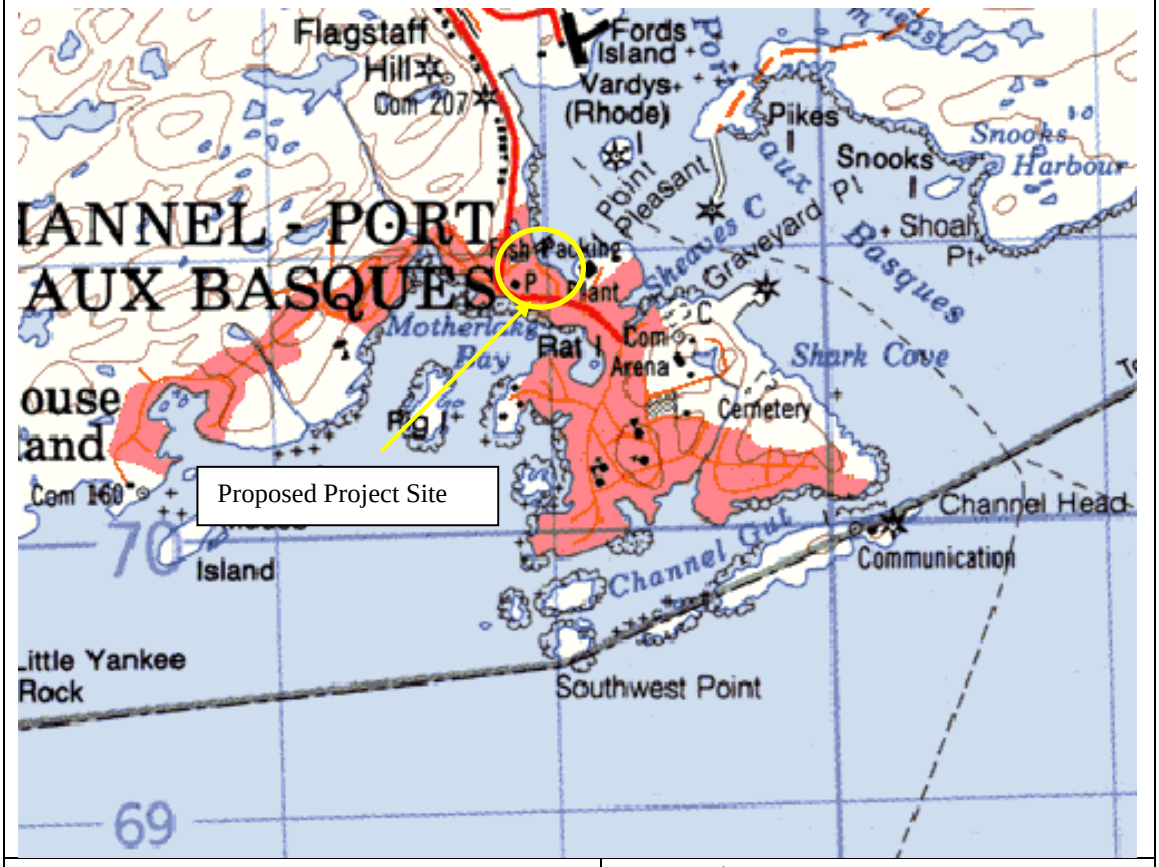
36. Name: Paul Curran

37. Title: Regional Engineer, DFO-SCH, NL

38. References: n/a

Appendix A FIGURES

-Topo Map
- Aerial Photograph



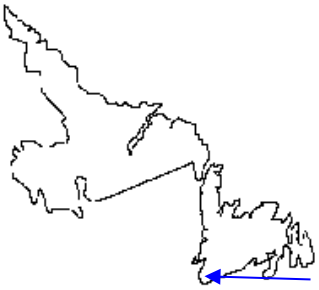


Figure 1: Topographic Map of Proposed Site
Location: Port aux Basques
NTS Mapsheet 11-O-11 – Port aux Basques
Scale: 1:50,000

Figure 1: Topographic Map indicating project site.

Figure 2: Location of proposed project (DFO Aerial Photograph 2015).

Appendix B SITE PLANS

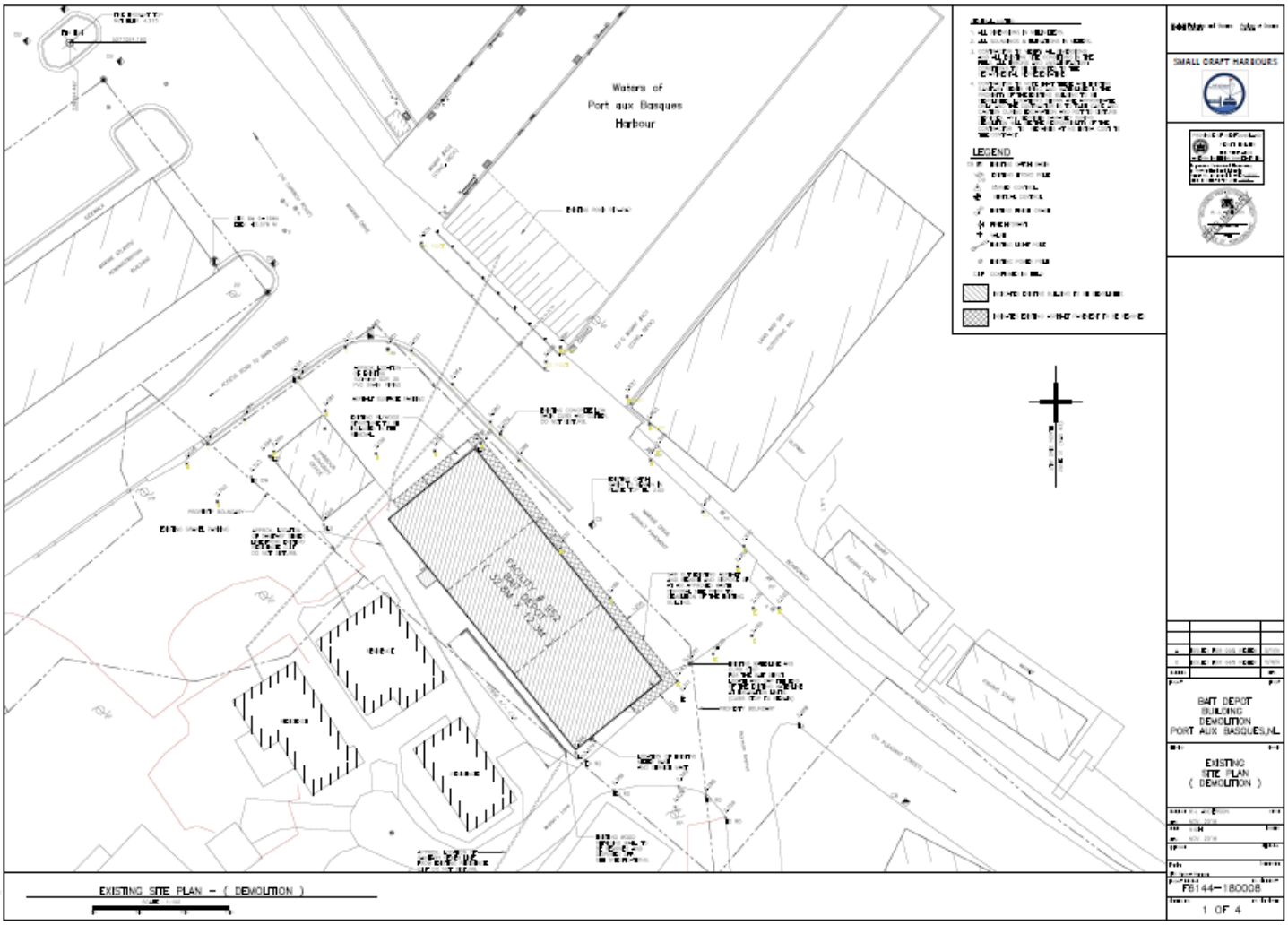


Figure 3: Existing structures and demolition site plan.

