



Project #: R.065695.006

**Iqaluit, Nunavut
DFO Bunkhouse Building 1074,
Hazardous Material Abatement
Solicitation # E0208-151273/A**

ADDENDUM #2 February 19, 2015
Specifications



Public Works and Government Services Canada
Project No. R.065695.006 - Issued For Tender
Hazardous Materials Abatement and Building Demolition -
DFO Bunkhouse Building 1074, Iqaluit, NU

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Appendix A Supporting Documentation

1 GENERAL

1.01 PRECEDENCE

- .1 Division 1 sections take precedence over technical specification sections in other Divisions of this specification.

1.02 EXISTING CONDITIONS

- .1 Existing Buildings
 - .1 The DFO Bunkhouse (Building 1074) present on site is to be demolished.
- .2 Existing Services
 - .1 All utilities previously servicing the building have been disconnected.
 - .2 The site was supplied with drinking water and sewage disposal via the underground utilidor.
 - .1 The sewer and water utilidor location will have to be confirmed in the field prior to remedial works.
 - .2 Closing the utilidor system is the responsibility of the contractor.
 - .3 The site is supplied with electricity via an overhead cable from a hydro pole. Power to the building has been de-energized.
- .3 Existing Routes
 - .1 Access to the site is gained from
 - .1 Allanngua Road situated north and directly adjacent to the Site.
 - .2 An unnamed gravel roadway/trail which enters the Site from the south.
- .4 Special Requirements
 - .1 Submit Schedule in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
 - .2 No work adjacent to open water may commence until appropriate measures are taken to control sediment releases in water as prescribed under Section 01 41 00 - Regulatory Requirements.

1.03 BACKGROUND INFORMATION

- .1 The former DFO Bunkhouse (Building 1074) is located in Iqaluit, Nunavut, and is composed of two (2) single-storey structures connected by a central corridor. The structure was originally constructed circa 1962 for the Canadian Coast Guard (CCG) as a seasonal bunkhouse building. There have been several renovations completed since that time to suit the needs of the users. The entire building is vacant. The building is constructed of wood framing with hardwood exterior siding.
- .2 The former DFO Bunkhouse building (the Site) is located within Iqaluit, NU.
- .3 The Site is bounded to the north by Allanngua Road, to the east with retail uses, to the west by the Iqaluit Airport, and south

- by Frobisher Bay.
- .4 Access points at the site will be from Allanngua Road.
- .5 The results of previous assessments identified potential hazards remaining on site which include, but are not limited to, the following:
 - .1 Asbestos-containing materials.
 - .2 Lead paint.
 - .3 Mercury-containing materials.
 - .4 Polychlorinated biphenyl (PCB)-containing material.
- .6 Other hazards that may be encountered at the site include, but are not limited to:
 - .1 Petroleum hydrocarbon contaminated soil
 - .2 Buried debris
 - .3 Site conditions
- .7 Supporting Documents include, but are not limited to:
 - .1 *Final - Designated Substance Survey, Bunkhouse Building - Department of Fisheries and Oceans, Iqaluit, Nunavut, prepared by Franz Environmental Inc., dated 2013.*
 - .2 *Demolition Waste Survey, Department of Fisheries and Ocean Canada. Bunkhouse Building No. 1074, Iqaluit, Nunavut, prepared by SENES Consultants, dated revised January 2015.*
 - .3 *Investigation and Supplementary Testing for Designated Substances, DFO Bunkhouse Building 1074, Iqaluit, NU, PWGSC Project Number: R.065695.006, prepared by DCS, dated January 2015.*

1.04 DESCRIPTION OF WORK

- .1 Work for this Contract at the Building 1074 - Former DFO Bunkhouse comprises the activities including but not limited to, the following:
 - .1 Mobilization and demobilization of personnel, equipment, support facilities and materials required to complete the Work as often as required.
 - .2 Upgrading and Maintenance of on-site access routes and laydown areas, as required, to facilitate remediation activities and temporary storage.
 - .3 Locating the underground services including but not necessarily limited to the utilidor.
 - .4 Protecting the underground utilidor
 - .1 The utilidor is to remain.
 - .5 Preparing a site-specific health and safety plan to include PPE, designated substances abatement, solid hazardous waste material management.
 - .6 Conducting a designated substances abatement program at the building on site.
 - .7 Removal and off-site disposal of hazardous materials generated during the abatement program outside of Nunavut.
 - .8 Provision of the following site support services:
 - .1 Provision and maintenance of Departmental Representative's vehicles, as specified.
 - .9 Transportation services in Iqaluit for Departmental Representative and Departmental Representative Authorized Personnel.
 - .10 Communication services for Contractor and Departmental

- Representative
- .11 Demolition of building structure.
- .12 Collecting, segregating and consolidation of non-hazardous waste and debris from across the site as well as transportation and disposal outside of Nunavut.
- .13 Re-grading and re-shaping of site as required.
- .14 Provision of the following site support services:
 - .1 Safety, fire protection, and medical services, as specified in Section 01 35 29.14 - Health and Safety for Contaminated Sites.
 - .2 Worker Orientation Seminar, as specified below in 1.16
- .15 Segregating and packaging of Hazardous Materials from across the site as well as transportation and disposal outside of Nunavut. Hazardous Materials may include, but are not limited to:
 - .1 Asbestos-containing materials (e.g. vinyl sheet flooring and roofing).
 - .2 Mercury-containing materials (e.g. thermostats, fluorescent lamps)
 - .3 Lead-containing materials (e.g. paint);
 - .4 PCB-containing materials (e.g. light ballasts).

1.05 DEFINITIONS

- .1 Departmental Representative: Within the context of these Specifications, the term Departmental Representative refers to the person exercising the roles and attributes of Canada under the contract.
- .2 Departmental Representative's Authorized Personnel: Within the context of these Specifications, the term Departmental Representative's Authorized Personnel refers to personnel appointed by Departmental Representative or authorized on site by Departmental Representative. Departmental Representative's Authorized Personnel provide recommendations/technical guidance to Departmental Representative as required, for the enforcement of these specifications.
- .3 Contractor: Contractor retained to undertake the abatement and demolition work as defined within the context of these specifications.
- .4 Contractor's Site Superintendent: Contractor's resident site representative, who is authorized to make decisions on behalf of Contractor.
- .5 The word "provide" means supply and install, operate, submit or any other procedure necessary to complete the work as intended.

1.06 SUBMITTALS

- .1 All submittals in accordance with Section 01 33 00 - Submittal Procedures. A submittal list, for reference purposes only, is attached at the rear of the document.

1.07 ON-SITE DOCUMENTS

- .1 Maintain at job site, one copy each of the following:
 - .1 Contract drawings.
 - .2 Specifications.
 - .3 Requests for Clarification and responses.
 - .4 Addenda.
 - .5 Change Orders.
 - .6 Other modifications to Contract.
 - .7 Previous site reports.
 - .8 Copy of approved Work Schedule.
 - .9 Manufacturers' installation and application instructions.
 - .10 Material and Safety Data Sheets.
 - .11 Site Specific Health and Safety Plan. Response Plans including:
 - .1 Spill Contingency Plan.
 - .2 Emergency Response Plan.
 - .12 Labour conditions and wage Schedules.
 - .13 Up-to-date record drawings.
 - .14 All applicable Territorial permits and licenses.
 - .15 All applicable Federal permits and licenses.
 - .16 All applicable municipal permits and licenses
 - .17 Workers' Safety and Compensation Commission (WSCC) Notification of Project.
 - .18 Letter of Good Standing with WSCC.
 - .19 Other documents as specified.

1.08 WORK SCHEDULE

- .1 Work is to be completed between the months of June and August.
- .2 Provide and maintain Work Schedule in accordance with instructions of Section 01 32 16.07 Construction Progress Schedules - Bar (GANTT) Chart.
- .3 Keep the Departmental Representative advised of planned Work activities in accordance with the instructions of Section 01 33 00 - Submittal Procedures.

1.09 CONTRACTOR USE OF SITE

- .1 Use of site is unrestricted until substantial performance.
- .2 Coordinate use of premises under direction of Departmental Representative.

1.10 EXAMINATION OF SITE

- .1 Prior to mobilization of equipment and supplies, check the field conditions including buried and above ground utilities, to ensure that the correct equipment, and supplies are being mobilized to site for the execution of the Work, and notify Departmental Representative in writing, of all matters which could prejudice proper execution of the Work. Provide a minimum of three (3) days notice to Departmental Representative prior to examining the site.

- .2 Commencement of mobilization constitutes acceptance of existing conditions, and verification of dimensions.

1.11 DEPARTMENTAL REPRESENTATIVE FURNISHED ITEMS

- .1 Not Used

1.12 PERMITS AND LICENSES

- .1 Be responsible for obtaining and paying for permits, licenses and approvals associated with the site work.
- .2 Register, obtain and pay for all required licenses and permits for individual tradesmen employed for Work as referenced in the various Sections of the Contract Specifications for the duration of employment.
- .3 Obtain and pay for any other licenses or permits required to perform the activities required on site.
- .4 Provide supplemental information to the regulators for any necessary license amendments or reporting requirements.
- .5 Pay all costs associated with complying with the requirements for the permits and licenses noted in the above clauses.

1.13 SITE SUPERVISION

- .1 Designate Contractor's Site Superintendent to be on site at all times during construction, to have full authority to make decisions for Contractor, to be knowledgeable of the requirements of the contract, and to act upon Departmental Representative's instructions.
- .2 Notify Departmental Representative one (1) week in advance of Site Superintendent change.

1.14 ADDITIONAL DRAWINGS

- .1 Departmental Representative may furnish additional drawings to assist with proper execution of the Work. These drawings will be issued for clarification only. Such drawings have the same meaning and intent as if they were included with plans referred to in Contract documents.

1.15 WORKER ORIENTATION SEMINAR

- .1 Develop, prior to the start of Work, course material for a Worker Orientation Seminar. The outline of this seminar will be approved by Departmental Representative and is intended to describe the abatement activities at the site, and provide instruction for the applicable health, safety, and environmental policies and regulations as related to the site Work activities.
- .2 The Worker Orientation Seminar will be conducted at the beginning of the abatement and demolition activities (i.e. the first morning of the abatement work site activities).

- .3 Submit two (2) hard copies and one (1) electronic copy of the Worker Orientation Seminar course material to Departmental Representative for review at least one (1) week prior to the seminar. Include information describing the facility to be used for conducting the seminar.
- .4 The Orientation Course will address, but is not necessarily limited to, the following topics:
 - .1 Project Communication
 - .1 Roles of Departmental Representative.
 - .2 Roles of Contractor and Contractor's authorized representatives.
 - .3 Lines of Project communication.
 - .2 Demolition Activities (Scope of Work).
 - .1 Utility decommissioning.
 - .2 Demolition of structure.
 - .3 Collection, containerization, and transportation for disposal of non-hazardous waste and debris.
 - .4 Asbestos abatement.
 - .5 Lead Abatement
 - .6 Collection, containerization, and transportation for disposal of hazardous waste material.
 - .7 Re-grading and/or reshaping the site
 - .3 Overview of the Site
 - .4 Project Organization/Schedule/Administration
 - .1 Personnel policies.
 - .2 Supervisory reporting relationships.
 - .3 Communication.
 - .4 Work Schedules and hours.
 - .5 Site rules.
 - .5 Environmental Issues and Protection Procedures
 - .1 Climate.
 - .2 Land use.
 - .3 Water.
 - .4 Dust suppression.
 - .5 Heritage resources.
 - .6 Spill contingency plans/procedures.
 - .7 Training activities.
 - .6 General Site Specific Health and Safety
 - .1 Team Work.
 - .2 Work attitudes/productivity.
 - .3 Anti-Harassment Policy.
 - .4 First aid procedures.
 - .5 Protective equipment and clothing.
 - .6 Safe operation of equipment and tools.
 - .7 WHMIS requirements.
 - .8 Climate.
 - .9 Work Specific Task Requirements
 - .10 Asbestos abatement.
 - .11 Lead abatement.
 - .12 Demolition and material disposal.
 - .13 Transportation of Dangerous Goods (TDG).
 - .14 Environmental mitigation procedures.
 - .15 Emergency spill response training.
- .5 On the first morning of the project, conduct Worker Orientation Seminars for site Workers (Contractor's Workforce), and

Departmental Representative based on the course material approved by Departmental Representative.

- .6 Each person on site will attend the orientation seminar. Require each attendee to sign a record of attendance upon completion of the seminar. Retain, for Departmental Representative's review at any time, this record of attendance.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used

3 EXECUTION

3.01 NOT USED

- .1 Not Used

END OF SECTION

1 GENERAL

1.01 DEFINITIONS

- .1 Project Start-Up Teleconference: conference call to be held within ten (10) days after Contract Award and to include the Contractor and Departmental Representatives.
- .2 Pre-Construction Meeting: teleconference meeting to be held prior to Contractor Mobilization to include the Contractor and Departmental Representatives.
- .3 Pre-Mobilization Site Visit: Contractor's visit to the site to check field conditions and obtain actual conditions required to ensure correct execution of the Work prior to site mobilization.
- .4 Tailgate Meeting: meeting to be held on-site daily during the project and to include Contractor, construction staff and Departmental Representative.
- .5 Pre-Demobilization Meeting (Final Walk Over): meeting to be held on site and to include the Contractor and Departmental Representative. Meeting to be held prior to the demobilization of personnel, machinery, and equipment.

1.02 ADMINISTRATIVE

- .1 Responsibilities of Departmental Representative
 - .1 Schedule and administer Project meetings throughout the progress of the Work.
 - .2 Prepare agenda for meetings unless otherwise specified.
 - .3 Distribute written notice of each meeting five (5) days in advance of meeting date to the contractor.
 - .4 Preside at meetings unless otherwise specified.
 - .5 Record the meeting minutes unless otherwise specified. Include significant proceedings and decisions. Identify actions by parties.
 - .6 Reproduce and distribute copies of minutes within three (3) days after meetings and transmit to meeting participants and affected parties not in attendance.
- .2 Responsibilities of Contractor
 - .1 Provide physical space and make arrangements for meetings.
 - .2 Representative of Contractor, Sub-Contractor and suppliers attending meetings will be qualified and authorized to act on behalf of party each represents.
- .3 Authorities Having Jurisdiction
 - .1 Interested persons representing Authorities Having Jurisdiction (AHJ) may also attend meetings.

1.03 PROJECT START-UP TELECONFERENCE MEETING

- .1 Within ten (10) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities. The meeting will be a teleconference between all parties in attendance.
- .2 Departmental Representative, Contractor, major Sub-Contractors, field inspectors and supervisors will be in attendance.
- .3 Establish time and location of meeting and notify parties concerned minimum five (5) days before meeting.
- .4 Departmental Representative will chair the meeting and take minutes. Meeting will be informal and agenda to include the following:
 - .1 Appointment of official representative of participants in the Work.
 - .2 Preliminary Schedule of Work.
 - .3 Preliminary Schedule of submission of Work Plan and Cost Breakdown and other submissions.
 - .4 Preliminary requirements for temporary facilities, site security, equipment and proposed methods of mobilization and demobilization.
 - .5 Set-up of Pre-Construction Meeting.

1.04 PRE-CONSTRUCTION MEETING

- .1 Request a teleconference meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.
- .2 Departmental Representative, Contractor, major Sub-Contractors, and supervisors will be in attendance.
- .3 Establish time of meeting and notify parties concerned minimum five (5) days before meeting.
- .4 Incorporate mutually agreed variations to Contract Documents into Agreement, prior to signing.
- .5 Agenda to include:
 - .1 Schedule of Work: in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.
 - .2 Submittal requirements in accordance with Section 01 33 00 - Submittal Procedures, and Section 01 78 00 - Closeout Submittals.
 - .3 Schedule of submission in accordance with Section 01 33 00 - Submittal Procedures including but not limited to:
 - .1 Specific Health and Safety Plan;
 - .1 Emergency Response Plan;
 - .2 Spill Contingency Plan.
 - .2 Equipment to be used by Contractor.
 - .3 Location of equipment and proposed methods for mobilization and demobilization.
 - .4 Requirements for temporary facilities (e.g fencing).
 - .5 Delivery Schedule of specified equipment.
 - .6 Site safety.

- .7 Proposed changes, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.
- .8 Departmental Representative provided products.
- .9 Monthly progress claims, administrative procedures, photographs, hold backs.
- .10 Appointment of inspection and testing agencies or firms.
- .11 Regulatory Issues.
- .12 Any other business.

1.05 PRE-MOBILIZATION SITE VISIT

- .1 Prior to mobilization, perform a Pre-Mobilization Site Visit to check field conditions and obtain actual conditions required to ensure correct execution of the Work. Notify Departmental Representative in writing by submitting a Pre-Mobilization Site Visit Report within seven (7) days of completing the visit, of all matters which could prejudice proper execution of the Work.

1.06 TAILGATE MEETINGS

- .1 Contractor to preside over daily tailgate meetings with all construction staff and document minutes with daily reporting requirements.
- .2 Daily tailgate meeting will focus on health and safety issues, and the schedule of the upcoming day.

1.07 PRE-DEMOBILIZATION MEETING (FINAL WALK OVER)

- .1 A meeting of parties in contract to discuss the demobilization and close-out, and to resolve issues arising from same.
- .2 Departmental Representative, Contractor, major Sub-Contractors, field inspectors and supervisors will be in attendance.
- .3 Departmental Representative will preside.
- .4 Agenda may include:
 - .1 Health, safety and security issues.
 - .2 Schedules and action Contractor plans for demobilization.
 - .3 Confirmation of quantities.
 - .4 Summary of interactions with Authority Having Jurisdiction (AHJ).
 - .5 Submittals relating to the transportation and disposal of hazardous materials.
- .5 Departmental Representative will record minutes of meetings and circulate to attending parties and affected parties not in attendance within seven (7) days after meeting.

1.08 SUBMITTALS

- .1 Submit Preliminary Construction Schedule to Departmental Representative within five (5) working days of Contract Award which is to also include a chart for planning, monitoring and reporting of Project progress.

- .2 Submit requests for payment for review, and for transmittal to Departmental Representative.
- .3 Submit requests for interpretation of Contract Documents, and obtain instructions through Departmental Representative.
- .4 Submit and process substitutions through Departmental Representative.
- .5 Deliver closeout submittals for review to Departmental Representative.
- .6 Provide submittals to the Departmental Representative for review.
Include submittals as noted in Section 01 33 00 - Submittal Procedures.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used

3 EXECUTION

3.01 NOT USED

- .1 Not Used

END OF SECTION

1 GENERAL

1.01 DEFINITIONS

- .1 Activity: element of Work performed during course of Project. Activity normally has expected duration, and expected cost and expected resource requirements. Activities can be subdivided into tasks.
- .2 Bar Chart (GANTT Chart): graphic display of Schedule-related information. In typical bar chart, activities or other Project elements are listed down left side of chart, dates are shown across top, and activity durations are shown as date-placed horizontal bars. Generally Bar Chart should be derived from commercially available computerized Project management system.
- .3 Baseline: original approved plan (for Project, Work package, or activity), plus or minus approved scope changes.
- .4 Construction Work Week: Monday to Sunday, inclusive, will provide seven (7) days Work week and define Schedule calendar working days as part of Bar (GANTT) Chart submission.
- .5 Duration: number of Work periods (not including holidays or other nonworking periods) required to complete activity or other Project element. Usually expressed as workdays or workweeks.
- .6 Milestone: significant event in Project, usually completion of major deliverable.
- .7 Project Schedule: planned dates for performing activities and the planned dates for meeting milestones. Dynamic, detailed record of tasks or activities that must be accomplished to satisfy Project objectives. Monitoring and control process involves using Project Schedule in executing and controlling activities and is used as basis for decision making throughout Project life cycle.

1.02 REQUIREMENTS

- .1 Ensure detailed Schedule is practical and remains within specified Contract duration.
- .2 Plan to complete Work in accordance with prescribed milestones and time frame.
- .3 Provide and maintain a work schedule showing anticipated progress stages and final completion of work within time period required by Contract.
- .4 Ensure that it is understood that Award of Contract or time of beginning, rate of progress, Interim Certificate and Final Certificate as defined times of completion are of essence of this contract.
- .5 Prepare the schedule using critical path analysis techniques, showing

resource loading. Identify tasks that lie on the critical path. Show float where possible.

1.03 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit Project Schedule to Departmental Representative within five (5) working days of receipt of acceptance.

1.04 PROJECT SCHEDULE

- .1 Develop detailed Project Schedule.
- .2 Ensure detailed Project Schedule includes as a minimum milestone and activity types as follows:
 - .1 Award.
 - .2 Permits.
 - .4 Mobilization.
 - .5 Site Activities (expand as required to suit Contractor's task breakdown).
 - .6 Interim Certificate of Completion.
 - .7 Demobilization.
 - .8 Closeout Submittals.
 - .9 Final Certificate of Completion.
- .3 Submit preliminary construction progress Schedule in accordance with Section 01 33 00 - Submittal Procedures to Departmental Representative coordinated with Departmental Representative's Project Schedule.
- .4 After review, revise and resubmit Schedule to comply with revised Project Schedule.
- .5 During progress of Work revise and resubmit as directed by Departmental Representative.

1.05 PROJECT SCHEDULE REPORTING

- .1 Update Project Schedule on a daily basis reflecting activity changes and completions, as well as activities in progress.
- .2 Include as part of Project Schedule a narrative summary report identifying Work status to date, comparing current progress to baseline, presenting current forecasts, defining problem areas, anticipated delays and impact with possible mitigation.
- .3 Submit with Monthly Invoice the following:
 - .1 Health and safety related performance measures, as required.

1.06 PROJECT MEETINGS

- .1 Discuss Project Schedule at regular site meetings, identify activities that are behind Schedule and provide measures to regain slippage. Activities considered behind Schedule are those with projected start or

completion dates later than current approved dates shown on baseline Schedule.

- .2 Weather related delays with their remedial measures will be discussed and negotiated.

1.07 COST AND QUANTITY CONTROL

- .1 Provide a Contract Work Breakdown Structure (CWBS) based on Contractor's Cost Breakdown and any modifications requested by Departmental Representative as follows:
 - .1 CWBS to be an organization of the Work to be performed, services to be provided and data to be submitted by Contractor, as well as payments to be made to Contractor under the terms of the Contract.
 - .2 The CWBS to clearly define the Work elements of each item of the CWBS.
 - .3 The CWBS to include a breakdown of pay items included under Item BOPC -1, Balance of Project Costs in the Basis of Pricing Schedule. All lump sum pay items included in the Basis of Pricing Schedule to also be included in the CWBS.
 - .4 Prepare the CWBS in computerized spreadsheet format compatible with the most recent release of Microsoft Excel software. Provide CWBS in hard copy format.
 - .5 Submit the CWBS within 15 days following contract award date.
- .2 Equipment and Material Control:
 - .1 Record data on status of construction material and equipment and report upon Departmental Representative's request.
- .3 Manpower Performance Measures:
 - .1 Record and report manpower listing for each company employed under this Contract, including Sub-Contractors, detailing daily man-hours during the current month and cumulative total to date and report upon Departmental Representative's request.
 - .2 Provide statistics related to lost time accidents upon Departmental Representative's request.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used

3 EXECUTION

3.01 NOT USED

- .1 Not Used

END OF SECTION

1 GENERAL

1.01 DEFINITION

- .1 Not used.

1.02 ADMINISTRATIVE

- .1 Submit to Departmental Representative submittals listed for review. Submittal list is bound into specification section and is for information only. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.
- .2 Work affected by submittal is not to proceed until review is complete.
- .3 Present submittals in SI Metric units.
- .4 Where items or information is not produced in SI Metric units, converted values are acceptable.
- .5 Review submittals prior to submission to Departmental Representative. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific Project will be returned without being examined and will be considered rejected.
- .6 Notify Departmental Representative, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.
- .7 Contractor's responsibility for errors and omissions in submission is not relieved by Departmental Representative's review of submittals.
- .8 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Departmental Representative review.
- .9 Keep one reviewed copy of each submission on site.

1.03 PHOTOGRAPHS

- .1 Provide digital photos in "Joint Photographic Experts Group" (.jpg) format for Progress Photographs and Final Photographs.
- .2 Digital photographs to have a minimum of 2,592 x 1,944 pixel (5 Megapixel) resolution.

- .3 Progress and Final Photographs to be submitted on one compact disc (CD). Provide two (2) copies of the Photograph CD.
- .4 Printed (colour) copies of digital photographs:
 - .1 Size: 100 mm x 125 mm.
 - .2 Two digital photographs per 215 x 280 mm page.
 - .3 Pages to be white, of photographic quality paper and to be three-hole punched, ready for insertion into a three-ring binder. Binder(s) to be vinyl, hard-covered, 3 inch D ring, sized for 215 x 280 mm paper, with spine pocket.
- .5 Identification: Typewritten or generated by computer, the name and number of the Project on cover and spine of binder and CD case. Each photograph to be labelled with the digital photo file name positioned so as to not interfere with the view of the main activity or feature presented on the photograph. Also provide a description of each photograph in photographic log format. Photographic log to be included with each computer disk, CD, and binder. Description to include:
 - .1 Digital photograph file name;
 - .1 Name and description of feature.
 - .2 View direction.
 - .3 Date of exposure.
 - .4 GPS location.
 - .5 Before and after photographs of location.
- .6 Quantity: Provide sufficient number of photographs to adequately describe the Work activities carried out. A minimum of two photographs taken from two viewpoints are to be provided for each activity.
- .7 Provide two sets in two binders of digital photographs.
- .8 Submit final photographs prior to final progress payment request.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used

3 EXECUTION

3.01 NOT USED

- .1 Not Used

END OF SECTION

Specification Section	Description	Date
01 31 19	Construction Schedule	Within five (5) days of Contract Award
01 11 00	Worker Orientation Course Seminar	One (1) week prior to site work.
01 31 19	Pre-Mobilization Site Visit Report	Within seven (7) days of completing the visit
01 33 00	Final Photographs	Prior to final Progress Claim Request
01 35 29.14	Site Specific Health and Safety Plan	Within fifteen (15) days of Contract Award
01 35 29.14	Emergency Response Plan	As Part of the Site Specific Health and Safety Plan
01 35 29.14	Spill Contingency Plan	As Part of the Site Specific Health and Safety Plan
01 35 29.14	Fire Safety Plan	As Part of the Site Specific Health and Safety Plan
01 35 29.14	Proof of PPE certification (including Respiration Fit Testing Requirement)	Prior to Work Activities
01 35 29.14	Report Accidents	Verbal report immediately followed by written report in 24 hours
01 77 00	Certification of Completed Work	As Work is Completed
01 78 00	Project Records	As Required

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 02 82 00.03 - Asbestos Abatement - Maximum Precautions
- .2 Section 02 83 11 - Lead-Based Paint Abatement - Intermediate Precautions
- .3 Section 02 84 00 - Polychlorinated Biphenyl Remediation

1.02 REFERENCES

- .1 See Section 01 41 00 - Regulatory Requirements

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submittals: in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Submit, prior to start of work, plan detailing management of hazardous wastes.
- .3 Submittals for Progress Meetings: make submittals at least 24 hours prior to scheduled progress meetings as follows:
 - .1 Updated progress schedule detailing activities. Include review of progress with respect to previously established dates for starting and stopping various stages of Work, major problems and action taken, injury reports, equipment breakdown, and material removal.
 - .2 Copies of air sampling results.
 - .3 Copies of transport manifests, trip tickets, and disposal receipts for waste materials removed from work area.
 - .4 Weekly copies of site entry and work area logbooks with information on worker and visitor access.
 - .5 Weekly logs documenting engineering controls.
 - .6 Weekly results of collected air sampling data, including compliance air monitoring results.
 - .7 Other information required by Departmental Representative or relevant to agenda for upcoming progress meeting.
- .4 Site Layout: within seven (7) days after date of Notice to Proceed and prior to mobilization to site, submit site layout drawings showing existing conditions and facilities, construction facilities and temporary controls provided by Contractor including following:
 - .1 Staging areas.
 - .2 Equipment and personnel decontamination areas.
 - .3 Means of ingress, egress and temporary traffic control facilities.
 - .4 Equipment and material staging areas.
 - .5 Demolition debris stockpile areas.
- .5 Submit documentation verifying that hazardous materials employees have been trained, tested, and certified to safely and effectively carry out their assigned duties in accordance with Section 01 35 29.14 - Health

and Safety for Contaminated Sites.

1.04 REGULATORY REQUIREMENTS

- .1 Provide erosion and sediment control in accordance with applicable regulations.
- .2 Comply with federal, provincial, and local anti-pollution laws, ordinances, codes, and regulations when disposing of waste materials, debris, and rubbish.
- .3 Work to meet or exceed minimum requirements established by federal, provincial, and local laws and regulations which are applicable.
 - .1 Contractor: responsible for complying with amendments as they become effective.
- .4 In event that compliance exceeds scope of work or conflicts with specific requirements of contract notify Departmental Representative immediately.

1.05 SEQUENCING AND SCHEDULING

- .1 Do not commence Work involving contact with potentially contaminated materials until decontamination facilities are operational and approved by Departmental Representative.

1.06 EQUIPMENT DECONTAMINATION FACILITY

- .1 Not used.

1.07 DRUM STAGING PAD

- .1 Provide, maintain, and operate drum staging pad as require.
- .2 Construct drum staging pad with sump capable of collecting leachate and rain runoff. Place polyethylene sheeting such that sheeting contours over top of berm, and leachate and runoff from staging pad is directed solely to sump on staging pad.

1.08 SOIL STOCKPILING FACILITIES

- .1 Not used.

1.09 DESIGN REQUIREMENTS

- .1 Not used.

1.10 WASTEWATER STORAGE TANK

- .1 Not used.

1.11 DRUMS

- .1 Storage of Liquid Waste: 200 L steel drums meeting Transportation and

Dangerous Goods Act, closable lids, complete with labels for marking contents and date filled.

- .2 Storage of Solid Waste: 200 L steel drums meeting Transportation and Dangerous Goods Act, closable lids, complete with labels for marking contents and date filled.

1.12 VEHICULAR ACCESS AND PARKING

- .1 Not used.