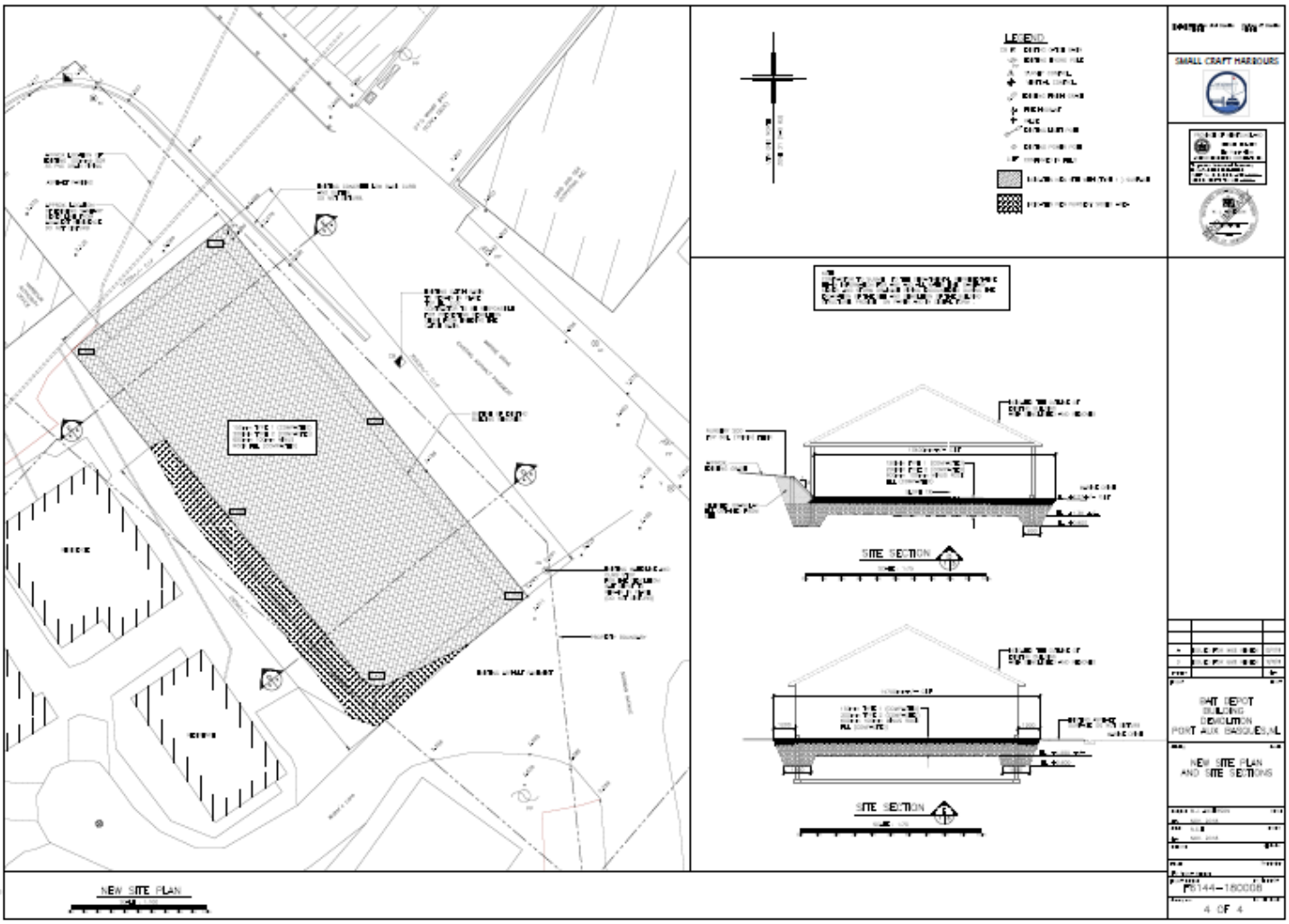


Figure 4: New site plan and site sections.

Appendix C HAZMAT

Hazardous Building Material Assessment

Facility #952
Bait Depot
Port Aux Basques, NL

Submitted to:

Fisheries and Oceans Canada
Small Craft Harbours
John Cabot Building
10 Barters Hill, St John's, NL

Submitted by:

AFN Engineering Inc.
1243 Kenmount Road
St. John’s, NL

October 15, 2018

Executive Summary

AFN Engineering Inc. (AFN) was retained by the Department of Fisheries and Oceans Small Craft Harbours (SCH), to conduct a Hazardous Building Material assessment of Facility #952 (Bait Depot), located in Port Aux Basques, NL. The building is currently slated for demolition.

The Bait depot was in service April 1948 and was renovated in 1991 to a storage/office space. The building is a one-storey wood frame building with a concrete floor and concrete foundation. The building has a total floor area of 403.5m^2 and contains: (i) A cold storage area with an open space for storage; (ii) an office area complete with storage, kitchen area, washroom and corridors; (iii) former processing area, which is an open space with multiple storage units; and (iv) an upper level storage area for nets/rope/twine.

The purpose of the assessment was to identify the presence of hazardous building materials in the building, to ensure the materials are properly handled and disposed during structure demolition.

A summary of the findings and recommendations, related to building demolition, is included below:

Findings:

- Chrysotile asbestos (10%) is present in the ceiling insulation (rigid insulation with black backing), in the former processing area.

- Chrysotile asbestos (3%) is present in the roofing shingles on the building. Note that the entire roof area was not accessible (due to height restrictions), but given the presence of asbestos in the shingles, it would be reasonable to assume that asbestos is present in the mastic material at roofing penetrations.

- There is potential for asbestos to be present in areas that were not sampled including but not limited to, electrical and mechanical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment, fire doors or other hidden fire rated building materials, and underground infrastructure and piping. Also note that based on comments provided in a previous building condition report by Anderson Engineering Consultants Ltd. In September, 2018, it is inferred that asbestos siding may be present in the older board cladding behind the existing metal siding.

- There are fluorescent lights (with ballasts) in the building. The ballast codes at two (2) locations were checked, and in both cases the ballasts were leaking with no reference code stamped on the ballast to identify it as non-PCB.

- Mercury may be present in the light tubes associated with the fluorescent light fixtures.

- A paint sample collected on the walls of the former processing area indicated a lead concentration of 10,000mg/kg. Based on the result, the paint is considered lead based and likely leachable. There were no PCBs or mercury concentrations noted in the paint samples submitted for analysis.

- Mould is present in various locations throughout the building. The most obvious signs of mould were noted on the gypsum board walls in the office area.

- There are various "fishing related" items stored throughout the building including nets, pots, ropes, buoys, obsolete electrical equipment, etc.

- Original copper piping should be assumed to contain lead in the joint solder. Lead is also common to bell fitting joints for cast iron drainage piping, wire connectors, electrical cable sheathing, and other electrical applications. Based on the age of the building, lead pipes may be present as well.

- There is equipment such as condensers in the building that contain refrigerants. It was not ascertained during the assessment whether or not the equipment has been previously drained of refrigerants, and in this regard it should be assumed that potential ozone depleting substances are present in the equipment.

- Silica is expected to be present in concrete present in the building foundation.

Recommendations:

- Prior to general disturbance activity, all asbestos containing materials should be safely removed from the building and disposed of in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98). The work should be carried out by an asbestos abatement contractor registered with the Department of Labour, Occupational Health and Safety Branch. If other potential ACMs that could not be sampled as part of this assessment, due to access issues, are encountered during demolition activities (particularly any older board material behind the exterior metal cladding or potential transite in cold storage areas), these materials should be treated as ACMs or samples should be collected and tested to verify asbestos content. This should be done as soon as these materials are encountered and before these materials are disturbed.

- Mercury-containing fluorescent light tubes or bulbs should be removed intact and returned to the manufacturer for recycling, or disposed of at an approved facility.

- Flaking/peeling paint throughout the former processing area should be removed and disposed of as hazardous waste. Once the peeling/flaking paint has been removed, the bulk demolition debris, which includes adhered paint and substrate, will likely be acceptable for disposal at a Provincial waste disposal facility (although regulatory discussion would be required to confirm). Note that in all cases, precautions should be taken during removal or disturbance of painted surfaces to limit workers occupational exposure to lead dust.

- There was no evidence that UFFI is present in this building. However, the inferred age of the building suggests that UFFI could be present within the walls which could not be visually inspected. Due to the amount of time that has passed since the insulation was likely installed (i.e. prior to 1980) along with the likelihood that formaldehyde has off-gassed over this period of time, UFFI is not considered to be a concern for this building.

- Workers should don appropriate PPE when handling mould stained building materials. Remediation as outlined in the 2010 Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines would be recommended to ensure demolition contractors are not exposed to building materials impacted by mould. The primary concern with mould-contaminated materials is protection of human health during disturbance. There are no provincial disposal guidelines for mould-impacted building materials. These materials may be disposed of at any municipal landfill, provided they do not contain unacceptable levels of other hazardous materials (e.g., metals-based paint, asbestos, etc.).

- All ballasts that are removed should be placed in a proper storage containers. Leaks or stained areas should be cleaned and/or removed in accordance with applicable regulations or industry standards. All suspect PCB-containing ballasts or other equipment (if present) should be handled, decontaminated, transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations governing PCBs.

- Disposal of all items scattered throughout the building should be in accordance with the NL Waste Management Regulations" under the "Waste Management Act".

- ODS equipment containing refrigerants are regulated at both a Provincial and Federal level, and disposal of this equipment must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations.

- Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/demolition of silica containing products, such as concrete. These precautions would include wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting the work area.

Table of Contents

List of Tables

List of Figures

Appendices

1.0 Introduction

AFN Engineering Inc. (AFN) was retained by the Department of Fisheries and Oceans Small Craft Harbours (SCH), to conduct a Hazardous Building Material assessment of Facility #952 (Bait Depot), located in Port Aux Basques, NL. The building is currently slated for demolition.

The Bait depot was in service April 1948 and was renovated in 1991 to a storage/office space. The building is a one-storey wood frame building with a concrete floor and concrete foundation. The building has a total floor area of 403.5m^2 and contains: (i) A cold storage area with an open space for storage; (ii) an office area complete with storage, kitchen area, washroom and corridors; (iii) former processing area, which is an open space with multiple storage units; and (iv) an upper level storage area for nets/rope/twine.