1.13 DUST AND PARTICULATE CONTROL

- .1 Execute Work by methods to minimize raising dust from construction operations.
- .2 Implement and maintain dust and particulate control measures as determined necessary by Departmental Representative during construction and in accordance with applicable regulations.
- .3 Provide positive means to prevent airborne dust from dispersing into atmosphere. Use water misting system for dust and particulate control.
- .4 Use chemical means for water misting system for dust and particulate control only with Departmental Representative's prior written approval.
- .5 As minimum, use appropriate covers on trucks hauling fine or dusty material. Use watertight vehicles to haul wet materials.
- .6 Prevent dust from spreading to adjacent property sites.
- .7 Departmental Representative will stop work at any time when Contractor's control of dusts and particulates is inadequate for wind conditions present at site, or when air quality monitoring indicates that release of fugitive dusts and particulates into atmosphere equals or exceeds specified levels.
- .8 If Contractor's dust and particulate control is not sufficient for controlling dusts and particulates into atmosphere, stop work. Contractor must discuss procedures that Contractor proposes to resolve problem. Make necessary changes to operations prior to resuming excavation, handling, processing, or other work that may cause release of dusts or particulates.

1.14 POLLUTION CONTROL

- .1 Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious toxic substances and pollutants produced by construction operations.
- .2 Be prepared to intercept, clean up, and dispose of spills or releases that may occur whether on land or water. Maintain materials and equipment required for cleanup of spills or releases readily accessible on site.
- .3 Promptly report spills and releases potentially causing damage to environment to:

- .1 Authority having jurisdiction or interest in spill or release including conservation authority, water supply authorities, drainage authority, road authority, and fire department.
- .2 Owner of pollutant, if known.
- .3 Person having control over pollutant, if known.
- .4 Departmental Representative.
- .4 Contact manufacturer of pollutant if known and ascertain hazards involved, precautions required, and measures used in cleanup or mitigating action.
- .5 Take immediate action using available resources to contain and mitigate effects on environment and persons from spill or release.
- .6 Provide spill response materials including, containers, adsorbent, shovels, and personal protective equipment. Make spill response materials available at all times in which hazardous materials or wastes are being handled or transported. Spill response materials: compatible with type of material being handled.

1.15 EQUIPMENT DECONTAMINATION

- .1 Not used.

1.16 WATER CONTROL

- .1 Maintain excavations free of water.
- .2 Protect site from puddling or running water. Grade site to drain. Provide water barriers as necessary to protect site from soil erosion.
- .3 Prevent surface water runoff from leaving work areas.
- .4 Do not discharge decontaminated water, or surface water runoff, or groundwater which may have come in contact with potentially contaminated material, off site or to municipal sewers.
- .5 Prevent precipitation from infiltrating or from directly running off stockpiled materials. Cover stockpiled materials with an impermeable liner during periods of work stoppage including at end of each working day and as directed by Departmental Representative
- .6 Direct surface waters that have not contacted potentially contaminated materials to existing surface drainage systems.
- .7 Control surface drainage including ensuring that gutters are kept open, water is not directed across or over pavements or sidewalks except through approved pipes or properly constructed troughs, and runoff from unstabilized areas is intercepted and diverted to suitable outlet.
- .8 Dispose of water in manner not injurious to public health or safety, to property, or to any part of Work completed or under construction.
- .9 Provide, operate, and maintain necessary equipment appropriately sized to keep excavations, staging pads, and other work areas free from water.

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- .10 Contain water from stockpiled materials. Transfer potentially contaminated surface waters to wastewater storage tanks separate from wastewater from Personnel Hygiene/Decontamination Facility.
- .11 Have on hand sufficient pumping equipment, machinery, and tankage in good working condition for ordinary emergencies, including power outage, and competent workers for operation of pumping equipment.
- .12 Contain and collect wastewaters and transfer such collected wastewaters to Contractor -supplied drums.

1.17 DEWATERING

- .1 Not used.

1.18 EROSION AND SEDIMENT CONTROL

- .1 Not used.

1.19 PROGRESS CLEANING

- .1 Maintain cleanliness of Work and surrounding site to comply with federal, provincial, and local fire and safety laws, ordinances, codes, and regulations.
- .2 Co-ordinate cleaning operations with disposal operations to prevent accumulation of dust, dirt, debris, rubbish, and waste materials.

1.20 FINAL DECONTAMINATION

- .1 Perform final decontamination of construction facilities, equipment, and materials which may have come in contact with potentially contaminated materials prior to removal from site.
- .2 Perform decontamination as specified to satisfaction of Departmental Representative. Departmental Representative will direct Contractor to perform additional decontamination if required.

1.21 REMOVAL AND DISPOSAL

- .1 Remove surplus materials and temporary facilities from site.
- .2 Dispose of non-contaminated waste materials, litter, debris, and rubbish off site.
- .3 Do not burn or bury rubbish and waste materials on site.
- .4 Do not dispose of volatile or hazardous wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
- .5 Do not discharge wastes into streams or waterways.
- .6 Dispose of following materials at appropriate off-site facility identified by Contractor and approved by Departmental Representative:
 - .1 Debris including excess construction material.
 - .2 Non-contaminated litter and rubbish.

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- .3 Disposable PPE worn during final cleaning.
- .4 Wastewater removed from wastewater storage tank.
- .5 Wastewater generated from final decontamination operations including wastewater storage tank cleaning.
- .6 Lumber from decontamination pads.
- .7 Dispose of materials in accordance with the specifications under Section 02 82 00 03 - Asbestos Abatement - Maximum Procedures and Section 02 83 11 - Lead-Base Paint Abatement - Intermediate Procedures.
- .9 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
- .10 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
 - .1 Hazardous wastes recycled in manner constituting disposal;
 - .2 Hazardous waste burned for energy recovery;
 - .3 Lead-acid battery recycling;
 - .4 Hazardous wastes with economically recoverable precious metals.

1.22 RECORD KEEPING

- .1 Maintain adequate records to support information provided to Departmental Representative regarding exception reports, annual reports, and biennial reports.
- .2 Maintain asbestos waste shipment records for minimum of three (3) years from date of shipment or longer period required by applicable law or regulation.
- .3 Maintain bills of ladings for minimum of 375 days from date of shipment or longer period required by applicable law or regulation.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used.

3 EXECUTION

3.01 NOT USED

- .1 Not Used.

END OF SECTION

1 GENERAL

1.01 References and Codes

- .1 Perform Work in accordance with National Building Code of Canada (NBC) including all amendments and other codes of territorial or local application provided that in case of conflict or discrepancy, more stringent requirements apply.
- .2 Meet or exceed requirements of:
 - .1 Contract documents.
 - .2 Specified standards, codes and referenced documents.
 - .3 Perform Work in accordance with the Specifications and meet or exceed all codes, standards and regulations applicable to the Work and issued under the authority of the Government of Canada and the Government of Nunavut. Advise Departmental Representative of any discrepancies in the codes, standards and regulations applicable to the Work.

1.02 References and Codes - Federal

- .1 Meet or exceed the most recent amendments or revisions to the governing codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the Government of Canada including, but not limited to:
 - .1 Canada Labour Code Part II-Occupational Health and Safety (R.S.1985,c.L-2).
 - .2 Canada Occupational Health and Safety Regulations (SOR/86-304).
 - .3 Canadian Environmental Protection Act, (S.C. 1999, c.33).
 - .4 Controlled Products Regulations (SOR/88-66).
 - .5 Interprovincial Movement of Hazardous Waste Regulations (SOR/2002-301).
 - .6 Department of Justice Canada (Jus)/CEPA, 1999 Federal PCB Regulations, (SOR/2008-273).
 - .7 National Construction, Renovation and Demolition Non-hazardous Solid Waste Management Protocol, PWGSC 2002.
 - .8 National Fire Code of Canada, 2005.
 - .9 National Building Code of Canada, 2005.
 - .10 Ozone Depleting Substances Regulations, 1998 (SOR/99-7).
 - .11 Transportation of Dangerous Goods Act, 1992 (S.C. 1992, c.34).
 - .12 Transportation of Dangerous Goods Regulations (SOR/2001-286).
 - .13 Territorial Land Use Regulations (C.R.C., c.1524).
 - .14 Fisheries Act (R.S., 1985, c. F-14).
 - .15 Health Canada Guidelines for Canadian Drinking Water Quality, May 2008.
 - .16 Arctic Waters Pollution and Prevention Act (A.S. 1985 CA-12).
 - .17 Nunavut Waters and Nunavut Surface Rights Tribunal Act (SOR/2002-253).
 - .18.

1.03 References and Codes - Nunavut

- .1 Meet or exceed the most recent amendments or revisions to the governing

codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the Government of Nunavut including, but not limited to:

- .1 Environmental Protection Act (Nunavut) (R.S.N.W.T. 1988, c. E-7).
- .2 Labour Standards Act (Nunavut) S.N.W.T. 2003, c.15.
- .3 Public Health Act, R.S.N.W.T. 1988, c.P-12.
- .4 Spill Contingency Planning and Reporting Regulations NU R-068-93.
- .5 Fire Prevention Act, R.S.N.W.T. 1988, c.F-6.
- .6 Transportation of Dangerous Goods Act, S.N.W.T. 1990, c.36
2008, c.8.
- .7 Transportation of Dangerous Goods Regulations, N.W.T. Reg. 049-
2002.
- .8 Used Oil and Waste Fuel Management Regulations, N.W.T. R-064-2003.
- .9 Work Site Hazardous Materials Information System Regulations,
R.R.N.W.T. 1990, c.S-2.
- .10 Guideline for the Management of Waste Lead and Lead Paint,
Nunavut, 2014.
- .11 Codes of Practice, Asbestos Abatement, Nunavut, 2011.

1.03 References and Codes - City of Iqaluit

- .1 Meet or exceed the most recent amendments or revisions to the governing codes, standards and guidelines, and regulations applicable to Work and issued under the authority of the City of Iqaluit.

1.04 Standards, Guidelines and Policies

- .1 Meet or exceed the most recent amendments or revisions to the governing standards, guidelines, and policies applicable to the Work, including, but not limited to:
 - .1 Guidelines for Canadian Drinking Water Quality, April 2004, Canadian Council of Ministers of the Environment.
 - .2 Guidelines for Effluent Quality and Wastewater Treatment at Federal Establishments, April 1976, Environmental Conservation Directorate.
 - .3 Guideline for the Management of Waste Lead and Lead Paint, Nunavut, 2014.
 - .4 Environmental Guideline for Air Quality - Sulphur Dioxide and Suspended Particulates, January 2002 - Government of the Nunavut.
 - .5 Environmental Guideline for Dust Suppression, January 2002, Government of the Nunavut.
 - .6 Environmental Guideline for the General Management of Hazardous Waste, January 2002, Government of Nunavut.

1.05 Permits and Licenses

- .1 Any deviations from the current abatement and demolition plan may require Permit amendments or field authorizations. Notify Departmental Representative of any proposed deviations.
- .2 Respond to all regulatory inquiries in order to get permits and licenses and provide Departmental Representative with a copy of each response.

1.06 Hazardous Material

- .1 Work at site will involve contact with:
 - .1 Asbestos-containing materials.
 - .2 Lead paint.
 - .3 Mercury-containing materials.
 - .4 Polychlorinated biphenyl (PCB)-containing material.

1.07 WHMIS

- .1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials; and regarding labelling and provision of material safety data sheets acceptable to Labour Canada, HRSDC and Health Canada.
- .2 Deliver copies of WHMIS data sheets to Departmental Representative on delivery of materials.

1.08 Submittals

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

2 PRODUCTS

2.01 NOT USED

- .1 Not Used

3 EXECUTION

3.01 NOT USED

- .1 Not Used

END OF SECTION

1 GENERAL

1.01 Inspection

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative may order any part of Work to be examined if Work is suspected to be not in accordance with Contract Documents. If, upon examination such Work is found not in accordance with Contract Documents, correct such Work and pay cost of examination and correction. If such Work is found in accordance with Contract Documents, Departmental Representative will pay cost of examination and replacement.

1.02 Submittals

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

1.03 Independent Inspection Agencies

- .1 Independent Inspection/Testing Agencies will be engaged by Departmental Representative for purpose of inspecting and/or testing portions of Work. Cost of such services will be borne by Departmental Representative.
- .2 Provide access for executing inspection and testing by appointed agencies.
- .3 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.
- .4 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Departmental Representative at no cost to Departmental Representative. Pay costs for retesting and re-inspection.

1.04 Access to Work

- .1 Allow inspection/testing agencies access to Work, off site

manufacturing and storage areas.

- .2 Co-operate to provide reasonable facilities for such access.

1.05 Procedures

- .1 Notify appropriate agency and Departmental Representative in advance of requirement for tests, in order that attendance arrangements can be made.
- .2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.
- .3 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

1.06 Rejected Work

- .1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Departmental Representative as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.
- .2 If in opinion of Departmental Representative it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Departmental Representative may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which will be determined by Departmental Representative.

1.07 Reports

- .1 Departmental Representative will distribute copies of reports.
- .2 Provide copies to Sub-Contractor of Work being inspected or tested and manufacturer or fabricator of material being inspected or tested.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used

3 EXECUTION

3.01 NOT USED

- .1 Not Used

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SECT 01 45 00
QUALITY CONTROL

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END OF SECTION

1 GENERAL

1.01 Closeout Procedures

- .1 Notify Departmental Representative when Work is considered ready for substantial performance.
- .2 Accompany Departmental Representative on preliminary inspection to determine items listed for completion or correction.
- .3 Comply with Departmental Representative's instructions for correction of items of Work listed in executed Certificate of Substantial Completion.
- .4 Notify Departmental Representative of instructions for completion of items of Work determined in Departmental Representative's final inspection.

1.02 Inspection and Declaration

- .1 Contractor's Inspection: Conduct an inspection of Work, identify deficiencies and defects, and repair as required to conform to Contract Documents.
 - .1 Notify Departmental Representative in writing of satisfactory completion of Contractor's Inspection and that corrections have been made.
 - .2 Request Departmental Representative's Inspection.
- .2 Departmental Representative's Inspection: Departmental Representative and Contractor will perform inspection of Work to identify obvious defects or deficiencies. Contractor to correct Work accordingly.
- .3 Completion: submit written certificate that following have been performed:
 - .1 Work has been completed and inspected for compliance with Contract Documents.
 - .2 Defects have been corrected and deficiencies have been completed.
 - .3 Work is complete and ready for Final Inspection.
- .4 Final Inspection (Final Walk Over): when items noted above are completed, request final inspection of Work by Departmental Representative and Contractor. If Work is deemed incomplete by Departmental Representative, complete outstanding items and request re-inspection.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used

3 EXECUTION

3.01 NOT USED

.1 Not Used

END OF SECTION

1 GENERAL

1.01 Format

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

1.02 Contents - Each Volume

- .1 Table of Contents: provide title of Project;
 - .1 date of submission; names, addresses, and telephone numbers of Contractor with name of responsible parties.
 - .2 Schedule of work including off-site transport of waste.
 - .3 Summary of Health and Safety issues, Environmental issues and performance indicators.
 - .4 Waste acceptance certificates.
 - .5 Submittals.
 - .6 Photographs as per Section 01 33 00 - Submittal Procedures.
- .2 For each aspect of the work:
 - .1 list names, addresses and telephone numbers of Sub-Contractors and suppliers, including local source of supplies and replacement parts.
- .3 Drawings: supplement the summary of work with drawings to illustrate relations of component parts of equipment and systems.
- .4 Typewritten Text: as required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified.

1.03 Photograph Requirements

- .1 Submit photographs as per Section 01 33 00 - Submittal Procedures.

1.04 Documents

- .1 In addition to requirements in General Conditions, maintain at the site for Departmental Representative one record copy of:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Change Orders and other modifications to the Contract.
 - .5 Field test records.
 - .6 Inspection certificates.
 - .7 Manufacturer's certificates.
- .2 Label record documents and file in accordance with Section number listings in List of Contents of this Project Manual. Label each document "PROJECT RECORD" in neat, large, printed letters.
- .3 Maintain record documents in clean, dry and legible condition. Do not use record documents for construction purposes.
- .4 Keep record documents and samples available for inspection by Departmental Representative.