The purpose of the assessment was to identify the presence of hazardous building materials in the building, to ensure the materials are properly handled and disposed during structure demolition.

A floor plan of the building is included in **Appendix A**. Photographs of the building are included in **Appendix B**. The Laboratory Certificates are included in **Appendix C**.

1.1 General Building Description

A general description of the building is noted below:

- Building contains a concrete foundation and concrete floor. The floor in the office space contains wood joists, plywood covering over the concrete floor, with a floor tile and/or carpet finish.
- The building is wood frame construction with load bearing exterior and interior walls supported on concrete foundations.
- The roof consists of rafters supported by knee wall, load bearing walls or wooden beams/steel columns.
- Exterior cladding is pre-finished vertical metal siding. Behind the siding appears to be painted plywood/board or older metal siding. Windows are vinyl casement or wood slider type. Exterior doors are insulated steel door except the office area which has aluminum window and glass. The overhead door to the cold storage is steel insulated panel type, manual operation.
- Eaves/soffit around the perimeter are wood type, painted. Roofing material is asphalt shingles.
- Interior consists of painted gypsum board walls/ceilings, vinyl floor tiles, carpet flooring,

acoustic ceiling tiles, painted plywood walls, and concrete flooring. The upper storage area contains painted plywood walls and exposed SM rigid insulation on the walls and ceilings.

- Main electrical service distribution consists of 100 amp feeds to electrical panels located in three grouped/metered areas I the building.

Note: There were lobster pots, ropes, nets and various other fishing gear scattered/stockpiled throughout the building, which limited observations. In addition, the meeting room area and washroom area was not accessible at the time of the investigation.

2.0 Scope of Work

The scope of work for this project consisted of the following:

- Conduct a walk-through inspection of the building to identify the potential and/or actual presence of hazardous building materials, including:

  - Asbestos-Containing Materials (ACMs)
  - Lead based paint (LBP) and mercury based paint (MBP)
  - Mercury based thermostats
  - Polychlorinated biphenyls (PCBs)
  - Sources of ozone depleting substances (ODSs)
  - Other potentially hazardous building materials

- Inspect the Site for evidence of areas that are impacted by suspected visible mould growth.

- Sampling and laboratory testing of suspected ACMs to confirm the presence or absence of asbestos fibres.

- Sampling and laboratory testing of paint to determine concentrations of lead, mercury and PCBs.

- Review of accessible fluorescent lights for PCB containing light ballasts.

- Review of the Site for the presence of potential sources of ODSs and other hazardous materials.

- Prepare a written report documenting the methodologies and findings of the hazardous building material assessment.

3.0 Hazardous Material Assessment

The Regulatory framework and results of the sampling program are outlined in the following sections. Note that all samples were submitted to Maxxam Analytics Inc. (Maxxam) in St. John's, Newfoundland. Maxxam are a Canadian Association for Laboratory Accreditation (CALA) certified laboratory. Maxxam has an in-house Quality Assurance (QA) program that consists of analyzing matrix spike, spiked blank, and method blank samples. The results of the matrix spike and blank samples are compared to established Quality Control (QC) limits to assess the quality of the results.

3.1 Asbestos Containing Materials (ACMs)

General

ACMs are regulated by the Asbestos Abatement Regulations, 1998 under the Occupational Health and Safety Act (O.C. 98-730) in Newfoundland and Labrador. These regulations provide safe handling procedures for ACMs to minimize exposure to airborne asbestos fibres. Materials containing greater than 1% asbestos by dry weight is considered asbestos material.

Assessment

Select samples (7 in total) were collected during the assessment. All samples were collected by removing approximately 6 cm^2 of materials (where possible) and placing the sampled materials in a ziploc plastic bag.

The results of the asbestos analysis are summarized in Table 1.

Table 1: Summary of Asbestos Sampling

Room	Sample ID	Description	Condition	Results*
Office area	A-1	Gypsum board joint material	Poor	Asbestos not detected
Cold storage area	A-2	Gypsum board joint material	Poor	Asbestos not detected
Former processing area	A-3	Insulation (black backing) on ceiling	Poor	10% chrysotile asbestos
Storage room in former processing area	A-4	Insulation around door	Poor	Asbestos not detected
Office area	A-5	Floor tile	Poor	Asbestos not detected
Storage room in former processing area	A-6	Ceiling board material	Poor	Asbestos not detected
Exterior roof	A-7	Shingle	Poor	3% chrysotile asbestos

***Shading and bold indicates asbestos containing material (ACM) 1% by volume or greater.**

As noted in Table 1, asbestos was confirmed in the roofing shingles and the ceiling insulation in the former processing area. Also note:

- The roof area in the location of penetrations was not accessible, but given the presence of asbestos in the shingles, it would be reasonable to assume that asbestos is present in the mastic material at roofing penetrations.
- There is potential for asbestos to be present in areas that were not sampled including but not limited to, electrical and mechanical components and insulators such as wiring and gaskets inside electrical panels, electronic and/or mechanical equipment, fire doors or other hidden fire rated building materials, and underground infrastructure and piping.
- The board material behind the exterior metal cladding was not accessible and in this regard, no samples of older older exterior cladding were obtained. Based on comments provided in a previous building condition report by Anderson Engineering Consultants Ltd. In September, 2018, it is inferred that asbestos siding may be present behind the existing metal siding or in transite board in cold storage areas.

3.2 Polychlorinated Biphenyls (PCBs)

General

PCBs are commonly associated with dielectric fluids within electrical equipment such as transformers, fluorescent light ballasts and capacitors manufactured in Canada prior to

approximately 1980. The federal Environment Contaminants Act (1976) prohibited the use of PCBs in heat transfer equipment installed after September 1, 1977 and in transformers and capacitors installed after July 1, 1980.

PCB containing equipment is considered hazardous waste upon removal for the purpose of disposal. PCB wastes were previously regulated by the federal Storage of PCB Material Regulations (SOR/92-507) under the Canadian Environmental Protection Act and the provincial Storage of PCB Waste Regulations, 2003 under the Environmental Protection Act. The Storage of PCB Material Regulations have been repealed by new PCB Regulations (SOR/2008-273).

Assessment

There are fluorescent lights (with ballasts) in the building. The ballast codes at two (2) locations were checked, and in both cases the ballasts were leaking with no reference code stamped on the ballast to identify it as non-PCB.

The paint sample from the exterior trim was submitted for PCB analysis and the result is shown in Table 2. As noted, the PCB concentrations in the paint was less than the laboratory detection limit of 5 mg/kg.

Table 2: Summary of Paint Sampling – PCBs

Room	Sample ID	Description	Condition	PCB Concentration (mg/kg)
Exterior	P-1	Peeling/flaking paint from exterior doors and wooden trims	Poor	<5 mg/kg

3.3 Lead

General

There are no provincial guidelines available to regulate the concentration of lead in paint. In 1976, the Hazardous Materials Product Act – Liquid Coating established the maximum acceptable limit for amount of lead in interior paint at 0.5% (equivalent to 5000 mg/kg). An industry agreement excluded it from exterior paint in 1990. Subsequent to this, the Surface Coating Materials Regulations were promulgated (in 2005), reducing the allowable lead content of paints to 0.06% (600 mg/kg). This level was later reduced in 2009 to 0.009% (90 mg/kg).

Samples in excess of 5000 mg/kg of lead are subject to leachate extraction analysis. The Transportation of Dangerous Goods (TDG) Regulations, the Export and Import of Hazardous

Waste and Hazardous Recyclable Materials (EIHW&HRM) Regulations apply to material with a lead leachate concentration in excess of 5mg/L, and therefore require regulated disposal.

Assessment

The paint samples for lead were collected from painted surfaces by cutting and scraping areas of flaking paint using clean knives and scrapers. Samples were collected down to bare substrate and approximately 5g of paint was obtained at each sampling location. Samples were collected from the exterior trim and the interior walls in the former processing area.

The results of the analysis are included in Table 3.

Table 3: Summary of Paint Sampling – Lead

Room	Sample ID	Description	Condition	Lead Concentration (mg/kg)
Exterior	P-1	Peeling/flaking paint from exterior doors and wooden trims	Poor	40 mg/kg
Former processing area	P-2	Peeling/flaking paint on walls and interior doors	Poor – significant peeling/flaking throughout	10,000 mg/kg

* Shading indicates concentrations exceed guidelines

Notes:

1. Surface Coating Materials Regulations for lead in paint is 90 mg/kg. The TDG and EIHW&HRM regulations for lead in leachate is 5 mg/L.
2. Bold and shading indicate levels of lead leachate > 90mg/kg.

The paint sample collected on the walls of the former processing area indicated a lead concentration of 10,000mg/kg. Based on the result, the paint is considered lead based and likely leachable. Note that once the flaking/peeling paint is removed (and disposed of as hazardous waste), it is likely that the bulk demolition debris, which includes adhered paint and substrate, would be acceptable for disposal at a Provincial waste disposal facility with the permission of the Provincial Regulators.