1.05 Recording Actual Site Conditions

- .1 Record information on set of black line opaque drawings, and in copy of Project Manual, provided by Departmental Representative.
- .2 Provide felt tip marking pens, maintaining separate colours for each major system, for recording information.
- .3 Record information concurrently with construction progress. Do not conceal Work until required information is recorded.
- .4 Contract Drawings: legibly mark each item to record actual construction, including:
 - .1 Field changes of dimension and detail.
 - .2 Changes made by change orders.
 - .3 Details not on original Contract Drawings.
- .5 Other Documents: maintain manufacturer's certifications, inspection certifications, and field test records, required by individual specifications sections.

1.06 Record Drawings

- .1 Departmental Representative will provide to Contractor, one sets of white prints for record drawing purposes.
- .2 Maintain Project record drawings and record accurately deviations from Contract documents on one set of prints.
- .3 Record changes in red.
- .4 At completion of Project and prior to final inspection, neatly transfer record notations to second set of drawings and submit both sets to Departmental Representative. Forward information on completed areas at

the end of the construction season.

1.07 Other Records

- .1 Prior to completion of Project, submit the following to the Departmental Representative:
 - .1 Copies of all documents and permits obtained by the Contractor.
 - .2 Results of all testing carried out by the Contractor.
 - .3 Any other pertinent information.
 - .4 Copies of all shipping documents identifying the shipper, the receiver and all carriers involved in the transport of materials.
 - .5 information as required by the AHJ.
 - .6 Information as required by other applicable permits.
- .2 Consolidate the above information in one document and submit five copies to the Departmental Representative.

2 PRODUCTS

2.01 NOT USED

- .1 Not Used

3 EXECUTION

3.01 NOT USED

- .1 Not Used

END OF SECTION

1 GENERAL

1.01 Description

- .1 This section specifies the requirements for the demolition, decommissioning, and dismantling of DFO Building 1074 as indicated on the Drawings and Specifications, and the requirements for the recovery, consolidation, segregation, on-site handling, containerization, off-site transport and disposal of debris as generated from building demolition, located beneath the building, and located inside the building.
- .2 A summary of the known debris volumes is provided in the reference documents. Quantities do not include for any bulking factor. The Crown will not be responsible for any increase in waste volumes resulting from the bulking on waste debris during containerization and offsite disposal of the debris waste outside of Nunavut.
- .3 Prepare and complete work in accordance with the Demolition Plan upon review by the Departmental Representative.
- .4 The work related to the management of asbestos-containing materials will be done in accordance with the specifications under Section 02 82 00 03 - Asbestos Abatement - Maximum Procedures.
- .5 The work related to the management of lead-based paint will be done in accordance with the specifications under Section 02 83 11 - Lead-Base Paint Abatement - Intermediate Procedures.
- .6 The work related to the management of Polychlorinate Biphenyl (PCBs) will be done in accordance with the specifications under Section 02 84 00 - Polychlorinate Biphenyl Remediation.
- .7 Work is to include removal and disposal of all contents within or attached to the structure.

1.02 Definitions

- .1 Known Debris: All material which comprises the building, is located beneath the building, and is scattered across the site proper on the existing ground surface consisting of hazardous and non-hazardous material, and that:
 - .1 has been identified to be removed
- .2 Unknown Debris: Scattered debris on the existing ground surface consisting of hazardous and non-hazardous material other than the Known Debris described above.
- .3 Hazardous Waste Materials: Wastes materials that are designated as "hazardous" under Territorial or Federal legislation or guidelines; or as "dangerous goods" under the TDGA. The following items are designated as "hazardous" in accordance with the aforementioned legislation:
 - .1 Asbestos (unbagged).

- .2 Batteries.
 - .3 Solvents.
 - .4 Oils Containing Polychlorinated biphenyls (PCB) in excess of 2 ppm.
 - .5 Petroleum Distillates, including free product that may be recovered during contaminated soil excavation work.
 - .6 Tank Sludge.
 - .7 Soils and paint containing PCBs at concentrations in excess of 50 ppm (mg/kg) and/or leachable lead in excess of 5 ppm (mg/L).
 - .8 Material, including wastewater, groundwater and surface water, identified to be hazardous as the result of testing.
 - .9 Electrical equipment including, but not necessary limited to, capacitors, transformers, and regulators which contain or are suspected to contain PCBs at concentrations in excess of 50 mg/kg.
 - .10 Chemicals
 - .11 Miscellaneous Hazardous Materials defined as those materials not classified as 1 to 9 above but suspected to fall under the definition of Hazardous Wastes and Materials as stated in this Section.
- .4 Known Hazardous Material: material designated as hazardous in accordance with the definition of hazardous waste material in this Section. Known Hazardous Materials include:
- .1 Asbestos-containing materials
 - .2 Ozone-depleting substances
 - .3 Mercury-containing thermostats
 - .4 Smoke detectors
 - .5 Fluorescent lights and ballasts
- .5 Processing: the sampling, testing, packaging, and containerization of hazardous materials.
- .6 Shipping Container: a container which meets applicable TDGA Requirements for the transport of hazardous material and contains hazardous material.
- .7 Temporary Storage Area: the designated area, approved by Departmental Representative, for the storage of packaging and/or shipping containers prior to transport off-site. Requirements for the Temporary Storage Area are outlined in this Section.
- .8 Drum: for the purposes of these specifications a drum is a 205 L or smaller steel container used to hold fuel or other liquids.
- .9 Contractor's Receiving Site for Hazardous Materials: The Licensed Hazardous Waste Disposal Facilities, designated by Contractor and pre-approved by Departmental Representative, for the disposal of all hazardous waste specified under the provisions of this contract. Contractor must be able to provide documentation from the Designated Hazardous Waste Disposal Facilities indicating full responsibility for all hazardous waste accepted from the Site.
- .10 Leachable Lead Painted Material: Material that is coated with lead based paint that has been analyzed and determined to contain leachable lead concentrations in excess of 5 mg/L.

- .11 Calibrated Scale: Scale certified by Measurement Canada for legal trade.

1.03 Reference Standards

- .1 Canadian Council of Ministers of the Environment (CCME) Guidelines.
- .2 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures.
- .3 National Building Code of Canada, Current Edition.
- .4 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities: NIOSH Publication No. 85-115.
- .5 Hazardous Waste Worker Training Manual: Canadian LIUNA Contractors Training Council, 1992.
- .6 Conduct all work in accordance with all appropriate Federal and Territorial legislation, and international conventions including, but not limited to:
 - .1 Canadian Federal Legislation
 - .1 Canadian Environmental Protection Act.
 - .2 Canadian Labour Code (Part II)
 - .3 Transportation of Dangerous Goods Act and Regulations
 - .2 Territorial Legislation
 - .1 Nunavut Safety Act, R.S.N.W.T.
 - .2 Nunavut General Safety Regulations, R.R.N.W.T.
 - .3 Guidelines for the Management of Waste Lead and Lead Paint, NU
 - .4 Transportation of Dangerous Goods Act, S.N.W.T
 - .5 Transportation of Dangerous Goods Regulations, R.N.W.T
 - .6 Codes of Practice, Asbestos Abatement, Nunavut, 2011.

1.04 Mobilization and Demobilization

- .1 Provide all labour, equipment and materials, and performance of all Work necessary for mobilization to, and demobilization from site.
- .2 Mobilization to include transportation to site of Contractor's labour, equipment, materials, and assembling, erecting, and preparing site in readiness to start Work, all in accordance with Contractor's Schedule.
- .3 Demobilization to include dismantling and removal from site, of all Contractor's equipment and materials, and transportation of labour from site.
- .4 Decontaminate and clean all equipment used on the Project prior to demobilization.
- .5 Do not mobilize to the site without written authorization from the Departmental Representative.
- .6 All mobilization and demobilization methods to comply with the requirements of all applicable codes, standards, guidelines and AHJ.

- .7 All personnel supervising or operating equipment will be properly certified.
- .8 A Final Walk Over will be required prior to Demobilization as per Section 01 77 00 - Closeout Procedures.

1.05 Environmental Protection

- .1 Ensure Work is done in accordance with the AHJ.

1.06 Work Description

- .1 Demolition, removal, and disposal of the structure (DFO Building 1074) as indicated in the Appendices and Drawings, and in accordance with the Demolition Plan, including the following:
 - .1 Demolishing and sorting all non-hazardous waste building components comprising the structure and beneath the structure
 - .2 Remove and dispose all contents within or attached to the structure.

1.07 Existing Conditions

- .1 The information presented that describes the structure to be demolished is based upon site conditions described in the reference documents. A summary of the estimated quantities of waste is detailed in the reference documents.
- .2 The information presented in the reference documents, including inventory tables and drawings, provide brief descriptions of locations of materials. These tables and drawings indicate only the major work elements, and are not to be construed as exact for final demolition requirements. Contractor is responsible for all work described in this Section, which includes the complete demolition of all facilities and structures designated for demolition.
- .3 The information presented in the reference documents indicates types and quantities of hazardous waste materials that have been previously identified, and must be removed and disposed of. Should other potentially hazardous waste material, other than that already identified, be encountered in the course of demolition work, stop work immediately, and notify the Departmental Representative. Do not proceed until written instructions have been received from Departmental Representative.

1.08 Demolition Drawing

- .1 Where required by authorities having jurisdiction, submit for approval drawings, diagrams or details showing sequence of disassembly work or supporting structures and underpinning. Submissions to bear stamp of qualified professional Engineer registered in Nunavut.
- .2 Do not commence demolition work until the Contractor has demonstrated to the Departmental Representative that all required permits to be acquired by the Contractor for the work have been obtained.

1.09 Protection

- .1 Take precautions to support structures and if safety of item being demolished or adjacent structures or services appear to be endangered, cease operations and notify the Departmental Representative.
- .2 Prevent damage and minimize stripping of natural terrain, features and vegetation. Make good all damage.
- .3 Ensure safe passage of persons around area of demolition.
- .4 Do not proceed with demolition work when weather conditions constitute a hazard to the workers and site. Prevailing weather conditions and weather forecast are to be considered.

1.10 Fires

- .1 Fires are not permitted at the Site.
- .2 Provide fire response measures in accordance with Section 01 35 29.14 - Health and Safety for Contaminated Sites.

2 PRODUCTS

2.1 Hazardous Waste Material Containers:

- .1 Hazardous Waste Containers:
 - .1 Containers are to satisfy the requirements of the latest edition of the Transportation of Dangerous Goods (TDG) Act and Regulations.
 - .2 Submit details of the containers to Departmental Representative for review prior to commencement of the work. These details are to include written confirmation from Transport Canada that Contractor's proposed containers satisfy TDGA regulatory requirements for marine transport for those materials being transported south by barge.
 - .3 Containers are to include all necessary liners to satisfy the TDGA requirements for ground transport via the local road system.
- .2 For packaging and containerization requirements of hazardous waste materials, all requirements of the TDG Act and Regulations must be met.
- .3 Contain asbestos in accordance with Sections 02 82 00 - Asbestos Abatement - Maximum Precautions.
- .4 The work related to the management of lead-based paint will be done in accordance with the specifications under Section 02 83 11 - Lead-Base Paint Abatement - Intermediate Procedures.
- .5 The work related to the management of PCBs will be done in accordance with the specifications under Section 02 84 00 - Polychlorinate Biphenyl Remediation.

- .6 Provide access for Departmental Representative to inspect all Hazardous Material Packaging.

3 EXECUTION

3.01 Work

- .1 Demolish existing structure as indicated and dispose of demolition debris as specified in this section and in Section 02 82 00.03 - Asbestos Abatement - Maximum Precautions, Section 02 83 11 Lead-Base Pain Abatement - Intermediate Precautions.

3.02 Safety and Personnel Protection

- .1 Unless otherwise specified, carry out demolition work in accordance with Section 01 11 00 - Summary of Work and Section 01 35 29.14 - Health and Safety for Contaminated Sites.

3.03 Preparation

- .1 Inspect site and verify prior to demolition with the Departmental Representative the building, structures and utilities designated for demolition.
- .2 Co-ordinate with Qulliq Energy Corporation the disconnection of electricity.
- .3 Co-ordinate with AHJ the disconnection of the services provided by the utilidor.

3.04 Demolition, Decommissioning and Dismantling

- .1 The building and associated structures are to be demolished to the base unless otherwise indicated. Any exposed foundations are to be excavated and broken down to have a longest dimension as appropriate for transport to the Contractor off-site Receiving Site.
- .2 Remove all materials indicated and described in this section and in Section 02 82 00.03 - Asbestos Abatement - Maximum Precautions, Section 02 83 11 Lead-Base Pain Abatement - Intermediate Precautions.
- .3 Cut non-hazardous materials in such shapes and sizes so as to optimize containerization of the material in preparation for off-site disposal at the Contractor's Receiving Site.
- .4 At end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling.
- .5 Demolish in a manner that minimizes dust creation.
- .6 Demolish, remove and lower structural framing and other heavy or large objects in a safe manner.

- .7 The final decommissioned building sub-structure must meet all applicable guidelines outlined by AHJ Safety standards.
- .8 Disconnection and decommissioning of utilities must comply with local regulatory requirements as stipulated by AHJ.

3.05 Removal and Sorting

- .1 Examine the material type and nature of the debris.
- .2 Proceed with the collection, consolidation and removal of debris if, based on the visual assessment, the debris is determined to be non-hazardous.
- .3 Immediately suspend the operation if suspected hazardous material or debris is identified and allow visual confirmation of the nature of the material or debris to be established.
- .4 Contractor's Hazardous Materials Specialist to continuously monitor the operation to identify potentially hazardous material.
- .4 Store hazardous materials in a secured area in secured containers as required. Testing for classification of hazardous products will be carried out and paid for by Departmental Representative.
- .5 Store suspicious material in a secured area or secured containers, if the nature of the material or debris can not be confirmed. Advise Departmental Representative about the findings. Material needs to be seized until the nature of the material is confirmed by Departmental Representative. Testing for classification will be carried out and paid for by Departmental Representative.
- .6 Remove hazardous waste materials from their place of origin, place in containers, and transport containers to the Temporary Storage Area.
- .7 Remove asbestos in accordance with Section 02 82 00 - Asbestos Abatement - Maximum Precautions.
- .8 The work related to the management of lead-based paint will be done in accordance with the specifications under Section 02 83 11 - Lead-Base Paint Abatement - Intermediate Procedures.
- .9 The work related to the management of PCBs will be done in accordance with the specifications under Section 02 84 00 - Polychlorinate Biphenyl Remediation.
- .10 Avoid releasing any hazardous materials into the environment during the handling of hazardous waste materials.
- .11 Invoke the approved emergency response plan and take the appropriate action in the event of a spill or other emergency situation.
- .12 Have available, a full range of cleanup and protective equipment (PPE) at the site of debris removal to contain and cleanup spills, and protect personnel as required. The cleanup is to include booms (sorbent and containment), sorbents for cleanup, over-packs for drums and

contaminated soils, pumps, hand shovels, and picks.