3.4 Mercury

General

There are no provincial guidelines available to regulate the concentration of mercury in paint. The management of mercury is regulated under the Surface Coating Materials Regulations, 2005 under the Hazardous Products Act (0.001% or 10 mg/kg) to determine the maximum acceptable concentration of mercury in paint. For comparison purposes, the 2006 Canadian

Council of Ministers of the Environment Canadian Environmental Quality Guidelines (CCME-CEQG) for mercury in soil at commercial sites have been used (24 mg/kg).

Samples in excess of 24 mg/kg (commercial) of mercury are subject to leachate extraction analysis. The Transportation of Dangerous Goods Regulations, the Export and Import of Hazardous Waste and Hazardous Recyclable Materials Regulations apply to material with a mercury leachate concentration in excess of 0.1mg/L, and therefore require regulated disposal.

Assessment

Mercury-containing fluorescent light tubes or bulbs may be present in the building. These should be removed intact and returned to the manufacturer for recycling, or disposed of at an approved facility.

A paint sample for mercury was collected from the exterior trim by cutting and scraping an area of flaking paint using a clean knife and scraper. The sample was collected down to bare substrate and approximately 5g of paint was obtained at the sampling location.

Table 4: Summary of Paint Sampling – Mercury

Room	Sample ID	Description	Condition	Mercury Concentration (mg/kg)
Exterior	P-1	Peeling/flaking paint from exterior doors and wooden trims	Poor	<1.0 mg/kg

* Shading indicates concentrations exceed guidelines

Notes:

1. Surface Coating Materials Regulations for mercury is 10 mg/kg.
2. Bold and shading indicate levels of mercury >10 mg/kg.

As noted in Table 4, the concentration of mercury in the exterior trim paint sample was non-detect, indicating that the paint is not mercury based.

3.5 Ozone Depleting Substances (ODSs)

General

Ozone depleting substances are regulated under the provincial Halocarbon Regulations, 2005 under the Environmental Protection Act and the Ozone-depleting Substances Regulations, 1998 under the Canadian Environmental Protection Act, 1999. The federal regulations were amended in 2001, 2002 and 2004. The Federal Halocarbon Regulations 2003 under the Canadian

Environmental Protection Act, 1999 applies to refrigeration and air-conditioning systems on federal government properties. Halocarbon containing equipment should be serviced, charged, and/or properly disposed of by a licensed contractor. An equipment service log should be maintained for each piece of equipment. Halocarbon containing equipment with a capacity greater than 19 kW requires an annual leak testing.

Assessment

There is equipment such as condensers in the building that contain refrigerants. It was not ascertained during the assessment whether or not the equipment has been previously drained of refrigerants, and in this regard it should be assumed that potential ozone depleting substances are present in the equipment.

3.6 Mould

General

There are currently no regulations in Canada related specifically to mould in buildings. There have been no exposure limits established for concentrations of mould in air. However, a safe work environment is mandated in Canada by federal and provincial occupational health and safety acts and related regulations. In addition, Health Canada outlines investigation methods and guidelines for mould in private and public buildings:

- "Residential Indoor Air Quality Guidelines: Moulds", Health Canada, 2007;
- "Fungal Contamination in Public Buildings: Health Effects and Investigation Methods", Health Canada, 2004; and
- "Indoor Air Quality in Office Buildings: A Technical Guide", Health Canada, Report of the Federal-Provincial Advisory Committee on Environmental and Occupational Health, 1995.

There are numerous resources for the investigation and remediation of mould. The following documents provide procedures for remediation of mould in buildings:

- "Mould Guidelines for the Canadian Construction Industry", Canadian Construction Association, 2004;
- "Fighting Mould – The Homeowners Guide", Canada Mortgage and Housing Corporation (CMHC), 2007; and
- "Should You Test the Air in Your Home for Mould?", CMHC, 2006.

In addition, the 2010 Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines is a good reference document for mould remediation in buildings.

Assessment

Mould is present in various locations throughout the building. The most obvious signs of mould were noted on the gypsum board walls in the office area (see Photos in Appendix B). Workers should don appropriate PPE when handling mould stained building materials. Remediation as outlined in the 2010 Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines would be recommended to ensure demolition contractors are not exposed to building materials impacted by mould.

3.7 Urea Formaldehyde Foam Insulation

General

UFFI was developed in Europe in the 1950s. It was used in Canada, primarily between 1977 and 1980, when it was banned from use under the federal Hazardous Products Act. To produce the urea formaldehyde foam, excess formaldehyde is added to the urea to ensure complete curing during the insulation process. Excess formaldehyde was given off within one to two days of injection during the curing process. If exposed to water or moisture, the UFFI may start to deteriorate, resulting in a release of formaldehyde gas.

Assessment

There was no evidence noted in the current investigation, to suggest that UFFI is present in the building. However, the inferred age of the building suggests that UFFI could be present within the walls which could not be visually inspected. Due to the amount of time that has passed since the insulation was likely installed (i.e. prior to 1980) along with the likelihood that formaldehyde has off-gassed over this period of time, UFFI is not considered to be a concern for this building.

3.8 Other

Other observations recorded during the assessment included:

- There are various “fishing related” items stored throughout the building including nets, pots, ropes, buoys, obsolete electrical equipment, etc.

- Original copper piping should be assumed to contain lead in the joint solder. Lead is also common to bell fitting joints for cast iron drainage piping, wire connectors, electrical cable sheathing, and other electrical applications. Based on the age of the building, lead pipes may be present as well.

- Silica is expected to be present in concrete present in the building foundation.

4.0 Conclusions

Based on the results of the assessment/sampling program, the following is provided for the Client's consideration:

- Prior to general disturbance activity, all asbestos containing materials should be safely removed from the building and disposed of in accordance with the NL Asbestos Abatement Regulations (Reg. 111/98). The work should be carried out by an asbestos abatement contractor registered with the Department of Labour, Occupational Health and Safety Branch. If other potential ACMs that could not be sampled as part of this assessment, due to access issues, are encountered during demolition activities (particularly any older board material behind the exterior metal cladding or transite board in cold storage areas), these materials should be treated as ACMs or samples should be collected and tested to verify asbestos content. This should be done as soon as these materials are encountered and before these materials are disturbed.

- Mercury-containing fluorescent light tubes or bulbs should be removed intact and returned to the manufacturer for recycling, or disposed of at an approved facility.

- Flaking/peeling paint throughout the former processing area should be removed and disposed of as hazardous waste. Once the peeling/flaking paint has been removed, the bulk demolition debris, which includes adhered paint and substrate, will likely be acceptable for disposal at a Provincial waste disposal facility (although regulatory discussion would be required to confirm). Note that in all cases, precautions should be taken during removal or disturbance of painted surfaces to limit workers occupational exposure to lead dust.

- Workers should don appropriate PPE when handling mould stained building materials. Remediation as outlined in the 2010 Environmental Abatement Council of Ontario (EACO) Mould Abatement Guidelines would be recommended to ensure demolition contractors are not exposed to building materials impacted by mould. The primary

concern with mould-contaminated materials is protection of human health during disturbance. There are no provincial disposal guidelines for mould-impacted building materials. These materials may be disposed of at any municipal landfill, provided they do not contain unacceptable levels of other hazardous materials (e.g., metals-based paint, asbestos, etc.).

- All ballasts that are removed should be placed in a proper storage containers. Leaks or stained areas should be cleaned and/or removed in accordance with applicable regulations or industry standards. All suspect PCB-containing ballasts or other equipment (if present) should be handled, decontaminated, transported and disposed of by a registered hazardous waste transporter in accordance with applicable regulations governing PCBs.

- Disposal of all items scattered throughout the building should be in accordance with the NL Waste Management Regulations" under the "Waste Management Act".

- ODS equipment containing refrigerants are regulated at both a Provincial and Federal level, and disposal of this equipment must comply with the most recent NL Halocarbon Regulations and the Federal Halocarbon Regulations.