- .13 Personnel protective equipment as per Section 01 35 29.14 - Health and Safety for Contaminated Sites to include clothing protective suits respirators etc in accordance with NIOSH Guidelines and to comply with anticipated and potential emergency conditions.
- .14 Site personnel in the vicinity of the debris removal operations or handling hazardous material are required to wear environmental protection equipment in accordance with NIOSH guidelines and the Specific Health and Safety Plan.
- .15 Advise Departmental Representative of any spills during debris removal operations. Immediately clean up any spills, leaks, or other releases of liquid or sediment from this area in accordance with the Specific Health and Safety Plan.
- .16 Submit details of the containers for handling and disposal of hazardous waste materials to Departmental Representative for review prior to commencement of site abatement activities. Include all required approvals, as well as a description of the type and volume of containers.

3.06 Inventory and Packaging of Containers

- .1 Provide a numbering system and maintain an inventory of all containers to be transported and disposed of off-site.
- .2 Label all containers, using spray paint or other means, with the Container number and contents (e.g. Haz Debris).
- .3 Package and label each "hazardous material" in accordance with the "Class" and "Packaging Group" as per the TDGA.
- .4 Submit to Departmental Representative, a copy of the inventory of the contents of each container.
- .5 Provide certificates to the Departmental Representative of the hazardous waste material disposal once the waste material has been received by the Contractor's Receiving Site and prior to final payment.
- .6 Advise Departmental Representative of any stained soils observed during the demolition works. Stained soils from historic site activities will be dealt with in a separate contract.

3.05 Site Grading and Restoration

- .1 Upon completion of demolition work, remove debris and leave work sites clean to a condition satisfactory to the Departmental Representative.
- .2 Reshape or grade areas excavated to facilitate demolition requirements in accordance with Section 31 22 13 - Rough Grading.
- .3 Do not begin grading of demolition areas until approval to do so is given in writing by the Departmental Representative.

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- .1 Section 02 82 00.03 - Asbestos Abatement - Maximum Precautions
- .2 Section 02 83 11 - Lead-Based Paint Abatement - Intermediate Precautions
- .3 Section 02 84 00 - Polychlorinated Biphenyl Remediation

1.02 REFERENCES

- .1 Definitions:
 - .1 Dangerous Goods: product, substance, or organism specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.
 - .2 Hazardous Material: product, substance, or organism used for its original purpose; and is either dangerous goods or material that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
 - .3 Hazardous Waste: hazardous material no longer used for its original purpose and that is intended for recycling, treatment or disposal.
- .2 Reference Standards:
 - .1 Canadian Environmental Protection Act, 1999 (CEPA 1999)
 - .1 Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149).
 - .2 Department of Justice Canada (Jus)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDG Act) [1992], (c. 34).
 - .2 Transportation of Dangerous Goods Regulations (T-19.01-SOR/2001-286).
 - .3 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
 - .1 Material Safety Data Sheets (MSDS).
 - .4 National Research Council Canada Institute for Research in Construction (NRC-IRC)
 - .1 National Fire Code of Canada-2005.
 - .5 National Building Code of Canada (NBC), Part 8 - Safety Measures at Construction and Demolition Sites (2005).
 - .6 Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations, SOR/2005-149.
- .3 As identified in specification sections.

1.03 ACTION AND INFORMATIONAL SUBMITTALS

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

- .2 Product Data:
 - .1 Submit manufacturer's instructions, printed product literature and data sheets for hazardous materials intended to be brought on site and include intended use, product characteristics, performance criteria, physical size, finish and limitations. Submit two copies of WHMIS MSDS to the Departmental Representative for each hazardous material required prior to bringing hazardous material on site.
 - .2 Submit hazardous materials management plan to Departmental Representative that identifies hazardous materials, usage, location, personal protective equipment requirements, and disposal arrangements.

1.04 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Transport hazardous materials and wastes in accordance with Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.
- .4 Storage and Handling Requirements:
 - .1 Co-ordinate storage of hazardous materials with Departmental Representative and abide by internal requirements for labeling and storage of materials and wastes.
 - .2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
 - .3 Store and handle flammable and combustible materials in accordance with National Fire Code of Canada requirements.
 - .4 Keep no more than 45 liters of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.
 - .1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.
 - .2 Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires the written approval of the Departmental Representative.
 - .5 Transfer of flammable and combustible liquids is prohibited within buildings.
 - .6 Transfer flammable and combustible liquids away from open flames or heat-producing devices.
 - .7 Solvents or cleaning agents must be non-flammable or have flash point above 38 degrees C.
 - .8 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.
 - .9 Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.
 - .10 Storage requirements for quantities of hazardous materials and

wastes in excess of 5 kg for solids, and 5 litres for liquids:

- .1 Store hazardous materials and wastes in closed and sealed containers.
- .2 Label containers of hazardous materials and wastes in accordance with WHMIS.
- .3 Store hazardous materials and wastes in containers compatible with that material or waste.
- .4 Segregate incompatible materials and wastes.
- .5 Ensure that different hazardous materials or hazardous wastes are stored in separate containers.
- .6 Store hazardous materials and wastes in secure storage area with controlled access.
- .7 Maintain clear egress from storage area.
- .8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.
- .9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.
- .10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.
- .11 When hazardous waste is generated on site:
 - .1 Co-ordinate transportation and disposal with Departmental Representative.
 - .2 Comply with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.
 - .3 Use licensed carrier authorized by provincial authorities to accept subject material.
 - .4 Before shipping material obtain written notice from intended hazardous waste treatment or disposal facility it will accept material and it is licensed to accept this material.
 - .5 Label container[s] with legible, visible safety marks as prescribed by federal and provincial regulations.
 - .6 Only trained personnel is allowed to handle, offer for transport, or transport dangerous goods.
 - .7 Provide photocopy of shipping documents and waste manifests to Departmental Representative.
 - .8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide photocopy of completed manifest to Departmental Representative.
 - .9 Report discharge, emission, or escape of hazardous materials immediately to Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.
- .12 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .13 Report spills or accidents immediately to Departmental Representative and provincial authorities. Submit a written spill report to Departmental Representative within 24 hours of incident.

2 PRODUCTS

2.01 MATERIALS

- .1 Description:
 - .1 Bring on site only quantities hazardous material required to perform Work.
 - .2 Maintain MSDS in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

3 EXECUTION

3.01 Cleaning

- .1 Progress Cleaning:
 - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
- .3 Waste Management: separate waste materials for disposal.
 - .1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.
 - .2 Recycle hazardous wastes for which there is approved, cost effective recycling process available.
 - .3 Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.
 - .4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.
 - .5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.
 - .6 Dispose of hazardous wastes in timely fashion in accordance with applicable provincial regulations.
 - .7 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.
 - .8 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
 - .1 Hazardous wastes recycled in manner constituting disposal.
 - .2 Hazardous waste burned for energy recovery.
 - .3 Lead-acid battery recycling.
 - .4 Hazardous wastes with economically recoverable precious metals.

END OF SECTION

1 GENERAL

1.01 Section Includes:

- .1 Requirements and procedures for asbestos abatement on friable asbestos-containing materials.
- .2 Comply with requirements of this Section when performing following Work:
 - .1 Removal or disturbance as specified of more than 0.09 square metre of friable asbestos-containing material during the repair, alteration, maintenance or demolition of a building at site.
 - .2 Breaking, cutting, drilling, abrading, grinding, sanding or vibrating non-friable asbestos-containing material, if the work is done by means of power tools that are not attached to dust-collecting devices equipped with HEPA filters.

1.02 References

- .1 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .3 Government of Nunavut
 - .1 Occupational Health & Safety Regulations, DRAFT September 2010

1.03 Definitions

- .1 Airlock: system for permitting ingress or egress without permitting air movement between contaminated area and uncontaminated area, typically consisting of two curtained doorways at least 2 m apart.
- .2 Amended Water: water with a non-ionic surfactant wetting agent added to reduce water tension to allow wetting of fibres.
- .3 Asbestos-Containing Building Materials (ACBMs): materials that contain 0.1 per cent or more asbestos by dry weight and are identified under Existing Conditions including fallen materials and settled dust.
- .4 Asbestos Work Areas: area where work takes place which will, or may disturb ACBs.
- .5 Authorized Visitors: WSCC Representative, Department Representative, or other designated representative[s], and representative[s] of regulatory agencies.
- .6 Competent worker: in relation to specific work, means a worker who:
- .7 Is qualified because of knowledge, training and experience to perform the work.

- .8 Is familiar with the Territorial laws and with the provisions of the regulations that apply to the work.
- .9 Has knowledge of all potential or actual danger to health or safety in the work.
- .10 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another while permitting minimal air movement between rooms, typically constructed as follows:
 - .1 Place two overlapping sheets of polyethylene over existing or temporarily framed doorway, secure each along top of doorway, secure vertical edge of one sheet along one vertical side of doorway, and secure vertical edge of other sheet along opposite vertical side of doorway.
 - .2 Reinforce free edges of polyethylene with duct tape and weight bottom edge to ensure proper closing.
 - .3 Overlap each polyethylene sheet at openings not less than 1.5 m on each side.
- .11 DOP Test: testing method used to determine integrity of Negative Pressure unit using dioctyl phthalate (DOP) HEPA-filter leak test.
- .12 Friable Materials: material that when dry can be crumbled, pulverized or powdered by hand pressure and includes such material that is crumbled, pulverized or powdered.
- .13 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.
- .14 Negative pressure: system that extracts air directly from work area, filters such extracted air through High Efficiency Particulate Air filtering system, and discharges this air directly outside work area to exterior of building.
- .15 System to maintain minimum pressure differential of 5 Pa relative to adjacent areas outside of work areas, be equipped with alarm to warn of system breakdown, and be equipped with instrument to continuously monitor and automatically record pressure differences.
- .16 Non-Friable Materials: material that when dry cannot be crumbled, pulverized or powdered by hand pressure.
- .17 Occupied Areas: any area of building or work site that is outside Asbestos Work Area.
- .18 Polyethylene sheeting sealed with tape: polyethylene sheeting of type and thickness specified sealed with tape along edges, around penetrating objects, over cuts and tears, and elsewhere as required to provide continuous polyethylene membrane to protect underlying surfaces from water damage or damage by sealants, and to prevent escape of asbestos fibres through sheeting into clean area.
- .19 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.

1.04 Action and Informational Submittals

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Before beginning work:
 - .1 Obtain from appropriate agency necessary permits for transportation and disposal of asbestos waste and submit to the Department Representative five (5) days before work commences. Ensure that dump operator is fully aware of hazardous nature of material being dumped and proper methods of disposal. Submit proof satisfactory to the Department Representative that suitable arrangements have been made to receive and properly dispose of asbestos waste.
 - .2 Submit proof satisfactory to the Department Representative that all asbestos workers have received appropriate training and education by a competent person on hazards of asbestos exposure, good personal hygiene, entry and exit from Asbestos Work Area, aspects of work procedures and protective measures while working in Asbestos Work Areas, and the use, cleaning and disposal of respirators and protective clothing. Submit proof of attendance in form of certificate.
 - .3 Ensure supervisory personnel have attended asbestos abatement course, of not less than two days duration, approved by the Department Representative. Submit proof of attendance in form of certificate. Minimum of one Supervisor for every ten workers.
 - .4 Submit layout of proposed enclosures and decontamination facilities to the Department Representative for review.
 - .5 Submit documentation including test results for sealer proposed for use.
 - .6 Submit Provincial/Territorial and/or local requirements for Notice of Project form.
 - .7 Submit proof satisfactory to the Department Representative that employees have respirator fitting and testing. Workers must be fit tested (irritant smoke test) with respirator that is personally issued.
 - .8 Submit documentation including test results, fire and flammability data, and Material Safety Data Sheets (MSDS) for chemicals or materials including but not limited to following:
 - .1 Encapsulants.
 - .2 Amended water.
 - .3 Slow drying sealer.
 - .9 Ensure all HEPA-filtered equipment has been tested before the job commences.
 - .10 Procedures to deal with emergencies such as fire or injury must be developed and in place prior to work starting.

1.05 Quality Assurance

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial 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 time work is performed.
- .2 Health and Safety:

- .1 Do construction occupational health and safety in accordance with Section 1.4.
- .3 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers while in Asbestos Work Area includes:
 - .1 Air purifying full face-mask respirator Powered air purifying respirator (PAPR) or better, with N-100, R-100 or P-100 particulate filter, personally issued to worker and marked as to efficiency and purpose, suitable for protection against asbestos and acceptable to Provincial Authority having jurisdiction. The respirator to be fitted so that there is an effective seal between the respirator and the worker's face, unless the respirator is equipped with a hood or helmet. The respirator to be cleaned, disinfected and inspected after use on each shift, or more often if necessary, when issued for the exclusive use of one worker, or after each use when used by more than one worker. The respirator to have damaged or deteriorated parts replaced prior to being used by a worker; and, when not in use, to be stored in a convenient, clean and sanitary location. The employer to establish written procedures regarding the selection, use and care of respirators, and a copy of the procedures to be provided to and reviewed with each worker who is required to wear a respirator. A worker not to be assigned to an operation requiring the use of a respirator unless he or she is physically able to perform the operation while using the respirator.
 - .2 Disposable type protective clothing that does not readily retain or permit penetration of asbestos fibres. Protective clothing to be provided by the employer and worn by every worker who enters the work area, and the protective clothing to consist of a head covering and full body covering that fits snugly at the ankles, wrists and neck, in order to prevent asbestos fibres from reaching the garments and skin under the protective clothing. It includes suitable footwear, and it to be repaired or replaced if torn. Requirements for each worker:
 - .3 Remove street clothes in clean change room and put on respirator with new filters or reusable filters that have been tested as satisfactory, clean coveralls and head covers before entering Equipment and Access Rooms or Asbestos Work Area. Store street clothes, uncontaminated footwear, towels, and similar uncontaminated articles in clean change room.
 - .4 Remove gross contamination from clothing before leaving work area then proceed to Equipment and Access Room and remove clothing except respirators. Place contaminated work suits in receptacles for disposal with other asbestos - contaminated materials. Leave reusable items except respirator in Equipment and Access Room. Still wearing the respirator proceed naked to showers. Using soap and water wash body and hair thoroughly. Clean outside of respirator with soap and water while showering; remove respirator;

- remove filters and wet them and dispose of filters in container provided for purpose; and wash and rinse inside of respirator. When not in use in 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.
- .5 After showering and drying off, proceed to clean change room and dress in street clothes at end of each day's work, or in clean coveralls before eating, smoking, or drinking. If re-entering work area, follow procedures outlined in paragraphs above.
 - .6 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment Decontamination Enclosure system. Workers must not use this system as means to leave or enter work area.
 - .4 Eating, drinking, chewing, and smoking are not permitted in Asbestos Work Area.
 - .5 Ensure workers are fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual asbestos abatement.
 - .6 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in this Section, in both official languages.
 - .7 Ensure that no person required to enter an Asbestos Work Area has facial hair that affects seal between respirator and face.
 - .8 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, respirators and procedures.
 - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Asbestos Work Area.

1.06 Waste Management and Disposal

- .1 Waste asbestos cannot be reused or recycled.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal paper, plastic, and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
- .4 Separate for recycling and place in designated steel waste containers in accordance with Waste Management Plan
- .5 Place materials defined as hazardous or toxic in designated containers.
- .6 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional, Territorial, and Municipal regulations.