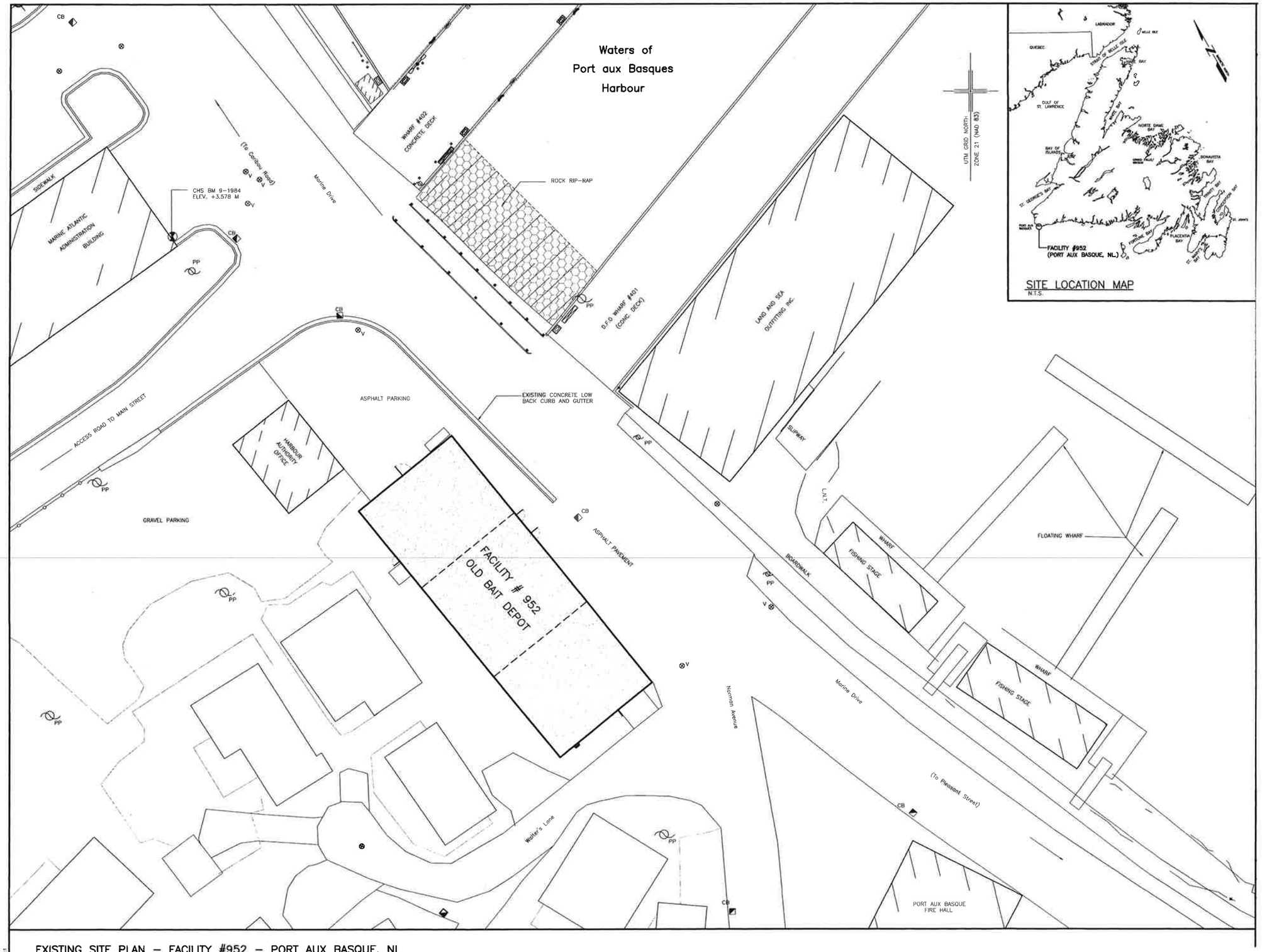
- Precautions should be taken to prevent/reduce exposure to silica dust during any disturbance/demolition of silica containing products, such as concrete. These precautions would include wetting the surface of the materials to prevent dust emissions, donning respiratory protection, and cleaning tools and clothing prior to exiting the work area.

5.0 Limitations

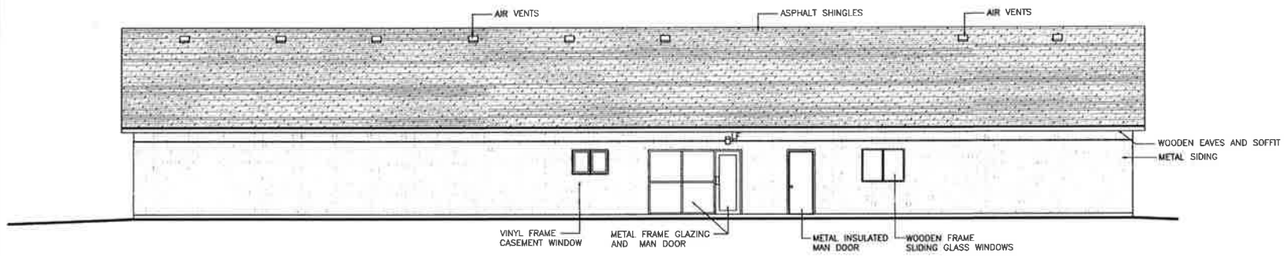
This report was prepared exclusively for the purposes, project and Site location outlined in the report. The report is based on information provided to, or obtained by AFN Engineering Inc. ("AFN") as indicated in the report, and applies solely to Site conditions existing at the time of the Site investigation. Although a reasonable investigation was conducted by AFN, AFN's investigation was by no means exhaustive and can not be construed as a certification of the absence of any contaminants from the Site. Rather, AFN's report represents a reasonable review of available information within an agreed work scope, schedule and budget. It is therefore possible that currently unrecognized contamination or potentially hazardous materials may exist at the Site, and that the levels of contamination or hazardous materials may vary across the Site. Further review and updating of the report may be required as local and Site conditions, and the regulatory and planning frameworks, change over time.

This report was prepared by AFN for the sole benefit of our Client (DFO). The material in the report reflects AFN's judgment in light of the information available to AFN at the time of preparation. Any use which a third party (eg., a party other than our Client) makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. AFN accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Appendix A
Figures



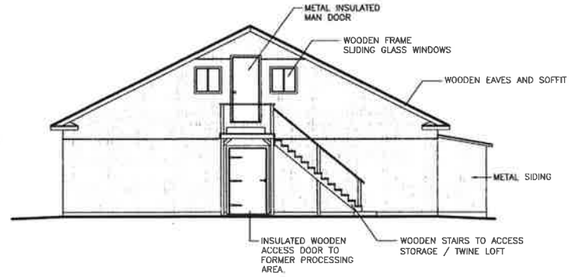
EXISTING SITE PLAN – FACILITY #952 – PORT AUX BASQUE, NL



EXISTING FRONT ELEVATION

SCALE : 1:75

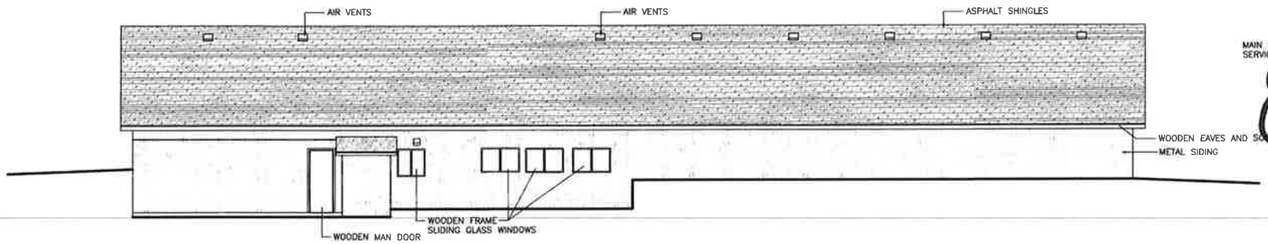
0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



EXISTING RIGHT SIDE ELEVATION

SCALE : 1:75

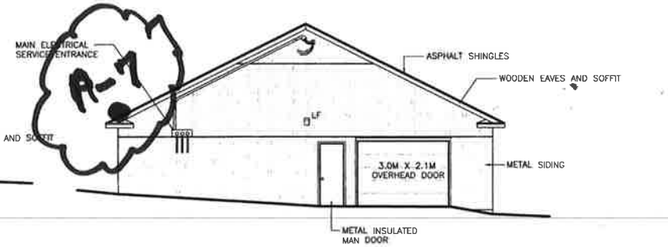
0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



EXISTING REAR ELEVATION

SCALE : 1:75

0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



EXISTING LEFT SIDE ELEVATION

SCALE : 1:75

0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m

FLOOR:
CONCRETE FLOOR (UNFINISHED)

CEILING:
PLYWOOD CEILINGS (PAINTED)

WALLS:
WOOD STUD WALL WITH PLYWOOD/PAINT FINISH.

FLOOR:
BUILT UP FLOOR WITH 38mmX140mm FLOOR JOIST AT 400mm C/C AND 19mm PLYWOOD, CARPET AND TILE FINISH.

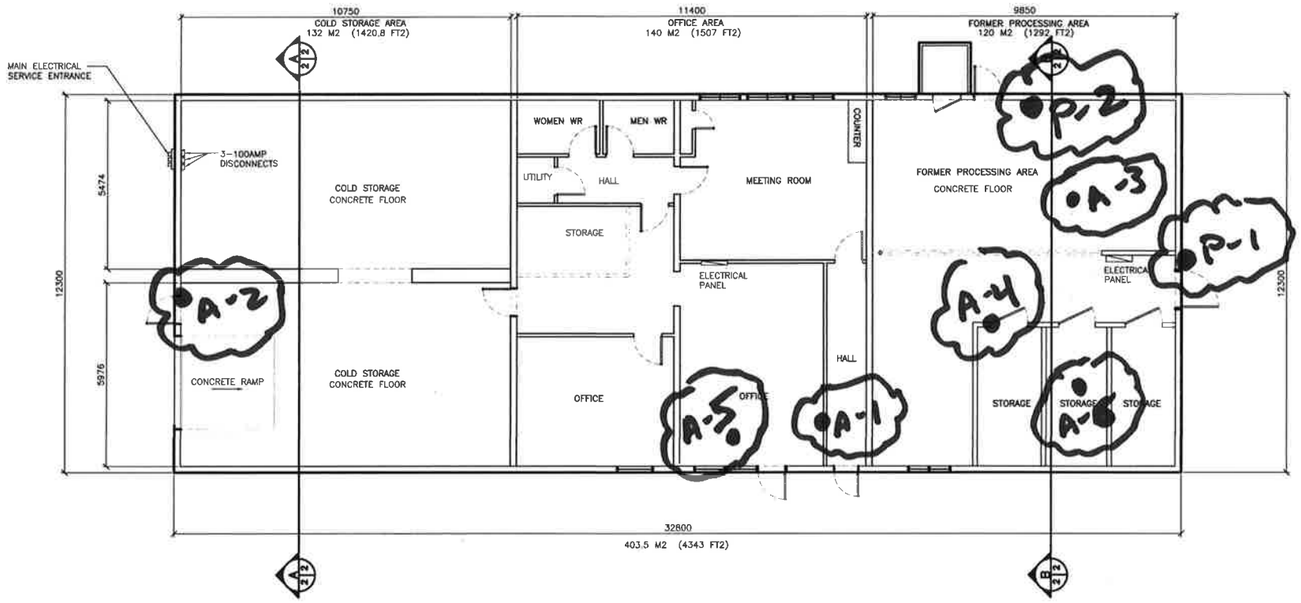
CEILING:
GYPROC FINISH IN MOST MEETING ROOM AND WASHROOM AREA'S.
WOOD SUB CEILING WITH DROP CEILING T BAR AND TILE IN OFFICE AREA.

WALLS:
WOOD STUD WALL WITH GYPROC/ PAINT FINISH.

FLOOR:
CONCRETE FLOOR (UNFINISHED)

CEILING:
STUCCO (PAINTED) , INSULATION (PAINTED), PLYWOOD (PAINTED)

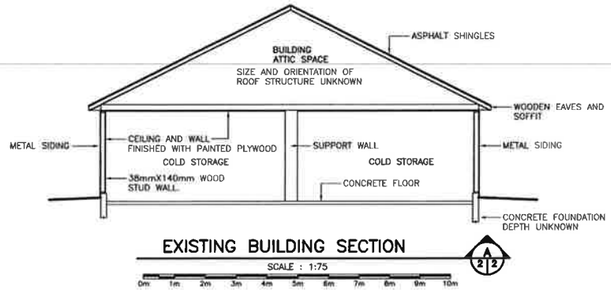
WALLS:
EXTERIOR WOOD STUD WALL WITH PLYWOOD/PAINT FINISH.
INTERIOR WOOD STUD WALL WITH WOOD FINISH (PAINTED)



EXISTING FLOOR PLAN – FACILITY #952 BAIT DEPOT

SCALE : 1:75

0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m

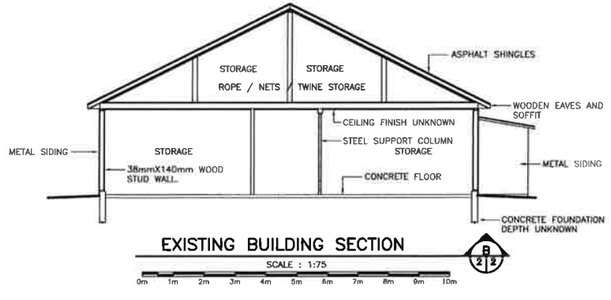


EXISTING BUILDING SECTION

SCALE : 1:75

A 2/2

0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m



EXISTING BUILDING SECTION

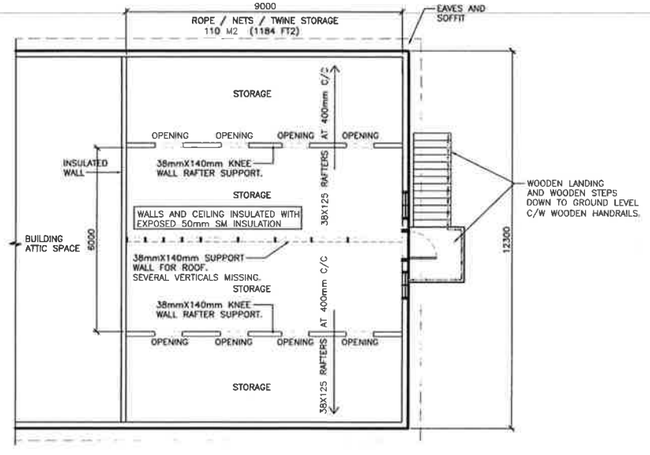
SCALE : 1:75

B 2/2

0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m

FLOOR:
PLYWOOD FLOOR PAINTED

CEILING/WALLS
50mm SM INSULATION OVER ENTIRE WALL AND CEILING



UPPER PARTIAL FLOOR PLAN

SCALE : 1:75

0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m

Appendix B
Photographs

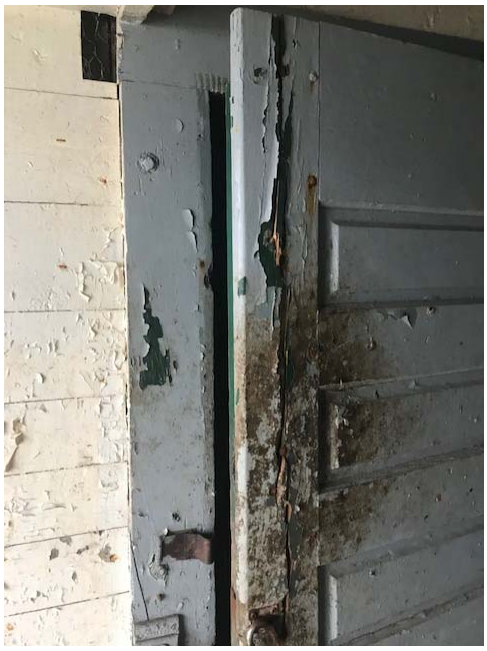
West side entrance (building exterior)

South side of building exterior

North side (building exterior)

East side (building exterior)

Interior view – former processing area



Paint peeling/flaking - trims on storage room door

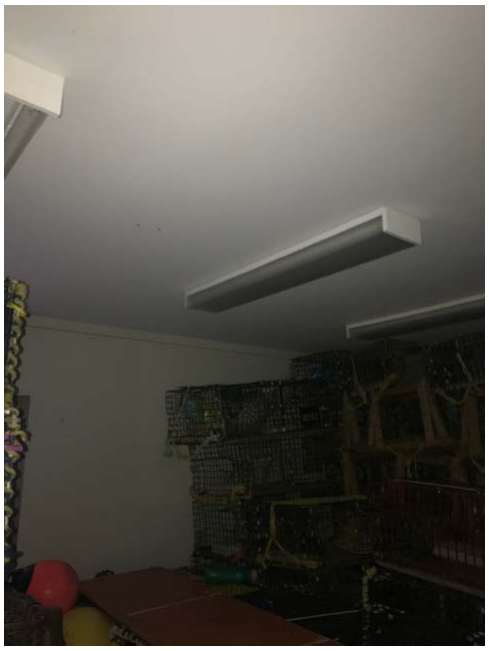
Storage room in former processing area

General view – former processing area

Floor tiles – office area

Mould on walls – office area

Mould on ceiling – office area



Typical fluorescent light fixtures

Cold storage area

Cold storage area

Storage Area – upper level

Storage Area – upper level

Roofing and vent

Appendix C
Laboratory Certificates

Maxxam
A Bureau Veritas Group Company

Your Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Your C.O.C. #: 6-037

Attention: NEIL HUNT

AFN Engineering Inc
29 Brad Gushue Crescent
St. John's, NL
CANADA A1H 0A3

Report Date: 2018/10/17
Report #: R5444804
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8Q6530
Received: 2018/10/09, 09:30

Sample Matrix: Bulk
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Asbestos by PLM - 0.5 RDL (1, 2)	7	N/A	2018/10/16	COR3SOP-00002	EPA 600R-93/116
Metals Paint Acid Extr. ICPMS	1	2018/10/17	2018/10/17	ATL SOP 00058	EPA 6020A R1 m
Metals Bulk Acid Extr. ICPMS	1	2018/10/15	2018/10/15	ATL SOP 00058	EPA 6020A R1 m
PCBs in Paint by GC/ECD (3)	1	2018/10/11	2018/10/15		EPA 8082A m
PCB Aroclor sum (paint)	1	N/A	2018/10/15	N/A	Auto Calc.

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Maxxam Analytics' Asbestos Laboratory is accredited by NVLAP for bulk asbestos analysis by polarized light microscopy, NVLAP Code 600163-0.

This report may not be reproduced, except in full, without the written approval of Maxxam Analytics. This report may not be used by the client to claim product endorsement by NVLAP, NIST or any other agency of the U.S. Government.

Maxxam Analytics' scope of accreditation includes EPA-600/M4-82-020: "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" and EPA-600/R-93/116: "Method for the Determination of Asbestos in Bulk Building Materials".

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Your Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Your C.O.C. #: 6-037

Attention: NEIL HUNT

AFN Engineering Inc
29 Brad Gushue Crescent
St. John's, NL
CANADA A1H 0A3

Report Date: 2018/10/17
Report #: R5444804
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B8Q6530
Received: 2018/10/09, 09:30

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Maxxam Analytics Mississauga
(2) P.O.B. - Percent of Bulk
(3) Non accredited test method. Best laboratory practices and all routine QC procedures were employed.