- .7 Fold up metal banding, flatten and place in designated area for recycling.
- .8 Disposal of asbestos waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of asbestos waste in sealed double thickness [6] ml bags or leak proof drums. Label containers with appropriate warning labels.
- .9 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.
- .10 Friable waste asbestos is classified as a Class 9 Miscellaneous Waste by the Transportation of Dangerous Goods Act. The classification, packaging, labeling and placarding of this waste must conform to the federal and territorial Transportation of Dangerous Goods Act and Regulations. Schedule I of the Regulations classifies waste asbestos as follows:
 - .1 Shipping Name: WASTE Asbestos White (chrysotile, actinolite, anthophyllite, tremolite)
 - .2 Classification: 9
 - .3 Product Identification Number: UN2590 Packing Group: III
- .11 Asbestos waste must be stored, transported and disposed of in sealed containers that are impervious to asbestos and asbestos waste.
- .12 Removal is a necessary pre-requisite for demolition of a building containing asbestos-containing materials or when planned renovations will disturb the asbestos.
- .13 Waste asbestos is not recycled. All friable waste asbestos generated through this abatement project shall be disposed of at a licensed landfill. Non-friable waste asbestos will most likely become friable material once disturbed during the abatement process.

1.07 Existing Condition

- .1 Test results of asbestos containing materials to be handled, removed, or otherwise disturbed and disposed of during this Project are available for review at the Site. These are for general information only and are not necessarily representative of asbestos containing materials covered within scope of this Project.
- .2 Notify the Department Representative of suspect asbestos containing material discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by the Department Representative.

1.08 Scheduling

- .1 Notify all agencies with involvement in asbestos abatement.
- .2 Not later than seven (7) days before beginning Work on this Project notify following in writing:
 - .1 Regional Office of Labour Canada.
 - .2 Territorial Authority having jurisdiction.
 - .3 Disposal Authority.

- .4 WSCC Prevention Services
- .3 Inform sub-trades of presence of asbestos containing materials identified in Existing Conditions.
- .4 Submit to the Department Representative copy of notifications prior to start of Work.
- .5 Hours of Work: perform work involving asbestos abatement located at the Site during normal working hours.
- .6 The ACM abatement work shall be completed during the winter period of 2014/2015 based on an agreed schedule between the Department Representative and abatement contractor.

1.09 Personnel Training

- .1 Before beginning Work, provide to the Department 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 Asbestos Work Area, in aspects of work procedures including glove bag procedures, and in use, cleaning, and disposal of respirators and protective clothing.
- .2 Instruction and training related to respirators includes, at minimum:
 - .1 Proper fitting of equipment.
 - .2 Inspection and maintenance of equipment.
 - .3 Disinfecting of equipment.
 - .4 Limitations of equipment.
- .3 Instruction and training must be provided by competent, qualified person.
- .4 Supervisory personnel to complete required training.

2 PRODUCTS

2.01 Materials

- .1 Polyethylene: minimum 0.15 mm thick unless otherwise specified; in sheet size to minimize joints.
- .2 FR polyethylene: minimum 0.15 mm thick, woven fibre reinforced fabric bonded both sides with polyethylene.
- .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 the Department Representative mixed with water in concentration to provide adequate penetration and wetting of asbestos containing material.

- .5 Waste Containers: contain waste in two separate containers.
 - .1 Inner container: 0.15 mm thick sealable polyethylene bag or where glove bag method is used, glove bag itself.
 - .2 Outer container: sealable metal or fibre type where there are sharp objects included in waste material; otherwise outer container may be sealable metal or fibre type or second 0.15 mm thick sealable polyethylene bag.
 - .3 Labeling requirements: affix preprinted cautionary asbestos warning, in both official languages, that is visible when ready for removal to disposal site. Label containers in accordance with Asbestos Regulations [29 CFR 1910.1001]. Label in both official languages.
 - .4 Tape: tape suitable for sealing polyethylene to surfaces under both dry and wet conditions using amended water.
- .6 Additional Equipment where required:
 - .1 portable HEPA-filtered exhaust units with extra fuses;
 - .2 replacement HEPA filters;
 - .3 flexible or rigid duct;
 - .4 vacuum cleaners fitted with HEPA filters;
 - .5 electrical extension cords;
 - .6 portable ground fault circuit interrupter (GFCI);
 - .7 garden hose;
 - .8 hand pump garden sprayer to wet asbestos;
 - .9 wetting agent (50 per cent polyoxyethylene ether and 50 percent polyoxyethylene, or equivalent);
 - .10 scrapers, nylon brushes, dust pans, shovels, etc.;
 - .11 scaffolds with railings;
 - .12 duct tape or an alternative tape with similar or better adhesive qualities;
 - .13 polyethylene sheeting having a minimum six mil thickness;
 - .14 six mil thick labelled asbestos disposal bags;
 - .15 barriers and warning signs;

3 EXECUTION

3.01 Procedures

- .1 Do construction occupational health and safety in accordance with Section 01 35 32 - Specific Health and Safety Plan.
- .2 Work Areas:
 - .1 Shut off and isolate air handling and ventilation systems to prevent fibre dispersal to other building areas during work phase. Conduct smoke tests to ensure that duct work is airtight. Seal and caulk joints and seams of active return air ducts within Asbestos Work Area.
 - .2 Prior to beginning Work, remove moveable objects furniture and carpeting from work area.
 - .3 Preclean moveable furniture and carpeting within proposed work area using HEPA vacuum and remove from work area to temporary location in adjacent Site.
 - .4 Preclean fixed casework, plant, and equipment within proposed work area, using HEPA vacuum and cover with polyethylene sheeting

- sealed with tape.
- .5 Clean proposed work area using, where practicable, HEPA vacuum cleaning equipment. If not practicable, use wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum equipment.
- .6 The spread of dust from the work area to be prevented by:
 - .1 Using enclosures of polyethylene or other suitable material that is impervious to asbestos (including, if the enclosure material is opaque, one or more transparent window areas to allow observation of the entire work area from outside the enclosure), if the work area is not enclosed by walls.
 - .2 Using curtains of polyethylene sheeting or other suitable material that is impervious to asbestos, fitted on each side of each entrance or exit from the work area.
- .7 Put negative pressure system in operation and operate continuously from time first polyethylene is installed to seal openings until final completion of work including final cleanup. Provide continuous monitoring of pressure difference using automatic recording instrument. The system to maintain a negative air pressure of 0.02 inches [5 Pa] of water, relative to the area outside the enclosed area. The system to be inspected and maintained by a competent person prior each use to ensure that there is no air leakage, and if the filter is found to be damaged or defective, it to be replaced before the ventilation system is used.
- .8 Seal off openings such as corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.
- .9 Cover floor and wall surfaces with polyethylene sheeting sealed with tape. [Use [one] [two] layer [s] of FR polyethylene on floors]. Cover floors first so that polyethylene extends at least 300 mm up walls then cover walls to overlap floor sheeting.
- .10 Build airlocks at entrances to and exits from work area[s] so that work area is always closed off by one curtained doorway when workers enter or exit.
- .11 At each access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where number in parentheses indicates font size to be used: "CAUTION ASBESTOS HAZARD AREA (25 mm) NO UNAUTHORIZED ENTRY (19 mm) WEAR ASSIGNED PROTECTIVE EQUIPMENT (19 mm) BREATHING ASBESTOS DUST MAY CAUSE SERIOUS BODILY HARM (7 mm)".
- .12 After work area isolation, remove heating, ventilating, and air conditioning filters, pack in sealed plastic bags 0.15 mm minimum thick and treat as contaminated asbestos waste. 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 WSCC, and Department Representative. Use localized water spraying during fixture removal to reduce fibre dispersal.
- .13 Maintain emergency and fire exits from work area, or establish alternative exits satisfactory to Territorial Fire Marshall.
- .14 Where application of water is required for wetting asbestos containing materials, shut off electrical power, provide 24 volt safety lighting and ground fault interrupter circuits on power

source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.

.15 Worker Decontamination Enclosure System:

- .1 Worker Decontamination Enclosure System includes Equipment and Access Room, Shower Room, and Clean Room, as follows:
 - .1 Equipment and Access Room: build Equipment and Access Room between Shower Room and work area[s], with two curtained doorways, one to Shower Room and one to work area[s]. Install portable toilet, waste receptor, and storage facilities for workers' shoes and protective clothing to be reworn in work area[s]. Build Equipment and Access Room large enough to accommodate specified facilities, other equipment needed, and at least one worker allowing him /her sufficient space to undress comfortably.
 - .2 Shower Room: build Shower Room between Clean Room and Equipment and Access Room, with two curtained doorways, one to Clean Room and one to Equipment and Access Room. Provide one shower for every five workers. Provide constant supply of hot and cold or warm water. The building is not currently serviced with water or wastewater services. Cold and hot water sources will be made available at the time of the abatement work. Provide piping and connect to water sources and drains. Pump waste water through 5 micrometre filter system acceptable to the Department Representative before directing into drains. Provide soap, clean towels, and appropriate containers for disposal of used respirator filters.
 - .3 Clean Room: build Clean Room between Shower Room and clean areas outside of enclosures, with two curtained doorways, one to outside of enclosures and one to Shower Room. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.

.16 Container and Equipment Decontamination Enclosure System:

- .1 Container and Equipment Decontamination Enclosure System consists of Staging Area within work area, Washroom, Holding Room, and Unloading Room. Purpose of system is to provide means to decontaminate waste containers, scaffolding, waste and material containers, vacuum and spray equipment, and other tools and equipment for which Worker Decontamination Enclosure System is not suitable.
- .2 Staging Area: designate Staging Area in 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. Equip Staging Area with curtained doorway to Washroom.
- .3 Washroom: build Washroom between Staging Area and Holding Room with two curtained doorways, one to Staging Area and one to Holding Room. Provide high - pressure low - volume sprays for washing of waste containers and equipment. Pump

- waste water through 5 micrometre filter system before directing into drains. Provide piping and connect to water sources and drains.
- .4 Holding Room: build Holding Room between Washroom and Unloading Room, with two curtained doorways, one to Washroom and one to Unloading Room. Build Holding Room sized to accommodate at least two waste containers and largest item of equipment used.
 - .5 Unloading Room: build Unloading Room between Holding Room and outside, with two curtained doorways, one to Holding Room and one to outside.
- .17 Construction of Decontamination Enclosures:
- .1 Build suitable framing for enclosures, and line with polyethylene sheeting sealed with tape. Use one layer of FR polyethylene on floors where appropriate not covering the ACM vinyl sheet flooring material.
 - .2 Build curtained doorways between enclosures so that when people move through or when waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.
- .18 Maintenance of Enclosures:
- .1 Maintain enclosures in tidy condition.
 - .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 beginning of each working period.
 - .4 Use smoke methods to test effectiveness of barriers when directed by Departmental Representative.
- .19 Do not begin Asbestos Abatement work 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 Work area[s] and decontamination enclosures effectively segregated.
 - .4 Tools, equipment, and materials waste containers are on hand.
 - .5 Arrangements have been made for building security.
 - .6 Warning signs are displayed where access to contaminated areas is possible.
 - .7 Notifications have been completed and other preparatory steps have been taken. Establish the work procedures to be followed and assemble the equipment required to perform the job. Obtain the necessary building permit(s) by the municipality or accredited agency that issues building permits. Have the following documentation available:
 - .1 required permits;
 - .2 written lock-out procedures;
 - .3 proof of worker training;
 - .4 names of supervisory personnel;
 - .5 shop drawings of work area layout/decontamination facility;
 - .6 construction schedule;
 - .7 certification of HEPA-filtered equipment;
 - .8 code of practice for respiratory protection.

- .8 Ensure all HEPA-filtered equipment has been tested before the job commences.
- .9 Ensure workers are adequately trained in the hazards and proper methods of working with asbestos.

3.02 Supervision

- .1 Minimum of one Supervisor for every ten workers is required.
- .2 Approved Supervisor must remain within Asbestos Work Area during disturbance, removal, or other handling of asbestos containing materials.

3.03 Asbestos Removal

- .1 Before removing asbestos:
 - .1 Prepare site.
 - .2 Spray asbestos material with water containing specified wetting agent, using airless spray equipment capable of providing "mist" application to prevent release of fibres. Saturate asbestos material sufficiently to wet it to substrate without causing excess dripping. Spray asbestos material repeatedly during work process to maintain saturation and to minimize asbestos fibre dispersion.
- .2 Remove saturated asbestos material in small sections. Do not allow saturated asbestos to dry out. As it is being removed pack 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 Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .4 After completion of stripping work, wire brushed and wet sponged surfaces from which asbestos has been removed to remove visible material. During this work keep surfaces wet.
- .5 Where the Department Representative decides complete removal of asbestos containing material is impossible due to obstructions such as structural members or major service elements, and provides written direction, encapsulate material as follows:
 - .1 Apply surface film forming type sealer to provide 0.635 mm minimum dry film thickness over sprayed asbestos surfaces. Apply using airless spray equipment to avoid blowing off fibres. Apply penetrating type sealer to penetrate existing sprayed asbestos surfaces to uniform depth of 25 mm minimum.
- .6 After wire brushing and wet sponging to remove visible asbestos, wet clean entire work area including Equipment and Access Room, and

- equipment used in process. After 24 hour period to allow for dust settling, wet clean these areas and objects again. During this settling period no entry, activity, or ventilation will be permitted. After second 24 hour period under same conditions, clean these areas and objects again using HEPA vacuum followed by wet cleaning. After inspection by the Department Representative apply continuous coat of slow drying sealer to surfaces of work area. Allow at least 16 hours with no entry, activity, ventilation, or disturbance other than operation of negative pressure units during this period].
- .7 Work is subject to visual inspection and air monitoring. Contamination of surrounding areas indicated by visual inspection or air monitoring will require complete enclosure and clean-up of affected areas.
- .8 Cleanup:
- .1 Frequently during Work and immediately after completion of work, clean up dust and asbestos containing waste using HEPA vacuum or by damp mopping.
 - .2 Place dust and asbestos containing waste in sealed dust tight waste bags. Treat drop sheets and disposable protective clothing as asbestos waste and wet and fold to contain dust and then place in waste bags.
 - .3 Immediately before their removal from Asbestos Work Area and disposal, clean each filled waste bag using damp cloths or HEPA vacuum and place in second clean waste bag.
 - .4 Seal and remove double bagged waste from site. Dispose of in accordance with requirements of Provincial/Territorial and Federal authority having jurisdiction. Supervise dumping and ensure that dump operator is fully aware of hazardous nature of material to be dumped and that guidelines and regulations for asbestos disposal are followed.
 - .5 Perform final thorough clean-up of Asbestos Work Areas and adjacent areas affected by Work using HEPA vacuum.

3.04 Final Clean-up

- .1 Following cleaning specified in Section 3.3 above, and when air sampling shows that asbestos levels on both sides of seals do not exceed 0.01 fibres/cc as determined by membrane filter method at 400-500X magnification phase contrast illumination, as described in NIOSH Method 94-113 or equivalent, proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible asbestos containing particles observed during cleanup, immediately, using HEPA vacuum equipment.
- .3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Include in clean-up Work areas, Equipment and Access Room, Washroom, Shower Room, and other contaminated enclosures.
- .5 Include in clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination

Enclosure System, at appropriate time in cleaning sequence.

- .6 Conduct final check to ensure that no dust or debris remains on surfaces as result of dismantling operations and carry out air monitoring again to ensure that asbestos levels in building do not exceed 0.01 fibres/cc. Repeat cleaning using HEPA vacuum equipment, or wet cleaning methods where feasible, in conjunction with sampling until levels meet this criteria.
- .7 As work progresses, and to prevent exceeding available storage capacity on site, remove sealed and labelled containers containing asbestos waste and dispose of to authorized disposal area in accordance with requirements of disposal authority. Ensure that each shipment of containers transported to dump is accompanied by Contractor's representative to ensure that dumping is done in accordance with governing regulations.
- .8 Perform inspection of Asbestos Work Area to confirm compliance with specification and governing authority requirements. Deviation[s] from these requirements that have not been approved in writing by the Department Representative may result in Work stoppage, at no cost to Owner
- .9 The Department Representative will inspect Work for:
 - .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .10 When asbestos leakage from Asbestos Work Area has occurred or is likely to occur the Department Representative may order Work shutdown. No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.05 Re-Establishment of Objects and Systems

- .1 When cleanup is complete:
 - .1 The building is to be demolished and there will not be any re-establishment of objects and systems in the building.

3.06 Air Monitoring

- .1 From beginning of Work until completion of cleaning operations the Department Representative to take air samples on daily basis outside of work area enclosure in accordance with Health Canada recommendations.
 - .1 Contractor will be responsible for monitoring inside enclosure in accordance with applicable Provincial/Territorial Occupational Health and Safety Regulations.
- .2 Use results of air monitoring inside work area to establish type of respirators to be used. Workers may be required to wear sample pumps for up to full-shift periods.
 - .1 If fibre levels are above safety factor of respirators in use, stop abatement, apply means of dust suppression, and use higher

- safety factor in respiratory protection for persons inside enclosure.
- .2 If air monitoring shows that areas outside work area enclosures are contaminated, enclose, maintain and clean these areas, in same manner as that applicable to work areas
- .3 Air sampling to determine airborne asbestos fibre concentration is required before and during the abatement work, and prior to removal of the enclosure. All air sampling must be completed by competent personnel following specified methods.
- .3 Where possible, results should be made available to workers on the same day (or as soon as possible following the sampling). Sampling should include the following:
 - .1 Before work starts in the work areas - Background samples to establish baseline airborne fibre levels;
 - .2 On a daily basis outside the enclosure - sample when there are unprotected workers in the immediate vicinity of the enclosure. In some cases, sampling may be required in other areas such as the floors above or below, or in adjacent rooms, depending on the set-up of the work site and occupancy of these areas;
 - .3 During initial and subsequent stages of the abatement project - personal sampling of workers conducting removal. Ensure that results are within acceptable limits for the respiratory protection selected. Personal samples should be collected at least daily, but can be collected more frequently depending on work conditions. Filters must be analyzed and results provided to workers within 24 hours;
 - .4 On a daily basis in the clean room - sample during bulk removal operations. Sampling must cover at least half of the workshift and at least one shift of decontamination. Samples must be analyzed and results provided to workers within 24 hours;
 - .5 Before the enclosure is dismantled - the air inside the enclosure must be sampled. At a minimum, one sample should be collected or every 450 m² of enclosure area to determine suitability for re-occupancy. The air test should be completed using aggressive air sampling techniques.
 - .6 If the levels inside the containment exceed the protection factor of the type of respiratory equipment being used, work must stop until appropriate respirators are supplied and airborne fibre levels can be controlled.
- .4 Final air monitoring test results should be less than 0.01 fibres per cubic centimetre using aggressive Sampling techniques. If the final air tests fail, the Containment cannot be dismantled. The work area should be glue-sprayed again and re-tested.

3.07 Inspection

- .1 Perform inspection of Asbestos Work Area to confirm compliance with specification and governing authority requirements. Deviation[s] from these requirements that have not been approved in writing by Departmental Representative may result in Work stoppage, at no cost to Owner.
- .2 Departmental Representative will inspect Work for:

- .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
- .3 When asbestos leakage from Asbestos Work Area has occurred or is likely to occur Departmental Representative may order Work shutdown.
- .1 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

END OF SECTION

1 GENERAL

1.01 Summary

- .1 Comply with requirements of this Section when performing following Work:
 - .1 Removal of building materials with lead-based paint.

1.02 References

- .1 Department of Justice Canada
 - .1 Canadian Environmental Protection Act, 1999 (CEPA).
- .2 Health Canada
 - .1 Workplace Hazardous Materials Information System (WHMIS), Material Safety Data Sheets (MSDS).
- .3 Human Resources and Social Development Canada (HRSDC)
Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .4 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .5 U.S. Department of Health and Human Services/Centers for Disease Control and Prevention/National Institute for Occupational Safety and Health (NIOSH)
 - .1 NIOSH 94-113 - NIOSH Manual of Analytical Methods (NMAM), 4th Edition (1994).
- .6 Government of Nunavut, Department of Environment: Environmental Guideline for the General Management of Waste Lead and Lead Paint (Original 2001, updated 2014).

1.03 Definitions

- .1 HEPA vacuum: High Efficiency Particulate Air filtered vacuum equipment with filter system capable of collecting and retaining fibres greater than 0.3 microns in any direction at 99.97% efficiency.
- .2 Authorized Visitors: Owner, Departmental Representative or designated representative[s] and representatives of regulatory agencies.
- .3 Occupied Area: areas of building or work site that is outside Work Area.
- .4 Sprayer: garden reservoir type sprayer or airless spray equipment capable of producing mist or fine spray. Must be appropriate capacity for scope of work.
- .5 Airlock: ingress or egress system, without permitting air movement between contaminated area and uncontaminated area. Consisting of two

curtained doorways at least 2 m apart.

- .1 Curtained doorway: arrangement of closures to allow ingress and egress from one room to another. Typically constructed as follows:
 - .1 Place two overlapping polyethylene sheets over existing or temporarily framed doorway, securing each along top of doorway, securing vertical edge of one sheet along one vertical side of doorway, and secure other sheet along opposite vertical side of doorway.
 - .2 Reinforce free edges of polyethylene with duct tape and add weight to bottom edge to ensure proper closing.
 - .3 Overlap each polyethylene sheet at openings 1.5 m on each side.
- .2 Action level: employee exposure, without regard to usage of respirators, to an airborne concentration of lead of 50 micrograms per cubic meter of air calculated as 8 hour time-weighted average (TWA). Intermediate precautions for lead abatement are based on airborne lead concentrations greater than 0.05 milligrams per cubic meter of air within Work Area.
- .3 Competent person: individual capable of identifying existing lead hazards in workplace and taking corrective measures to eliminate them.
- .4 Lead in Dust: wipe sampling on vertical and/or horizontal surfaces, dust and debris is considered to be lead contaminated if it contains more than 40 micrograms of lead in dust per square foot.

1.04 Action and Informational Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide proof satisfactory to Departmental Representative that suitable arrangements have been made to dispose of lead-based paint waste in accordance with requirements of authority having jurisdiction.
- .3 Provide: Provincial, Territorial and local requirements for Notice of Project Form.
- .4 Quality Control:
 - .1 Provide Departmental Representative necessary permits for transportation and disposal of lead-based paint waste and proof that it has been received and properly disposed.
 - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of lead exposure, respirator use, dress, entry and exit from Work Area, and aspects of work procedures and protective measures.
 - .3 Provide proof that supervisory personnel have attended lead abatement course, of not less than two days duration, approved by Departmental Representative. Minimum of one supervisor for every ten workers.
 - .1 Product data:
 - .1 Provide documentation including test results, fire and flammability data, and Material Safety Data

Sheets (MSDS) for chemicals or materials including:

- .1 Encapsulants.
- .2 Amended water.
- .3 Slow drying sealer.

1.05 Quality Assurance

- .1 Regulatory Requirements: comply with Federal, Provincial/Territorial and local requirements pertaining to lead paint, in case of conflict among those requirements or with these specifications more stringent requirement applies. Comply with regulations in effect at time work is performed.
- .2 Health and Safety:
 - .1 Do construction occupational health and safety in accordance with Section 01 35 29.14 - Health and Safety for Contaminated Sites.
 - .2 Safety Requirements: worker and visitor protection.
 - .1 Protective equipment and clothing to be worn by workers and visitors in Work Area includes:
 - .1 Respirator NIOSH approved and equipped with filter cartridges with assigned protection factor of [50], acceptable to Authority having jurisdiction. Suitable for type of lead and level of lead dust exposure in Lead Work Area. Provide sufficient filters so 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 skin contamination, consisting of full body covering including head covering with snug fitting cuffs at wrists, ankles, and neck.
 - .2 Requirements for workers:
 - .1 Remove street clothes in clean change room and put on respirator with new filters or reusable filters, clean coveralls and head covers before entering Equipment and Access Rooms or Work Area. Store street clothes, uncontaminated footwear, towels, and similar uncontaminated articles in clean change room.
 - .2 Remove gross contamination from clothing before leaving work area. Place contaminated work suits in receptacles for disposal with other lead - contaminated materials. Leave reusable items except respirator in Equipment and Access Room. When not in use in Work Area, store work footwear in Equipment and Access Room. Upon completion of lead 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.
 - .1 Enter unloading room from outside dressed in clean coveralls to remove waste containers and equipment from Holding Room of Container and Equipment Decontamination Enclosure system. Workers not to use this system as means to

- leave or enter work area.
- .3 Eating, drinking, chewing, and smoking are not permitted in Work Area.
- .4 Ensure workers are fully protected with respirators and protective clothing during preparation of system of enclosures prior to commencing actual lead abatement.
- .5 Ensure workers wash hands and face when leaving Work Area. Facilities for washing are located as indicated on drawings.
- .6 Provide and post in Clean Change Room and in Equipment and Access Room the procedures described in this Section, in both official languages.
- .7 Ensure no person required to enter Work Area has facial hair that affects seal between respirator and face.
- .8 Visitor Protection:
 - .1 Provide protective clothing and approved respirators to Authorized Visitors to Work Areas.
 - .2 Instruct Authorized Visitors in use of protective clothing, respirators and procedures.
 - .3 Instruct Authorized Visitors in proper procedures to be followed in entering into and exiting from Work Area.

1.06 Waste Management and Disposal

- .1 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
- .2 Disposal of lead waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations. Dispose of lead waste in sealed double thickness 6 ml bags or leak proof drums. Label containers with appropriate warning labels.
- .3 Provide manifests describing and listing waste created. Transport containers by approved means to licensed landfill for burial.

1.07 Existing Conditions

- .1 The laboratory results indicated that several paint samples collected from the site contained concentrations of lead in excess of the recommended limit of the Government of Nunavut.
- .2 Reports and information pertaining to lead based paint to be handled, removed, or otherwise disturbed and disposed of during this Project are bound into this specification.
- .3 Notify Departmental Representative of lead based paint discovered during Work and not apparent from drawings, specifications, or report pertaining to Work. Do not disturb such material until instructed by Departmental Representative.

1.08 Scheduling

- .1 Not later than seven (7) days before beginning Work on this Project notify the following in writing, where appropriate:
 - .1 Territorial Authority having jurisdiction.
 - .2 Disposal Authority.
- .2 Inform sub trades of presence of lead-containing materials identified in Existing Conditions.
- .3 Provide Departmental Representative copy of notifications prior to start of Work.

2 PRODUCTS

2.01 Materials

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

3 EXECUTION

3.01 Supervision

- .1 Approved Supervisor must remain within Lead Work Area during disturbance, removal, or other handling of lead-based paints.

3.02 Preparation

- .1 Contractor to provide a proposed layout under the SUBMITTALS paragraph of this Section.
- .2 Work Area:
 - .1 Shut off and isolate HVAC system to prevent dust dispersal into other building areas. Conduct smoke tests to ensure duct work is airtight.

- .2 Clean work areas using HEPA vacuum. If not practicable, use wet cleaning method. Do not use methods that raise dust, such as dry sweeping, or vacuuming using other than HEPA vacuum.
- .3 Seal off openings, corridors, doorways, windows, skylights, ducts, grilles, and diffusers, with polyethylene sheeting sealed with tape.
- .4 Cover floor surfaces in work area from wall to wall with FR polyethylene drop sheets to protect existing floor during removal.
- .5 Build airlocks at entrances and exits from work areas to ensure work areas are always closed off by one curtained doorway when workers enter or exit.
- .6 At point of access to work areas install warning signs in both official languages in upper case "Helvetica Medium" letters reading as follows where number in parentheses indicates font size to be used:
 - .1 CAUTION LEAD HAZARD AREA (25 mm).
 - .2 NO UNAUTHORIZED ENTRY (19 mm).
 - .3 WEAR ASSIGNED PROTECTIVE EQUIPMENT AND RESPIRATOR (19 mm).
 - .4 BREATHING LEAD CONTAMINATED DUST CAUSES SERIOUS BODILY HARM (7 mm).
- .7 Maintain emergency and fire exits from work areas, or establish alternative exits satisfactory to Authority having jurisdiction.
- .8 Where water application is required for wetting lead-containing materials, provide temporary water supply by use of appropriately sized hoses for application of water as required.
- .9 Provide electrical power and shut off for operation of powered tools and equipment. Provide 24 volt safety lighting and ground fault interrupter circuits on power source for electrical tools, in accordance with applicable CSA Standard. Ensure safe installation of electrical lines and equipment.
- .3 Worker Decontamination Enclosure System:
 - .1 Worker Decontamination Enclosure System includes Equipment and Access Room and Clean Room, as follows:
 - .1 Equipment and Access Room: construct between exit and work areas, with two curtained doorways, one to the rest of suite, and one to work area. Install waste receptor and storage facilities for workers' shoes and protective clothing to be re-worn in work areas. Build large enough to accommodate specified facilities, equipment needed, and at least one worker allowing sufficient space to change comfortably.
 - .2 Clean Room: construct with curtained doorway to outside of enclosures. Provide lockers or hangers and hooks for workers' street clothes and personal belongings. Provide storage for clean protective clothing and respiratory equipment. Install mirror to permit workers to fit respiratory equipment properly.
- .1 Construction of Decontamination Enclosures:
 - .1 Construct framing for enclosures or use existing rooms. Line enclosure with polyethylene sheeting and seal with tape; apply two layers of FR polyethylene on floor.

- .2 Construct curtain doorways between enclosures so when people move through or waste containers and equipment are moved through doorway, one of two closures comprising doorway always remains closed.
- .2 Maintenance of Enclosures:
 - .1 Maintain enclosures in clean condition.
 - .2 Ensure barriers and polyethylene linings are effectively sealed and taped. Repair damaged barriers and remedy defects immediately.
 - .3 Visually inspect enclosures at beginning of each work day.
 - .4 Use smoke test method to test effectiveness of barriers as directed by Departmental Representative.

3.03 Lead-Based Paint Abatement

- .1 Removal of lead-based paint to be performed by scraping or sanding using non-powered hand tools, or manual demolition of lead-painted plaster walls or building components by striking a wall with sledgehammer or similar tool.
- .2 Remove lead-based paint in small sections and pack as it is being removed in sealable 0.15 mm plastic bags 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 containers are removed from Holding Room by workers who have entered from uncontaminated areas dressed in clean coveralls.
- .4 After completion of stripping work, wire brush and wet sponge surface from which lead based paint has been removed to remove visible material. During this work keep surfaces wet.
- .5 After wire brushing and wet sponging to remove visible lead based paint, and after encapsulating lead-containing material impossible to remove, wet clean work area including equipment and access room, and equipment used in process. After inspection by Departmental Representative apply continuous coat of slow drying sealer to surfaces. Do not disturb work for 8 hours with no entry, activity, ventilation or disturbance during this period.
- .6 After enclosing lead painted surfaces, wet clean work area and equipment and access room. During settling period no entry, activity, or ventilation will be permitted.