Encryption Key

Maxxam
17 Oct 2018 16:07:03

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Kavya Nair, Project Manager Assistant
Email: Knair@maxxam.ca
Phone# (902) 420-0203

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B8Q6530
Report Date: 2018/10/17

AFN Engineering Inc
Client Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Sampler Initials: NH

ELEMENTS BY ATOMIC SPECTROSCOPY (BULK)

Maxxam ID		HZA879			HZA880		
Sampling Date		2018/10/04			2018/10/04		
COC Number		6-037			6-037		
	UNITS	**P-1**	**RDL**	**QC Batch**	**P-2**	**RDL**	**QC Batch**
Metals							
Acid Extractable Lead (Pb)	mg/kg	40	5.0	5787219	10000	5.0	5782840
Acid Extractable Mercury (Hg)	mg/kg	<1.0	1.0	5787219			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B8Q6530
Report Date: 2018/10/17

AFN Engineering Inc
Client Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Sampler Initials: NH

POLYCHLORINATED BIPHENYLS BY GC-ECD (BULK)

Maxxam ID		HZA879		
Sampling Date		2018/10/04		
COC Number		6-037		
	UNITS	**P-1**	**RDL**	**QC Batch**
PCBs				
Aroclor 1016	mg/kg	<5.0	5.0	5778178
Aroclor 1221	mg/kg	<5.0	5.0	5778178
Aroclor 1232	mg/kg	<5.0	5.0	5778178
Aroclor 1248	mg/kg	<5.0	5.0	5778178
Aroclor 1242	mg/kg	<5.0	5.0	5778178
Aroclor 1254	mg/kg	<5.0	5.0	5778178
Aroclor 1260	mg/kg	<5.0	5.0	5778178
Calculated Total PCB	mg/kg	<5.0	5.0	5775589
Surrogate Recovery (%)				
Decachlorobiphenyl	%	14 (1)		5778178

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B8Q6530
Report Date: 2018/10/17

AFN Engineering Inc
Client Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Sampler Initials: NH

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

A-1

Maxxam ID: HZA872 Date Analyzed: 2018/10/16

	P.O.B	Sample Morphology	Asbestos	Other Fibres		Particulate
Layer 1	100	Homogeneous white/ off -white drywall joint compound	Not Detected	Cellulose	5%	Non-Fibrous

A-2

Maxxam ID: HZA873 Date Analyzed: 2018/10/16

	P.O.B	Sample Morphology	Asbestos	Other Fibres		Particulate
Layer 1	100	Homogeneous grey drywall	Not Detected	Cellulose	15%	Non-Fibrous
				Glass Fibres	1%	

A-3

Maxxam ID: HZA874 Date Analyzed: 2018/10/16

	P.O.B	Sample Morphology	Asbestos		Other Fibres	Particulate
Layer 1	100	Homogeneous black tar	**Chrysotile**	10%		Tar Non-Fibrous

A-4

Maxxam ID: HZA875 Date Analyzed: 2018/10/16

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous yellow foam	Not Detected		Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, "<0.50%". "Not Detected" indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd

Maxxam Job #: B8Q6530
Report Date: 2018/10/17

AFN Engineering Inc
Client Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Sampler Initials: NH

Asbestos Analytical Results

EPA/600R-93/116 by Polarized Light Microscopy

A-5

Maxxam ID: HZA876 Date Analyzed: 2018/10/16

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	98	Homogeneous off-white vinyl floor tile	Not Detected		Non-Fibrous
Layer 2	2	Homogeneous black mastic	Not Detected		Tar Non-Fibrous

A-6

Maxxam ID: HZA877 Date Analyzed: 2018/10/16

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous grey plaster	Not Detected		Non-Fibrous

A-7

Maxxam ID: HZA878 Date Analyzed: 2018/10/16

	P.O.B	Sample Morphology	Asbestos	Other Fibres	Particulate
Layer 1	100	Homogeneous black shingle	**Chrysotile** 3%	Cellulose 20%	Tar Non-Fibrous

The limit of quantitation is 0.50%, although asbestos may be qualitatively detected at concentrations less than 0.50%. Samples for which asbestos is detected at <0.50% are reported as trace, "<0.50%". "Not Detected" indicates that no asbestos fibres were observed.

Calibrated Visual Estimate (%)
Date Format : yyyy/mm/dd

Maxxam Job #: B8Q6530
Report Date: 2018/10/17

AFN Engineering Inc
Client Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Sampler Initials: NH

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	25.0°C

Vinyl floor tile can contain very fine asbestos fibres that are below the resolution limits of the PLM. Transmission Electron Microscopy (TEM) is recommended for confirmation of Not Detected results.

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B8Q6530
Report Date: 2018/10/17

AFN Engineering Inc
Client Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Sampler Initials: NH

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
5778178	RGE	Matrix Spike	Decachlorobiphenyl	2018/10/15		20 (1)	%	30 - 130
			Aroclor 1254	2018/10/15		26 (2)	%	30 - 130
5778178	RGE	Spiked Blank	Decachlorobiphenyl	2018/10/15		81	%	30 - 130
			Aroclor 1254	2018/10/15		101	%	30 - 130
5778178	RGE	Method Blank	Decachlorobiphenyl	2018/10/15		72	%	30 - 130
			Aroclor 1016	2018/10/15	<5.0		mg/kg	
			Aroclor 1221	2018/10/15	<5.0		mg/kg	
			Aroclor 1232	2018/10/15	<5.0		mg/kg	
			Aroclor 1248	2018/10/15	<5.0		mg/kg	
			Aroclor 1242	2018/10/15	<5.0		mg/kg	
			Aroclor 1254	2018/10/15	<5.0		mg/kg	
			Aroclor 1260	2018/10/15	<5.0		mg/kg	
5778178	RGE	RPD	Aroclor 1016	2018/10/15	NC		%	50
			Aroclor 1221	2018/10/15	NC		%	50
			Aroclor 1232	2018/10/15	NC		%	50
			Aroclor 1248	2018/10/15	NC		%	50
			Aroclor 1242	2018/10/15	NC		%	50
			Aroclor 1254	2018/10/15	NC		%	50
			Aroclor 1260	2018/10/15	NC		%	50
5782840	AWL	Matrix Spike [HZA880-01]	Acid Extractable Lead (Pb)	2018/10/15		NC	%	75 - 125
5782840	AWL	Spiked Blank	Acid Extractable Lead (Pb)	2018/10/15		95	%	75 - 125
5782840	AWL	Method Blank	Acid Extractable Lead (Pb)	2018/10/15	<5.0		mg/kg	
5782840	AWL	RPD [HZA880-01]	Acid Extractable Lead (Pb)	2018/10/15	0.047		%	35
5787219	BAN	Matrix Spike [HZA879-01]	Acid Extractable Lead (Pb)	2018/10/17		100	%	75 - 125
			Acid Extractable Mercury (Hg)	2018/10/17		114	%	75 - 125
5787219	BAN	Spiked Blank	Acid Extractable Lead (Pb)	2018/10/17		96	%	75 - 125
			Acid Extractable Mercury (Hg)	2018/10/17		104	%	75 - 125
5787219	BAN	Method Blank	Acid Extractable Lead (Pb)	2018/10/17	<5.0		mg/kg	
			Acid Extractable Mercury (Hg)	2018/10/17	<1.0		mg/kg	
5787219	BAN	RPD [HZA879-01]	Acid Extractable Lead (Pb)	2018/10/17	22		%	35
			Acid Extractable Mercury (Hg)	2018/10/17	NC		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

(2) Matrix Spike: results are outside acceptance limit. Analysis was repeated with similar results.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B8Q6530
Report Date: 2018/10/17

AFN Engineering Inc
Client Project #: AFN-6-037
Site Location: BAIT DEPORT - PORT AUX BASQUES
Sampler Initials: NH

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Banu Gurgen-Keough, Supervisor

Mike MacGillivray, Scientific Specialist (Inorganics)

Rosemarie MacDonald, Scientific Specialist (Organics)

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel: 902-420-0203 Toll-free: 800-565-7227 Fax: 902-420-8612 www.maxxamanalytics.com

Appendix B

SCH Project Environmental Risk Assessment

CEAA 2012 – SCH PROJECT ENVIRONMENTAL RISK ASSESSMENT

REPAIR, MAINTENANCE, AND MINOR WORKS (LOW RISK)

Repair and Maintenance: the action or process of restoring an existing physical work to unimpaired condition by simply replacing or fixing worn or damaged minor parts (e.g. deck boards, wheel guards, ladders, bollards, derricks, etc).

Minor Works: small works where environmental effects are similar, well understood, and mitigated as appropriate using established standard mitigation measures. These projects are non-complex and have minimal interaction with the environment (i.e. no impacts to fish habitat, species at risk, migratory birds, etc.). Examples include the following:

- Construction of small sheds
- Fence installation
- Resurfacing of upland parking areas
- Petroleum storage tank replacement
- Installation of signage
- Installation of water supply lines
- Installation of electrical supply lines
- Installation of monitoring equipment
- Installation of navigational aids

SCH has developed standard mitigation measures for low-risk projects (please refer to the next page). Regional DFO Operational Statements, Best Management Practices, Approved Work Practices, etc. may also exist for low-risk projects and are to be followed as appropriate.

Often, the only environmental risk for repair, maintenance, and minor works projects involves the collection and disposal of hazardous waste materials (e.g. used oil, treated timbers, paints and paint scrapings, batteries, metal scraps, solvents, etc.) and Small Craft Harbours policy is to dispose of such materials in accordance with applicable provincial regulations. Therefore, these works are considered **low-risk** with respect to possible significant adverse environmental effects when applicable regulations and standard mitigation measures are followed. A DFO Project Effects Determination is not required. However, this is a general rule only; the risk to the environment of a given project depends on a number of factors and requires the opinion and judgement of the SCH project manager and any other authorities involved in the project. The checklist below provides further indication of the likelihood of significant adverse environmental effects for a given SCH project under CEAA 2012.

YES	NO	
☐	☒	The project has the potential to cause effects that impact on Aboriginal peoples, such as their use of lands and resources for traditional purposes.
☐	☒	Project activities have the potential to affect fish or fish habitat, aquatic species, species at risk, migratory birds, or may require federal permits (e.g. *Fisheries Act*, *Species at Risk Act*, *Migratory Birds Convention Act*, *Navigable Waters Protection Act*, *Canadian Environmental Protection Act*, etc.)
☐	☒	The project is to be undertaken in proximity to sensitive species, habitats, or geographical areas.
☐	☒	The project may cause a change to the environment that occurs on the lands of another province or country.

If any of the above apply, the project cannot be considered low-risk and a DFO Project Effects Determination is required.

REPLACEMENT AND MODIFICATION (MEDIUM RISK)

Replacement: all or most of the parts of an existing physical work are being replaced.

Modification: means an alteration to an existing physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion.

Replacement and modification projects are of medium complexity and may involve interaction with the environment. Therefore, these projects are generally considered **medium-risk** with respect to significant adverse environmental effects. A DFO Project Effects Determination for medium-risk projects is required.

EXPANSION, DEMOLITION, AND NEW CONSTRUCTION (HIGH RISK)

Expansion: an increase in the exterior dimensions or the production capacity of an existing physical work.

Demolition: destruction and removal of an existing physical work.

New Construction: the construction of a new physical work in a location where none existed before.

Expansion, demolition, and new construction projects are of higher complexity and involve considerable interaction with the environment. Therefore, these projects are considered **high-risk** with respect to significant adverse environmental effects. A DFO Project Effects Determination for high-risk projects is required including in-depth analysis, possibly consulting appropriate external expertise, and developing unique mitigation measures.

RISK ASSESSMENT RESULT

Harbour Name: Port aux Basques (FO-W-2018-043)

Project Descriptions: The proposed project involves the complete demolition and removal of the existing DFO SCH Bait Depot Building located in Port aux Basques. Wastes from the demolition will be transported to an approved waste disposal site. Upon removal of the structure, the uplands will be restored to natural contours. It is the proponents' responsibility to ensure all wastes are properly disposed of, pursuant to applicable federal/provincial regulations.

Based on the above, the proposed SCH projects are:

- ☐ Low Risk (proceed with the project in accordance with all applicable regulations and SCH Standard Mitigation Measures for Repair, Maintenance, and Minor Works)
- ☒ Medium Risk or High Risk (carry out the project effects determination and complete the DFO Project Effects Determination Template, refer to the guidance document *PROJECT EFFECTS DETERMINATION PROCESS FOR SMALL CRAFT HARBOURS PROJECTS*)

Approved by: Natasha Warren Date: November 15, 2018 Signature : Natasha Warren

SCH STANDARD MITIGATION MEASURES FOR REPAIR, MAINTENANCE, AND MINOR WORKS

The following Standard Mitigation Measures apply to SCH Repair, Maintenance, and Minor Works projects. These measures are to be incorporated into a project in order to avoid any potential significant adverse environmental effects. Applicable measures should be included in the project specifications, contract, lease or licence documents, and monitored on site for compliance. Regional DFO Operational Statements, Best Management Practices, Approved Work Practices, etc. may also exist for low-risk projects and are to be followed as appropriate

GENERAL

1. Ensure compliance with all federal legislation and provincial, territorial, municipal and international laws codes, and standards, as applicable.
2. Notify any private businesses on or adjacent to the project site prior to the commencement of the project.
3. Ensure that all waste material will be disposed of in an environmentally responsible manner, and in accordance with provincial, territorial, municipal legislation.
4. Ensure that all trucks are road worthy, and that drivers observe all speed and weight limits on site.
5. Ensure that all construction equipment is in good working order and careful maintenance and monitoring of all equipment be carried out to minimize the risk of spills or leaks of petroleum-based products.
6. Ensure Contractor has an emergency response plan to control any fuel spills, which will include having on site appropriate spill response equipment readily available for immediate deployment. All spills and releases must be reported to the relevant federal, provincial, or territorial government departments. The emergency response plan must include the appropriate phone number for reporting releases in the area as well as phone numbers for local authorities (Police or Fire departments).
7. Ensure Contractor has on hand emergency phone numbers for the Harbour Authority and any fish processors or buyers or other operators to alert them to possible contamination of the harbour should a spill occur, so as to shut down or divert water intakes and sources.
8. Ensure care is taken to observe for evidence of archaeological deposits while work is being completed. Stop work if evidence shows a potential archaeological artifact or deposit and notify a provincial representative before proceeding.

LAND

1. Keep the clearing of riparian vegetation necessary for access to the construction site to a minimum. Use existing trails and roads wherever possible as access routes to avoid disturbance to the riparian vegetation. Preserve trees, shrubs and grasses near the shoreline.
2. Vegetate any disturbed areas by planting and seeding preferably with native trees, shrubs or grasses and cover such areas with mulch to prevent erosion and to help seeds germinate. If there is insufficient time remaining in the growing season, the site should be stabilized (e.g., cover exposed areas with erosion control blankets to keep the soil in place and prevent erosion) and vegetated the following spring.
3. Maintain effective sediment and erosion control measures until re-vegetation of disturbed areas is achieved.

WATER

1. Conduct work in a manner that prevents the release of debris (e.g. cribbing, ballast, sediment, etc.) or any deleterious substance into any body of water.
2. Conduct work during low wind, wave and tidal conditions.
3. Use bank stabilization techniques in conjunction with sedimentation/erosion controls where appropriate to minimize impacts due to run off.
4. Use concrete that is pre-cast and cured away from the water if possible. Where this is not feasible pour concrete in place only using industry approved techniques and applicable standards (e.g., Tremie Process in accordance with CSA A23.1) and all available measures (e.g., watertight molds, sheet piles, properly sealed chutes and funnels, site dewatering, wave and current protection, etc) to ensure there is no seepage/spillage of concrete or concrete residues into the marine environment.
5. Cut, seal and stain all lumber away from the water using only products that are approved for use by the Pest Management Regulatory Agency, Health Canada. All sealed and stained lumber should be completely dry before being used near water.
6. Refuel equipment at least 30 meters from any watercourse. Wash and service machinery and store fuel and other materials for the machinery away from the water to prevent any deleterious substance from entering the water.
7. Restore shoreline or banks to original condition if any disturbance occurs.
8. Stabilize any waste materials removed from the work site to prevent them from entering the water body. This could include ensuring materials are placed above the HWM, covering dredge material disposal location with biodegradable mats or tarps or planting them with preferably native grass or shrubs.
9. Ensure that there will be no adverse impact on water quality associated with his operations and activities by: ensuring that there will be no debris dumped or left floating in a watercourse; taking necessary action to prevent any fine materials from entering a watercourse; using clean aggregates and stone, free from organics, mud, and excessive fines in the work, where such materials may come in contact with a watercourse; taking all necessary measures to prevent surface runoff of fine materials into any watercourse.
10. Ensure that there will be no negative impacts on any water sources at the harbour (e.g. wells, water intakes, etc.).

AIR

1. Ensure that there will no excessive noise generated from the project outside normal working hours for the duration of the project.
2. Ensure that there will not be any excessive dust produced from vehicles travelling on gravel surfaces that will have an impact on adjacent residences and businesses.

NATURAL SYSTEMS

1. Time the work to prevent disruption to sensitive fish life stages by adhering to any appropriate fisheries timing windows.
2. Ensure that concentrations of seabirds, waterfowl, or shorebirds not be approached when accessing the construction site, accessing wharves, or transporting supplies.
3. Ensure that wetlands or other sensitive coastal habitats (i.e., any area in which plant or animal life or their habitats are either rare or especially vulnerable) be avoided and not used as staging /storage areas.
4. If a nest is found during vegetation clearing activities, the nest site and neighbouring vegetation must be left undisturbed until nesting is completed. Construction activities must also be minimized in the immediate area until nesting is completed.
5. Provide upon request, a record of assurance (i.e., dates of cleaning, type of cleaning, location of last mobilization, type of cleaning material used, etc.) indicating that the mitigation measures, as per DFO guidelines for invasive species, has occurred.