3.04 Inspection

- .1 Perform inspection to confirm compliance with specification and governing authority requirements. Deviations from these requirements

- not approved in writing by Departmental Representative will result in work stoppage, at no cost to Owner.
- .2 Departmental Representative will inspect work for:
 - .1 Adherence to specific procedures and materials.
 - .2 Final cleanliness and completion.
 - .3 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.
 - .1 When lead dust leakage from Work Area occurs Departmental Representative may order Work shutdown.
 - .1 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

3.05 Final Cleanup

- .1 Following specified cleaning procedures, and when lead wipe sampling is below acceptable concentrations proceed with final cleanup.
- .2 Remove polyethylene sheet by rolling it away from walls to centre of work area. Vacuum visible lead-containing particles observed during cleanup, immediately, using HEPA vacuum equipment.
- .3 Place polyethylene seals, tape, cleaning material, clothing, and other contaminated waste in plastic bags and sealed labelled waste containers for transport.
- .4 Clean-up Work Areas, Equipment and Access Room, and other contaminated enclosures.
- .5 Clean-up sealed waste containers and equipment used in Work and remove from work areas, via Container and Equipment Decontamination Enclosure System, at appropriate time in cleaning sequence.
- .6 Conduct final check to ensure no dust or debris remains on surfaces as result of dismantling operations.

END OF SECTION

1 GENERAL

1.01 References

- .1 American Board of Industrial Hygiene (ABIH)
- .2 Canadian Council of Ministers of the Environment (CCME)
 - .1 PN1205-[1995], PCB Transformer Decontamination: Standards and Protocols.
- .3 Department of Justice Canada (Jus)/CEPA SOR/92-507-[SOR/2000-102]
 - .1 Storage of PCB Material Regulations
 - .2 Canadian Environmental Protection Act, 1999 (CEPA).
- .4 Environment Canada
 - .1 Manual for Spills of Hazardous Materials-1985.
 - .2 Identification of lamp ballasts containing PCBs, Environment Canada, 1991.
- .5 Transport Canada (TC)
 - .1 Transportation of Dangerous Goods Act, 1992 (TDGA).
- .6 Department of Justice Canada (Jus)/CEPA, 1999 Federal PCB Regulations, (SOR/2008-273).
- .7 Chlorobiphenyls Regulations (SOR/91-152; Amended SOR/2000-102)
 - .1 Regulations Respecting Mobile System for the Destruction and Treatment of Chlorobiphenyls that are Operated by or Under Contract with Federal Institutions (SOR/90-5; amended SOR/93-231 and SOR/2000-105).
 - .2 Regulations Respecting the Storage of Material Containing Chlorobiphenyls (PCBs) SOR/92-507, Amended SOR/2000-102).
 - .3 Regulations Respecting the Import and Export of Hazardous Wastes (SOR/92-637; Amended 94-459; SOR 94-684; SOR/2000-103).
 - .4 Waste Management - PCBs, R.R.O. Regulation 362/90.
 - .5 Mobile PCB Destruction Facilities, R.R.O. Regulation 352/90.
 - .6 Regulation 347, General Waste Management, as Amended.

1.02 Action and Informational Submittals

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to starting work, Contractor performing work of this section to provide:
 - .1 Workplace Safety and Insurance Board Clearance Certificate.
 - .2 Insurance certificates.
 - .3 Company Health and Safety Policy.
 - .4 Certificate of Approval for Transportation of PCB Waste and Location of Destruction Facility.
 - .5 WHMIS Training Certificates for Personnel.

- .6 Material Safety Data Sheets for chemicals or material to be used.
- .3 Waste location and description including:
 - .1 Building in which PCB waste is stored.
 - .2 Size of property used for storage site.
 - .3 Precise location of PCB waste at storage site.
 - .4 Container storage method used.
 - .5 Spill containment features in place at storage site.
 - .6 Security measures in place at storage site.
 - .7 Fire detection systems in place at storage site.

1.03 Control Submittals

- .1 Record keeping: maintain and make available for review by Departmental Representative
 - .1 Receipt of waste showing:
 - .1 Date of receipt of waste.
 - .2 Description of PCB waste including nameplate description, serial number, PCB registration number and quantity.
 - .3 Condition of PCB waste.
 - .4 Source of PCB waste.
 - .5 Name of carrier of PCB waste.
 - .6 Name of individual who accepted receipt of PCB waste.
 - .1 Removal of waste showing:
 - .1 Date of removal of PCB waste.
 - .2 Description of PCB waste including nameplate description, serial number, PCB registration number and quantity.
 - .3 Condition of PCB waste.
 - .4 Name of carrier of PCB waste.
 - .5 Destination of PCB waste.
 - .6 Name of individual authorizing transport of PCB waste.
- .2 Submit records to Departmental Representative as requested.

1.04 Quality Assurance

- .1 Instruct personnel on dangers of PCB exposure, respirator use, decontamination and applicable Federal, Provincial/Territorial and Municipal Regulations.
- .2 Complete work so that at no time do PCB's contaminate the building, site and environment.

1.05 Supervision

- .1 Provide on site a supervisor, with authority to oversee health and safety, remediation methods, scheduling, labour and equipment requirements.
- .2 One supervisor for every 10 workers is required.

1.06 Delivery, Storage and Handling

- .1 Place materials defined as hazardous or toxic in designated containers.
- .2 Handle and dispose of hazardous materials in accordance with the CEPA, TDGA, Regional and Municipal regulations.
- .3 Owners or operators of storage sites.
 - .1 Provide method for determining concentration of PCBs in particular waste at request of Departmental Representative.
 - .2 Ensure personnel are familiar with and understand current PCB waste management procedures and use of personal protection equipment and clean-up techniques.
- .4 Disposal of PCB waste generated by removal activities must comply with Federal, Provincial, Territorial and Municipal regulations.
 - .1 Dispose of PCB waste in leak proof drums.
 - .2 Containers must be labelled with appropriate warning labels.
- .5 Create manifests describing and listing waste created and transport containers by approved means to licenced facility for storage.
 - .1 For each bulk load of PCBs: identity PCB waste, earliest date of removal from service for disposal, and weight in kilograms of the PCB waste.
 - .2 For each PCB Article Container or PCB Container: unique identifying number, type of PCB waste (i.e., soil, debris, small capacitors), earliest date of removal from service for disposal, and weight in kilograms of PCB waste contained.
 - .3 For each PCB Article not in PCB Container or PCB Article Container: serial number if available, or other identification if there is no serial number, date of removal from service for disposal, and weight in kilograms of PCB waste in each PCB Article.

2 PRODUCTS

2.01 Storage General

- .1 Storage of PCB materials must be in accordance with CEPA SOR/92-507.

2.02 Storage Enclosure

- .1 Isolate PCB control area by physical boundaries to prevent unauthorized entry of personnel.
- .2 Food, drink and smoking materials are not permitted in areas where PCBs are handled or PCB items are stored.
- .3 Room, building or structure with lockable entrance.
- .4 Temporary storage facility to be a fully enclosed block wall room within building with appropriate warning signs.
- .5 Woven mesh wire fence or other fence with similar characteristics at

least 2.0 metres high, with lockable entrance.

- .6 Smoking is not permitted within 15 m of PCB control area.
 - .1 Provide and post "No Smoking" signs as directed by Departmental Representative.

2.03 Storage Containers

- .1 Exterior Containers
 - .1 Structurally-sound and weather-sealed to hold PCB solids, PCB light ballasts, drained PCB containers or drained PCB equipment.
- .2 PCB liquid or solid storage.
 - .1 Drums and containers:
 - .1 Designed with sufficient durability and strength to prevent PCB from being released into environment, affected by weather, or contaminated by external sources.
- .3 Drums:
 - .1 Capacity no greater than 205 litres.
 - .2 Steel of minimum 1.2 mm for solids or 1.52 mm for liquids.
 - .3 Ensure removable steel lid securely attached and complete with PCB-resistant gasket for solids.
 - .4 Paint or treat interior and exterior to prevent rusting.
- .4 Drum Liners:
 - .1 6 mil clear polyethylene bag, 914 mm x 1524 mm, with opening at 914 mm end.

2.04 Emergency Response Equipment and Systems

- .1 Temporary Storage site clean-up materials:
 - .1 Ensure availability at all time of sorbent or solvents, for clean-up of liquid or solids.
 - .2 Ensure availability at all times of inert absorbent in sufficient quantity to contain minor leakage.
 - .1 Place in bottom of each container holding PCB equipment or fluorescent lighting ballasts.
- .2 Respirators: Certified by the National Institute of Occupational Safety and Health (NIOSH) or other testing agency acceptable to the Ministry of Labour.
 - .1 Use approved full-face organic vapour cartridge respirator for exposure to hot PCB.
 - .2 Vapour concentration less than or equal to 5 mg/m³.
 - .1 Supplied-air respirator with full face piece, helmet or hood.
 - .2 Self-contained breathing apparatus with full face piece.
- .3 Vapour concentration greater than 5 mg/m³ or unknown concentrations.
 - .1 Self-contained breathing apparatus with full face piece operated in positive pressure mode.
 - .2 Type C supplied-air respirator with full face piece operated in positive pressure of continuous flow mode and auxiliary self-contained breathing apparatus operated in positive pressure mode.

2.05 Warning Signs and Labels

- .1 Label capacitors containing 0.5 kilogram or more of chlorobiphenyls with black and white serialized label, measuring 76 x 76 mm, as approved by Departmental Representative in accordance with TDGA requirements.
 - .2 Label container with a capacitor containing 0.5 kg or more of chlorobiphenyls with black and white serialized, "ATTENTION PCB" label, measuring 150 x 150 mm, as approved by Departmental Representative in accordance with TDGA requirements.
 - .3 Label electrical transformers, electromagnets and other equipment containing chlorobiphenyls in concentration exceeding 1% with black and white, serialized, "ATTENTION PCB" label, measuring 150 x 150 mm, as approved by Departmental Representative in accordance with TDGA requirements.
- .2 Maintain signs and labels in clear and legible condition.

3 EXECUTION

3.01 General

- .1 Do construction occupational health and safety in accordance with Section 01 35 32 - Specific Health and Safety Plan.
- .2 Store PCB waste materials in accordance to CEPA SOR/92-507.
- .3 Select PCB removal procedure to minimize contamination of work areas with PCB or other PCB-contaminated debris/waste. Handle PCBs such that no skin contact occurs.
- .4 As feasible, do not carry out PCB handling operations in confined spaces. Confined space means space having limited means of egress and inadequate cross ventilation.
- .5 Ensure that work operations or processes involving PCB or PCB-contaminated materials are conducted in accordance with Federal, Provincial/Territorial and Municipal Regulations and applicable requirements of this Section, including but not limited to:
 - .1 Obtaining advance approval of PCB storage sites.
 - .2 Notify Departmental Representative prior to beginning operations.
 - .3 Report leaks and spills to Departmental Representative.
 - .4 Maintain access log of employees working in PCB control area and provide copy to Departmental Representative upon completion of operations.
 - .5 Inspect PCB and PCB-contaminated items and waste containers for leaks and forward copies of inspection reports to Departmental Representative.
 - .6 Maintain spill kit for emergency spills entitled "PCB Spill Kit".
 - .7 Maintain inspection, inventory and spill records.

3.02 Access to Stored Material

- .1 Store materials and equipment to permit easy access for inspection.

3.03 Storage Practices

- .1 Stack containers only if designed for stacking.
- .2 Stack containers or drums no higher than 2 containers.
- .3 Separate stacked drums from each other with pallets.
- .4 Store material to prevent it from catching fire.
- .5 Store material to prevent it from being released.
- .6 Store PCB material together, and away from other stored materials.
- .7 Exterior:
 - .1 Cover PCB liquid containers with waterproof roof or cover extending beyond curbing or sides of container.
 - .2 Elevate PCB waste containers and PCB equipment on pallets or other suitable devices to reduce corrosion.
 - .3 Store transformers on skids.
- .1 Interior:
 - .1 Place on skids or pallets PCB equipment and containers of PCB material not permanently secured to floor or surface.

3.04 Emergency Responses

- .1 General:
 - .1 Immediately report to Departmental Representative PCB spills on ground or in water, PCB spills in drip pans, or PCB leaks.
 - .2 Rope off area around edges of PCB leak or spill and post "PCB Spill Authorized Personnel Only" caution sign. Immediately transfer leaking items to drip pan or other container.
 - .3 Initiate cleanup of spills as soon as possible, but no later than 48 hours of its discovery. If misting, elevated temperatures or open flames are present, or if spill is situated in confined space, notify Departmental Representative. Mop up liquid with rags or other conventional absorbent. Properly contained and dispose of spent absorbent as solid PCB waste.
 - .4 Workers to evacuate site. When leaving, shut down water in use. Only personnel trained in use of, and wearing SCBA apparatus, will be allowed to re-enter site.
 - .5 Do not return to site until Owner's representative and Ministry of the Environment representatives have declared the area safe for re-entry.
- .2 Spill, leak, and disposal procedures:
 - .1 Permit access to only those wearing protective equipment and clothing.
 - .2 Issue poison warnings.
 - .3 Call local fire department or PCB Emergency Response Team.
 - .4 Avoid contact and inhalation.
 - .5 Remove ignition sources.
 - .6 Ventilate areas of spill or leak.
 - .7 Stop or reduce discharge if possible without risk.
 - .8 Collect spilled material for reclamation.

- .9 Do not flush to sewer.
- .10 Use only inert absorbents as approved by Departmental Representative.
- .11 Wipe contaminated area with rags and fuel oil. Do not use acetone or toluene.
- .12 Notify environmental authorities to determine disposal and clean-up procedures.
- .3 Respirators:
 - .1 Use when chlorobiphenyl concentrations are above permissible exposure levels.
 - .2 Use when entering tanks or closed vessels.
 - .3 Use in emergency situations.
- .4 Permissible exposure limit.
 - .1 1.0 microgram of chlorobiphenyl (54% chlorine) per cubic metre of air up to 10 hours/day.
- .5 Fire protection:
 - .1 Wear totally encapsulated suit and self-contained breathing apparatus with full face piece operated in positive pressure mode.

3.05 Sanitation

- .1 Promptly wash liquid-contaminated skin with soap or mild detergent and water.
- .2 Prohibit eating and smoking in areas where liquid chlorobiphenyl (54% chlorine) is handled, processed or stored.
- .3 Wash hands thoroughly with soap or mild detergent and water after handling liquid chlorobiphenyl (54% chlorine).

END OF SECTION

1 GENERAL

1.01 RELATED REQUIREMENTS

- 1 Not used.

1.02 REFERENCES

- .1 Underwriters' Laboratories of Canada (ULC)

1.03 ACTION AND INFORMATIONAL SUBMITTALS

- 1 Not used.

1.04 EXISTING CONDITIONS

- .1 Known underground and surface utility lines and buried objects.

2 PRODUCTS

2.01 MATERIALS

- .1 Graded material existing on site suitable to use as fill for grading work if approved by Departmental Representative.

3 EXECUTION

3.01 EXAMINATION

- .1 Verification of Conditions: verify that conditions of substrate are acceptable for rough grading 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 grading only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

3.02 STRIPPING OF TOPSOIL

- 1 Not used.

3.03 GRADING

- .1 Rough grade to levels, profiles, and contours allowing for surface treatment as indicated.
- .2 Rough grade to following depths below finish grades:
 - .1 +/- 25 mm for gravel.

- .3 Slope rough grade away from surrounding structures as directed.
- .4 Compact disturbed areas to the satisfaction of the Departmental Representative.

3.04 TESTING

- 1 Not used.

3.05 CLEANING

- 1 Not used.

3.06 PROTECTION

- .1 Protect natural features, buildings, pavement, 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